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University History Series

John C. Harsanyi  
Anne Klauber Harsanyi

NOBEL LAUREATE JOHN HARSANYI: FROM BUDAPEST TO BERKELEY, 1920-2000

With an Introduction by  
Kenneth J. Arrow

Interviews Conducted by  
Marion Ross  
in 1999

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Since 1954 the Regional Oral History Office has been interviewing leading participants in or well-placed witnesses to major events in the development of northern California, the West, and the nation. Oral history is a method of collecting historical information through tape-recorded interviews between a narrator with firsthand knowledge of historically significant events and a well-informed interviewer, with the goal of preserving substantive additions to the historical record. The tape recording is transcribed, lightly edited for continuity and clarity, and reviewed by the interviewee. The corrected manuscript is indexed, bound with photographs and illustrative materials, and placed in The Bancroft Library at the University of California, Berkeley, and in other research collections for scholarly use. Because it is primary material, oral history is not intended to present the final, verified, or complete narrative of events. It is a spoken account, offered by the interviewee in response to questioning, and as such it is reflective, partisan, deeply involved, and irreplaceable.

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John and Anne Harsanyi, Australia, circa 1954.



## ACKNOWLEDGMENTS

The Regional Oral History Office, on behalf of future researchers,  
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Marion Ross

The Bancroft Library Nobel Laureate Fund



# John C. Harsanyi, 80, Is Dead; Won Nobel Economics Award

By JONATHAN FUERBRINGER

John C. Harsanyi, who won the 1994 Nobel Memorial Prize in Economic Science for his work on game theory, died on Wednesday in Berkeley, Calif.

Mr. Harsanyi, 80, was a professor at the Haas School of Business at the University of California at Berkeley, for 25 years until 1990. He had Alzheimer's disease and died of a heart attack at home in Berkeley, according to his son, Tom.

A Hungarian of Jewish descent, Mr. Harsanyi barely escaped from the forced-labor unit he was drafted into outside Budapest near the end of World War II. While waiting at a crowded railway station to be deported to a mine, Mr. Harsanyi removed his sweater with its yellow star and walked away, his son said.

A guard stopped him and asked him what he was doing there. Mr. Harsanyi, according to his son, said: "I am here to visit one of my Jewish friends who is going to be deported. I think it is important that we stand by our friends in their time of need." The guard let him go. Tom Harsanyi said that of the workers in the forced-labor unit, only his father and three others, who jumped from the train, survived.

Mr. Harsanyi won the Nobel award for his work in game theory, which concentrates on competition among players, using mathematics to forecast the outcome of games, like chess, and also trade wars, hostile takeovers, price wars and other political and economic conflicts. Unlike theories used to explain the interaction in a market of many participants, game theory deals with the fact that when there are just a few players, all of them have to worry about the response of their opponent.

Mr. Harsanyi shared the award with two other economists, John F.

*'Game theory' can  
predict outcomes in  
chess or trade wars.*



Jane Scherr

The economist John C. Harsanyi.

Nash of Princeton University and Reinhard Selten of the University of Bonn. Mr. Nash laid out the basic principles of game theory, but he assumed that the players all shared the same information and were driven by self-interest. Mr. Harsanyi made the theory work when rivals did not know much at all about what the other planned to do. He did this, in part, by assigning probabilities to the possible moves of the players and the outcomes.

"He found a way to allow people to think systematically about markets in which there were a small number of players who had access to different information," said John Quigley, a professor of economics at Berkeley and the former chairman of the economics department.

"For a large set of circumstances, game theory is the way people think today," Mr. Quigley said. Mr. Harsanyi's work, Mr. Quigley added, "was instrumental in making economic theory fit the imperfect world in which we live."

Mr. Harsanyi was born in Buda-

pest on May 29, 1920. His parents were Jewish but converted to Catholicism before he was born. He was raised as a Catholic. His main interests were in mathematics and philosophy. But because of the political uncertainty of the time, he earned a degree in pharmacology so that he could work in his father's pharmacy. He was drafted into the forced-labor unit after Germany occupied Hungary during World War II.

After the war, Mr. Harsanyi remained in Hungary, earning a doctorate in philosophy from the University of Budapest. He was an assistant professor of sociology at the university until the late 1940's, when his views clashed with those of the Communist government. He quit his job and returned to work in his father's pharmacy.

In 1950, he escaped over the border to Austria with his future wife, Anne, and traveled to Australia. He married Anne on Jan. 2, 1951, three days after arriving in Sydney.

He went to the University of Sydney at night to earn a master's degree in economics and became a lecturer in economics at the University of Queensland in Brisbane in 1954. But his son, Tom, said that his father felt that he could not be effective in his field from Australia. So in 1956, he enrolled in the Ph.D. program in economics at Stanford University and studied under Kenneth Arrow, a future Nobel winner in economics.

He returned to Australia to teach economics at the Australian National University from 1958 to 1961 and then returned to the United States to Wayne State University in Detroit from 1961 to 1963. He went to the Haas School at Berkeley in 1964 as a visiting professor and became a full professor in 1965. He was appointed a professor in the Berkeley economics department in 1966.

In 1964, before Mr. Harsanyi developed his procedure for dealing with game theory players with incomplete information, he was asked to be one of 10 game theorists to advise the United States Arms Control and Disarmament Agency on negotiations with the Soviet Union. The 10 advisers said they could not help because both "players" had too little information about the other side.

Mr. Harsanyi is survived by his wife, Anne, of Berkeley, and his son, of Somerville, Mass.





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## PREFACE

When President Robert Gordon Sproul proposed that the Regents of the University of California establish a Regional Oral History Office, he was eager to have the office document both the University's history and its impact on the state. The Regents established the office in 1954, "to tape record the memoirs of persons who have contributed significantly to the history of California and the West," thus embracing President Sproul's vision and expanding its scope.

Administratively, the new program at Berkeley was placed within the library, but the budget line was direct to the Office of the President. An Academic Senate committee served as executive. In the four decades that have followed, the program has grown in scope and personnel, and the office has taken its place as a division of The Bancroft Library, the University's manuscript and rare books library. The essential purpose of the Regional Oral History Office, however, remains the same: to document the movers and shakers of California and the West, and to give special attention to those who have strong and continuing links to the University of California.

The Regional Oral History Office at Berkeley is the oldest oral history program within the University system, and the University History Series is the Regional Oral History Office's longest established and most diverse series of memoirs. This series documents the institutional history of the University, through memoirs with leading professors and administrators. At the same time, by tracing the contributions of graduates, faculty members, officers, and staff to a broad array of economic, social, and political institutions, it provides a record of the impact of the University on the wider community of state and nation.

The oral history approach captures the flavor of incidents, events, and personalities and provides details that formal records cannot reach. For faculty, staff, and alumni, these memoirs serve as reminders of the work of predecessors and foster a sense of responsibility toward those who will join the University in years to come. Thus, they bind together University participants from many eras and specialties, reminding them of interests in common. For those who are interviewed, the memoirs present a chance to express perceptions about the University, its role and lasting influences, and to offer their own legacy of memories to the University itself.

The University History Series over the years has enjoyed financial support from a variety of sources. These include alumni groups and individuals, campus departments, administrative units, and special groups as well as grants and private gifts. For instance, the Women's Faculty Club supported a series on the club and its members in order to preserve insights into the role of women on campus. The Alumni Association supported a number of interviews, including those with Ida Sproul, wife of the President, and athletic coaches Clint Evans and Brutus Hamilton.

Their own academic units, often supplemented with contributions from colleagues, have contributed for memoirs with Dean Ewald T. Grether, Business Administration; Professor Garff Wilson, Public Ceremonies; Deans Morrrough P. O'Brien and John Whinnery, Engineering; and Dean Milton Stern, UC Extension. The Office of the Berkeley Chancellor has supported oral history memoirs with Chancellors Edward W. Strong and Albert H. Bowker.

To illustrate the University/community connection, many memoirs of important University figures have in turn inspired, enriched, or grown out of broader series documenting a variety of significant California issues. For example, the Water Resources Center-sponsored interviews of Professors Percy H. McGaughey, Sidney T. Harding, and Wilfred Langelier have led to an ongoing series of oral histories on California water issues. The California Wine Industry Series originated with an interview of University enologist William V. Cruess and now has grown to a fifty-nine-interview series of California's premier winemakers. California Democratic Committeewoman Elinor Heller was interviewed in a series on California Women Political Leaders, with support from the National Endowment for the Humanities; her oral history was expanded to include an extensive discussion of her years as a Regent of the University through interviews funded by her family's gift to The Bancroft Library.

To further the documentation of the University's impact on state and nation, Berkeley's Class of 1931, as their class gift on the occasion of their fiftieth anniversary, endowed an oral history series titled "The University of California, Source of Community Leaders." The series reflects President Sproul's vision by recording the contributions of the University's alumni, faculty members and administrators. The first oral history focused on President Sproul himself. Interviews with thirty-four key individuals dealt with his career from student years in the early 1900s through his term as the University's eleventh President, from 1930-1958.

Gifts such as these allow the Regional Oral History Office to continue to document the life of the University and its link with its community. Through these oral history interviews, the University keeps its own history alive, along with the flavor of irreplaceable personal memories, experiences, and perceptions. A full list of completed memoirs and those in process in the series is included following the index of this volume.

September 1994  
Regional Oral History Office  
University of California  
Berkeley, California

Harriet Nathan, Series Director  
University History Series

Willa K. Baum, Division Head  
Regional Oral History Office

## INTRODUCTION by Kenneth J. Arrow

As I prepared to write this introduction, I was informed of John Harsanyi's sudden and peaceful passing. I had known of his growing weakness. Just a few weeks earlier, the newly formed Game Theory Society held its first International Congress in Bilbao, Spain, and his absence was regretted by all. In his, the generation that first established game theory as a viable discipline, there were five universally agreed-on outstanding leaders, and unfortunately John alone was absent. But his actual death came as a shock.

John Harsanyi was devoted to matters of the intellect, and it is in these terms that I intend primarily to describe him. His physical appearance and demeanor, tall, grave, courteous, cautious in his speech, yet not to be dissuaded from a point or position he felt strongly about, all fitted a man to whom the intellect and the life of science and rigorous inquiry were the most important things in life. On the subjects he found important, he thought deeply and spoke and wrote only after long reflection.

I had read several of his early papers, written while he lived in Australia, including his two very famous papers in the *Journal of Political Economy* basing utilitarianism on risk-bearing (1953 and 1955). I knew only the papers and assumed the author was some established scholar. I was very surprised therefore when, in 1956, I believe, he walked into my office, informed me that he had just been accepted as a Ph.D. student at Stanford, and asked if I would supervise his research. A little conversation established quickly enough that he was the fully developed scholar I thought he was, and asked him why he was bothering to take a Ph.D.; it was unlikely that he would learn anything at Stanford that he didn't already know. He was clear enough: he needed the Ph.D. to have an academic career, not for an education. He had been in great danger and wanted to take no chances. He also came with the ideas for a truly original Ph.D. dissertation already worked out. I did my best to find a few flaws to justify my role as advisor, but basically all I could do was applaud his novel approach to the study of bargaining. A few years later, I had an unexpected opportunity to arrange an offer by Stanford for a joint appointment for him in Economics and Political Science. But, to my great disappointment, he accepted a competing offer from the Graduate School of Business at the University of California at Berkeley, and there he remained, in great content, for the rest of his life.

John Harsanyi was interested first and foremost in fundamental questions and had little to do with the more applied aspects of economics and game theory. His two early papers referred to above gave a brand-new interpretation of utilitarian ethics, based on what John

Rawls much later called "the original position," that is, social agreements at a constitutional level, made before anyone knew his or her specific role in society. This subject continued to fascinate him, and he made contributions to the theory of morality and its utilitarian foundations throughout his career. His philosophical interests extended to epistemology, where he defended and used vigorously the Bayesian viewpoint in understanding how we learn from experience. He was also concerned at a deep level with questions fundamental for politics, national and international, such as the meaning of power and the role of rational choice theories.

More specifically in game theory, he early developed the theory of bargaining, going well beyond the earlier work of John von Neumann and John Nash, Jr. Perhaps the most famous of all his papers was the two-part paper in which he developed the analysis of games with incomplete information. This opened up an entirely new field of analysis. Though profoundly theoretical, it provided a tool which practical economists, particularly in the fields of industrial organization and banking, have found indispensable. Indeed, this was the first technique which gave rise to widespread use of game theory in economic analysis. His interpretation of mixed strategies as limits of games with disturbed payoffs was immediately recognized as profoundly new and resolved some of the problems which had made the concept of mixed strategies dubious as an interpretation of real-life behavior.

One could go on and on with his achievements in game theory; those which I have not even mentioned would make the reputation of a lesser scholar. But all of his work reflected the intellectual power harnessed to great capacity for identifying important problems. To have known him was to have experienced true intellectual depth.

Kenneth J. Arrow  
Department of Economics  
Stanford University

August 2000  
Stanford, California



## INTERVIEW HISTORY by Marion Ross

I interviewed John Harsanyi for the Regional Oral History Office as part of its ongoing series of oral histories with faculty members, administrators, and distinguished alumni of the University of California at Berkeley. As a Nobel Laureate in economic science and a Berkeley faculty member since 1964, John Harsanyi was a natural candidate for an oral history memoir.

I met with John and Anne Harsanyi for six sessions, lasting from one to two hours between September 7 and September 15, 1999. We met in their comfortable living room, looking out over San Francisco Bay, with the Harsanyis sitting together on a sofa and I in a chair with the microphone between us. Although each time I arrived Professor Harsanyi stood to greet me with his old world charm, it was apparent that he was frail and suffering from a serious heart problem. We are grateful for the help of his loving wife, Anne, without whom this biography could not have been completed. The Regional Oral History Office has recognized her invaluable role in acknowledging her as a joint author of this memoir.

In May 2000, Anne and I went over the typescript together, deleting repetitions, correcting spellings and capitalizations, and generally tidying the manuscript. There were remarkably few typographical errors. However, the substitution of the word "fiend" for "friend" gave us a good deal of merriment. In early July, we looked over the final typescript and submitted it to the oral history office on July 25, 2000. Professor Harsanyi died in August 2000.

I started this project because, as a professor of economics at Mills College, I had long admired John Harsanyi. In addition to recording the development of his intellectual life, I wanted to record one man's experience in a forced labor unit under the Arrow-Cross dictatorship in Hungary in 1944 and later as a non-Marxist in Communist Hungary.

What became salient in these interviews was Professor Harsanyi's high intelligence, his survival in Hungary in the last year of World War II, and his later escape from Communist Hungary. Despite these harrowing experiences, his mind and spirit endured. He met Anne Klauber when he was teaching at the university in Budapest in 1946. She was to become his wife. They immigrated to Australia in 1950. He displayed great good humor as he described his various manual jobs, from all of which he was fired for incompetence, in his first two years in Australia. The University of Sydney did not recognize his Hungarian degree, but by going to night classes he achieved an M.A. in Economics, which led to a position at the University of Queensland in Brisbane.

From there, thanks to a Rockefeller grant, Professor Harsanyi came to Stanford University for his Ph.D., then went back to Australia for three years.

John and Anne Harsanyi returned to the United States in 1961 and came to Berkeley in 1964. Throughout these years, his wife Anne supported him by her absolute confidence in him and his ability. He conceived and developed new ideas that advanced the undertaking of the interaction between and among agents, be they economic or political units, in what is known as game theory. John Harsanyi received the Nobel Prize in 1994 for his contributions to game theory under conditions of incomplete information.

I am grateful to my good friend Ruth Rasch Shen (Mrs. T. Y. Shen), Professor Emerita of Economics at San Francisco State University, for encouraging Professor Harsanyi to be interviewed by me. I also appreciate help given to me by Carol Jarvis, Reference and On-line Services Librarian at Mills College, for her bibliographic assistance. I thank Professor Kenneth Arrow, himself a Nobel Laureate, of Stanford University, for writing the introduction.

Professor Harsanyi's papers are in the Haas School of Business, University of California, Berkeley.

The Regional Oral History Office was established in 1954 to augment through tape-recorded memoirs the Library's materials on the history of California and the West. Copies of all interviews are available for research use in The Bancroft Library and in the UCLA Department of Special Collections. The office is under the direction of Ann Lage, Acting Division Head, and the administrative direction of Charles B. Faulhaber, James D. Hart Director of The Bancroft Library, University of California, Berkeley.

Marion Ross  
Interviewer/Editor

September 2000  
Regional Oral History Office  
The Bancroft Library  
University of California, Berkeley

Regional Oral History Office  
Room 486 The Bancroft Library

University of California  
Berkeley, California 94720

BIOGRAPHICAL INFORMATION

(Please write clearly. Use black ink.)

Your full name JOHN (CHARLES) HARSANYI  
 Date of birth 5.29.1920 Birthplace Budapest, HUNGARY  
 Father's full name CHARLES HARSANYI  
 Occupation Pharmacist Birthplace Hajdudorogh, HUNGARY  
 Mother's full name ALICE (GOMBOS) HARSANYI  
 Occupation Homemaker Birthplace Budapest, HUNGARY  
 Your spouse ANNE (KLAUBER) HARSANYI  
 Occupation Psychologist, Homemaker Birthplace Budapest, HUNGARY  
 Your children TOM (PETER) HARSANYI

Where did you grow up? Budapest, HUNGARY

Present community Berkeley, CALIFORNIA

Education Pharmacy Diploma, Dr. Phil. (both in Hungary)  
M.A. in Economics (Australia) <sup>Sydney</sup> Ph.D. in Econ. & Statistics (Stanford USA)

Occupation(s) Pharmacist, laborer, clerk, university  
 professor (now emeritus)

Areas of expertise Game theory, Mathematical Economics

Other interests or activities Reading, traveling.

Organizations in which you are active -

SIGNATURE John C. Harsanyi

DATE: 4.12.00





## INTERVIEW WITH JOHN HARSANYI AND ANNE KLAUBER HARSANYI

## I GROWING UP IN BUDAPEST, 1920-1938

[Date of Interview: September 7, 1999] ##<sup>1</sup>

School Days at Lutheran Gymnasium

Ross: What are your earliest memories? Not necessarily about the mind, if you could just talk about your early life. You said you had a comfortable living. Did your father have a degree in pharmacy?

Harsanyi: Yes, my father had a diploma in pharmacy, and my parents owned a pharmacy in Budapest which would give them a comfortable living.

I was born in Budapest, Hungary, on May 29, 1920. One of my earliest memories was that of being very naughty. I found some bread dough and smeared it all over an armchair.

And intellectually, my development started when my mother's uncle, Dr. Adolf Roth, explained to me many scientific facts. He himself was an orthopedic surgeon, but he was interested in many things--astronomy, biology, and political problems. He explained many, many of these things between my--I don't know--third year and seventh year. He was very interested in technology and was so excited when Lindbergh went from America to Paris, that he actually had a heart attack at that time.

Ross: He died?

Harsanyi: And died. But, before this time, he explained me many things and made me very interested in science. Then I went to one of the best schools in Budapest, the Lutheran gymnasium; this

---

<sup>1</sup>## This symbol indicates that a tape or tape segment has begun or ended. A guide to the tapes follows the transcript.

means high school. This produced such distinguished people as John Von Neumann and others.

Anne: Eugene Wigner.<sup>2</sup>

Harsanyi: Wigner, and others. I enjoyed this school very much, and when I finished this school, I got the first prize in mathematics in the nationwide competition.

Anne: In the last year of high school.

Harsanyi: In the last year of high school. Then after that, I met my wife and we escaped from Hungary and went to Sydney.

Ross: Yes, but I want a few more details before we move on that far. How did you get into the Lutheran school, because you are not Lutheran?

Harsanyi: No. But it was one of the best schools.

Anne: You just had to pay more.

Harsanyi: Pardon?

Anne: You had to pay more because you are not Lutheran.

Harsanyi: I am of Jewish origin, as you may know.

Anne: You were Catholic.

Harsanyi: But I was baptized as a Catholic.

Ross: How did that happen?

Harsanyi: Well, my parents decided--

Anne: They converted.

Harsanyi: Converted to Catholics.

Anne: Before you were born.

Harsanyi: Before I was born.

---

<sup>2</sup>Eugene Wigner was awarded the Nobel Prize in physics in 1963.

Ross: But how were they married, and under what auspices were they married? Were they married in a Jewish ceremony or Catholic ceremony?

Harsanyi: I have no idea.

Anne: Civil ceremony. I'm sure it was a civil service.

Harsanyi: I don't know.

Ross: Okay. So did they convert to Catholicism for political reasons?

Harsanyi: I suppose, yes.

Ross: So did you go to the Catholic church on Sunday?

Harsanyi: Yes, when I was a small child.

Ross: And then when you went to the Lutheran school, you didn't have to become a Lutheran?

Harsanyi: No.

Ross: And as Anne said, you just paid more?

Anne: Yes. The Jews paid the most. [laughs]

Harsanyi: Yes. In a Lutheran school, the Jews paid the most, then Reformed--the people of the reformed church paid a little less --and then Lutherans paid the least, and so on.

Anne: And Catholic was between Jew and Protestant. [laughter] Other Protestant, Catholic, and Jew.

Ross: Wow. Did you ever hear your parents discuss that this was very unfair, or did they just say, "Well, that's the fee and we will pay it?"

Harsanyi: Oh, they didn't. They paid it. That was common practice then with schools. People of their own denomination paid the least; others paid more.

Ross: But did your parents ever say this is a bad system?

Harsanyi: No.

Ross: They just said, "Okay," basically?

Harsanyi: Yes, they said okay, because that was the general custom. Usually people don't quibble about general customs.

### Parents and Activities

Harsanyi: Moreover, my parents were well-to-do, so it didn't matter whether we paid a little more.

Ross: Did you have any siblings?

Harsanyi: No. I was the only child.

Ross: Did your mother have much education?

Harsanyi: Oh, yes. She was very educated. And she was very interested in music and many other things, but she had asthma, which I didn't inherit from her.

Ross: So did she read to you when you were a little boy at night?

Harsanyi: Well, I suppose so, yes.

Ross: Did she work in the pharmacy?

Harsanyi: No. She worked at home.

Ross: Tell me, at that sort of station in society, did they have friends who were non-Jewish?

Harsanyi: Oh, yes. I assume so.

Ross: What sort of social life did they have? I mean, did they go to cafes? I think of Czechs as always going to cafes in the evening and having a coffee.

Harsanyi: Oh, yes. They did that, too.

Ross: They'd meet their friends there?

Harsanyi: Yes. They met their friends who were either pharmacists or medical doctors, or lawyers.

Ross: Did they discuss the arts or did they discuss politics?

Harsanyi: They discussed, of course, politics very much. And my mother was interested in music and she knew how to *zongorazni*.

Anne: Play the piano.

Harsanyi: Play the piano. She made me listen to operas and such things, which of course I didn't understand very much at that time.

Anne: And doesn't like to this day.

Harsanyi: Yes.

Ross: Did you take music lessons?

Harsanyi: No.

Ross: Mathematicians are usually first rate at music, too.  
[laughter]

Anne: That's right.

Harsanyi: Yes.

Ross: So I just wondered if your mama tried to have you take music lessons. Did you take any lessons after school?

Harsanyi: Well, of course I had to learn languages--English--I knew Hungarian, of course. I learned English, German, and in school, I read Latin and classical Greek, and French.

Ross: So were your English lessons private? Were they in a school?

Harsanyi: No, there was a course I could take after school.

Ross: And so you took English for how many years?

Harsanyi: Not too many years, but then of course, then in Australia, I learned English rather well.

Anne: He had to choose between Greek and English, and he chose Greek in school, so the English was after school.

Ross: Are you glad you took the Greek?

Harsanyi: Yes. I could read the *Odyssey* and the *Iliad* in original Greek.

Ross: That's a great accomplishment. Did you participate in any organized sports in school or after school?

Harsanyi: I was never interested in sports.

Ross: I just wondered if they made you do it.

Harsanyi: I had to do the few sports, yes.

Anne: Physical exercises.

Harsanyi: Yes, physical exercises in school. But I wasn't terribly interested in these things.

Anne: Had to get up a pole, or climb up a pole in the gymnasium.

Harsanyi: Yes, I wasn't very good at that.

Ross: Did you have playmates, or did you come home and do your lessons?

Harsanyi: Oh, I had playmates. I remember one of my playmates was the daughter of a medical doctor, who lived very near to us and we often played together.

Anne: Want to tell the story about marrying her? [laughs] The story that she wondered whether you would marry her when you were six--they were both six?

Ross: Tell me the story.

Harsanyi: I told her my parents had an age difference of ten years between them--and that was pretty customary in Hungary at that time--and so I told her, "You are a very nice girl, but I will marry somebody who hasn't been born yet." [laughter]

Ross: And that was Anne, as the case turned out.

Anne: He was six then and she was seven.

Ross: Oh. [laughs] And did she run home and cry?

Harsanyi: I don't remember that, no.

Anne: We met her and she looked a very self-sufficient woman.

Ross: Oh, but I'd like to know a little bit more about your childhood. Did you see much of your father, or did he work long hours?

Harsanyi: I saw him every day and sometimes he took me to the pharmacy and let me play there. When I was a very small child, I liked to play with corks and such things, and he bought me many things I could play with.

- Anne: But he didn't go to school for the first two years of elementary school. You were tutored at home.
- Harsanyi: Yes.
- Ross: Oh, that's interesting.
- Harsanyi: Yes, I was tutored by a tutor. In elementary school I remember I had a very strict teacher who wanted me to do mental arithmetic very fast, you know, and I didn't enjoy that.  
[laughs]
- Ross: Oh! You must have been very good at it, though.
- Harsanyi: Well, I was reasonably good, but it's very boring to work out in your head how much is ninety-three minus seven and minus seven more. Of course in writing it's very easy, but in your head--
- Ross: Why did your parents have you tutored at home instead of going to school?
- Harsanyi: Well, they thought that I would learn faster. And I did. I could complete two elementary school grades in one year.
- Anne: And they also tried to avoid diseases. You were pretty over-protected as a child.
- Ross: Did you feel that your parents were overly interested in your academic achievement?
- Harsanyi: No, I was myself very interested, and I was very ambitious all my life.
- Ross: Did you know that when you were a little boy? Did you compare yourself to other children and think--
- Harsanyi: Well, we played together, but of course I didn't explain what I knew, but I still learned such things that to other children wouldn't be interesting.
- Ross: Now when you played games, did you play games like cops and robbers?
- Harsanyi: I'm sure. Yes. We did, but it was in high school. There was a long corridor and at the end there were two white lines, and then one little boy ran on one side and the other tried to catch him and such things. High school was from age ten to eighteen.



Ross: Was this Lutheran school both boys and girls, or was it just boys?

Harsanyi: Just boys.

### Family Life

Ross: Was it the custom at that time for there to be birthday parties for children?

Harsanyi: Oh, yes.

Ross: And then did the relations come, or did other little children come?

Harsanyi: Both. There was one kind and the other kind. My mother was a very good cook, and she invited other friends of mine for my birthday. But then there was another kind of--

Anne: It was a family gathering.

Harsanyi: Family gatherings, yes. Most of my mother's and some of my father's side.

Harsanyi: Several times a year.

Ross: And did these relations live mostly in Budapest?

Harsanyi: Most of them--I mean, only those could easily come who lived in Budapest.

Ross: And were they also professionals?

Harsanyi: Many of them owned or rented property and they also managed the property. Some managed it and some rented it, but--

Anne: There weren't too many professionals like your mother's uncle was. He and your father.

Ross: Did your mother ever work before she was married?

Harsanyi: I don't think so.

Anne: It was a different world.



Ross: Yes, well, this is a question that you can answer or not. Was there a maid in the house?

Harsanyi: Oh, yes.

Ross: Yes, it's a different world.

Harsanyi: Yes.

Ross: Was it one maid or five?

Harsanyi: Oh, no, I think first of all there was a lady who was engaged to learn me to speak German.

Anne: A Fraulein.

Harsanyi: A Fraulein. Then there was a maid who helped my mother in cooking. I think that was the only one.

Anne: And then somebody came in to do the sheets, to wash the sheets?

Ross: There was a washer?

Anne: There was a washerwoman who came once a month, or something.

Harsanyi: Yes. And also the same woman usually sewed together things.

Ross: But the maid lived in?

Harsanyi: Some maids did. The Fraulein lived in and the lady who helped my mother in cooking lived in, but others came in only once a month.

Ross: Then tell me, did the Fraulein eat dinner with you?

Harsanyi: Yes.

Ross: But the maid did not?

Harsanyi: I think she also did.

Ross: Okay. And then how old were you when you first had dinner with your parents, or were you in the nursery with the Fraulein?

Harsanyi: I don't remember.

Ross: So at least you had, at least it seems to you now that you mostly had dinner with your parents?

Harsanyi: Yes.

Ross: So it wasn't the English system where they hardly ever saw the parents.

Harsanyi: No, no, no. Probably because we were such a small family.

Anne: It was a very small house. So there weren't distances.

Ross: No, and did your father walk to work?

Harsanyi: Yes, because it was five minutes away.

Anne: It was an outer suburb of Budapest.

Harsanyi: It was really a working class suburb and small bourgeois.

Ross: And when was the first time you were taken to the theater or to the opera?

Harsanyi: I think that only during my high school days.

Ross: Can you remember anything about those outings? You remember going to the theater; can you remember going to any specific theater or any specific opera?

Harsanyi: I don't remember.

Ross: Did your mother take you, or did your mother and father take you?

Harsanyi: Both would take me usually, though sometimes my father wasn't very interested in music. He'd stay at home, but he would buy tickets for my mother and myself.

Ross: So now we may want to come back to those gymnasium years. Do you remember any particular teacher?

Harsanyi: Oh, yes. I first had a very poor mathematics teacher, but he later became a Buddhist and resigned from the school. [laughs]

Ross: We're going to take a short break now, John, and see if we can hear it.

Harsanyi: Yes, please.

Education at the Gymnasium

[Interview 2: September 8, 1999] ##

Anne: At the end of last session, you wanted to say a little more about this substitute mathematics teacher in high school, so maybe that would be a good place to start.

Harsanyi: Yes. Good.

Ross: Let me just start off officially. This is the eighth of September and it's about three-thirty in the afternoon. I'm again in the Harsanyis' house high in the Berkeley hills.

Now, John, I want to backtrack a little bit and talk a little bit about your time at the gymnasium because this is an important time in your life, as it is in most peoples' lives. So if you could just start from there.

Harsanyi: Well, this was a Lutheran gymnasium, and almost all teachers were excellent. They had several publications, such that in other countries, they would have become university professors or at least an assistant professor by that time. However, Hungary had very few places at the university, so they remained high school teachers. But they were very distinguished in their own fields.

Ross: Why was it so hard for them to get university positions?

Harsanyi: Because there were very few university positions. It was a financial reason, I guess.

Anne: And it was also customary.

Harsanyi: Yes, and also that was the old custom that universities had only one professor in each subject and usually you could become the professor if you married the professor's daughter or he died. But of course, in high school, these people were very good.

Ross: Were there Jewish professors?

Harsanyi: No. Most of them were Lutheran, but some might have been other Protestants.

Ross: Tell me more about your teachers.

Harsanyi: Well, the first mathematics teacher I had was not very good, and he later became somewhat mentally unbalanced, and became a Buddhist, and then resigned. Then they had to find quickly a substitute teacher, who happened to be very, very good. This was the year where we learned Euclidean geometry, and he suggested to us to subscribe to the Hungarian mathematical journal for high school students, and this journal once a month appeared and there were these problems to solve in it. This new professor or teacher encouraged us to find solutions, so about half of the class--and we were sixty of us, so maybe thirty submitted regularly such solutions. To encourage this, photographs were published at the end of the year of such things.

And this really resulted in many of us being interested in mathematics. Some became mathematicians, others used this talent in other ways, but it was very interesting most of the time. Another advantage was many of these students were very bright and constant discussions with them. I went to high school at least in the summer by foot, and it wasn't very far from us. When I think teaching ended--then it was I think at two o'clock in the afternoon--then we went together home and we discussed all sorts of problems together and it was a very interesting time.

Ross: These were fellow students?

Harsanyi: Fellow students.

Ross: How many--three, four?

Harsanyi: Well, the whole class was sixty of them.

Ross: But how many would come home with you in the afternoon?

Harsanyi: Well, three, four, or five. Sometimes nobody. This teacher was a very excellent teacher, but he was not confirmed, and another teacher replaced him but was not as good as him. By then many of us had acquired the custom of liking solutions to these mathematical problems.

The other teachers were also very good--Latin, Greek, and biology, and what else?

Anne: Physics?

Harsanyi: Physics. Yes. The director of the school at that time was a great physicist who happened to be Wend--that is, Slovene. He was Slovene, but pro-Hungarian, and then Tito's government forced the Hungarian government to extradite him and I think he was killed.

Anne: Because he wasn't nationalistic.

Ross: Yes, but why was he extradited? Had he committed some crime?

Harsanyi: No, but under Communist regime--

Ross: Oh, you mean this was much later?

Harsanyi: Much later. But of course Tito was there, and he didn't like Croats or Slovenes who were poor Hungarians. You know, there was an old tradition that these people were bilingual, mostly, in another tongue, and Hungarian, but some of them didn't like to belong to Hungary or be associated with Hungary. Others did.

Ross: Do you know whatever became of this wonderful teacher of geometry who was not kept on?

Harsanyi: Unfortunately I don't know. I probably knew it at the time, but I forget. Yes.

Ross: But you and your pals kept on the habit of meeting to discuss math?

Harsanyi: Well, yes.

Anne: There also was philosophy.

Harsanyi: Yes, it was also philosophy and sociology--everything under the sun.

Ross: So was it the same group with whom you discussed these other fields, or did you have a mathematics circle, a philosophy circle?

Harsanyi: Oh, no, it was just a matter of private friendship.

Ross: How many years were you at the gymnasium?

Harsanyi: Eight.

Ross: Eight years.

Harsanyi: I think that was the custom. It was the custom.

Ross: Eight years for the gymnasium. So when you graduated from the gymnasium, you would have been--

Harsanyi: '37. Seventeen years.

Ross: Okay. And so this was 1937.

Harsanyi: Yes.

### Studies in Leather Chemistry in Grenoble

Ross: So then what did you decide?

Anne: He went to France.

Harsanyi: My parents sent me to France, to Grenoble, which had a special chemical faculty which specialized in leather chemistry. You know that leather when it comes from the animal it is subjected to certain chemical manipulations, and as far as I know, the only reputable institution which taught this was in Grenoble. Of course at first I had to learn French.

Ross: I thought you spoke French.

Harsanyi: But very little. And then I started this course on leather chemistry. And if normal conditions had been there, this would have been excellent qualifications for a good job. Very few people became leather chemists with good qualification, but then the war broke out.

Ross: Now wait a minute. So you were there in '37-38?

Harsanyi: Yes, '37.

Ross: Well, actually the war started in '39.

Anne: Anschluss was '38.

Harsanyi: I don't know. Probably in '38 or in '39, I don't remember, my parents sent me a telegram that I should come home.

Anne: Probably '39, because you had trouble getting home.

- Harsanyi: Yes. Yes, and then it was clear that I shouldn't officially study anything else but pharmacy. I managed--
- Ross: Expand on that just a little.
- Harsanyi: Yes.
- Ross: That you couldn't continue the chemistry.
- Harsanyi: No, because my parents called me back.
- Ross: Because the only place was Grenoble.
- Harsanyi: Yes.
- Ross: That was the good place, but you couldn't continue to stay there.
- Harsanyi: Yes. Because my parents called me. I really had no real interest, but I knew that this would make me very good qualification, and I can be happy to do it.
- Ross: You didn't consider the university when you finished the gymnasium?
- Harsanyi: I did consider that, but my parents thought that it would be better for me to learn this leather chemistry.
- Ross: They wanted you to be able to have a good job.
- Harsanyi: Yes, yes. And as I said, this was to be a good job, too, but of course my parents were right because, not very much after that, the Germans occupied most of France and people of Jewish origin had great trouble in escaping from the Nazis. So probably it was better that I came home.
- Ross: How long would the course in chemistry have been?
- Harsanyi: Probably four years, I guess.
- Ross: So this was some sort of institute?
- Harsanyi: Yes. This was sort of a special university, which did these things.
- Anne: And you lived with your French relatives.
- Harsanyi: Yes, in Lyon.



Ross: Oh, I thought you said Grenoble.

Harsanyi: In Grenoble was where the university was, but not very far from that in Lyon I had relatives.

Ross: Ah.

Harsanyi: They helped me with money and of course also friendship, but then I had to go home.



## II WARTIME, 1939-1950

Studies in Pharmacy

Ross: So when you went home, you decided to study pharmacy?

Harsanyi: Pharmacy, yes.

Anne: Which was needed back then.

Harsanyi: Yes.

Ross: How did you come to that decision?

Harsanyi: My parents suggested this was a natural thing to do.

Anne: You had to have the diploma to take over the pharmacy.

Harsanyi: Yes. Otherwise, when my father died, if he died, and I had no pharmacy degree, I'd have to sell the pharmacy, because I can't take it over. He bought it out of the dowry my mother brought to the marriage.

Ross: I see.

Harsanyi: So I had to study pharmacy, and before the Germans came into Hungary I finished it and became a fully qualified pharmacist.

Ross: How long was the course in pharmacy?

Harsanyi: The course itself was only two years, but first for three years we had to be apprentice pharmacists in some pharmacy and learn the practical things. Then there was a short course to learn something about chemistry and other things that you needed, and then after two years, one could qualify to be a pharmacist, and then an additional examination was required to be a fully qualified pharmacist.

Now this would have been finished at that time, but then I wanted to avoid military service in the forced labor division, so that I then tried to become a doctoral student in one branch of pharmacy. I would have probably been most interested in chemistry, but the only professor who was willing to accept me as a doctoral candidate was a botany professor. A very nice person, but I wasn't terribly interested in botany. But that wasn't the main problem.

The main problem was that my job was to prepare microscopic slides, which one could then study how plants developed, and so on. And I had never had a great manual dexterity, so my slides were beautiful green, but that meant that they were too thick. They should have been completely transparent. So I had some trouble with that, but in any case, even though I wasn't very successful, I continued to have military deferment until the Nazis came to Hungary. But before that I became a fully qualified pharmacist.

Ross: And did you work in your father's pharmacy?

Harsanyi: Yes.

Ross: For your apprenticeship?

Harsanyi: No, I helped my father because he needed some help, but the custom was to be apprenticed to another pharmacy, and so I was apprenticed at another pharmacy.

Ross: Do you think you could practice being a pharmacist now?  
[laughter]

Harsanyi: Well, I never was interested. Really this is a retail business and wasn't interesting.

Ross: So now, you were very busy, because I take it that the doctoral program in pharmacy was pretty intense?

Harsanyi: Yes, yes.

Ross: Because well, I think doctoral program are. And why was there no chemistry available for you?

Harsanyi: Because the professor who would have been able to engage me as a doctoral student in chemistry was anti-Semite and the only liberal professor was this botany professor who was very nice.

Ross: Did he tell you so? Did the chemist tell you that he wouldn't take you because you were Jewish?

Harsanyi: I don't remember. Certainly he didn't take me, probably might have told me, but--

Botany Sojourn in Transylvania

Ross: That was customary?

Harsanyi: That was customary at that time. Then there was a strange episode. There was a year in which Hungary was permitted to re-occupy Transylvania. That was under the Mussolini and Hitler regime.

Anne: Hitler gave it to Hungary.

Harsanyi: Hitler and Mussolini.

Ross: I'm a little hazy about that. Tell me what you know and we can look it up.

Anne: In '40 or so.

Harsanyi: Well, there was a committee consisting of, I don't know, a German Nazi, maybe Ribbentrop and the Count Ciano, who was the Italian foreign minister. They decided objectively that Hungary can re-occupy Transylvania, which had a huge Hungarian minority. So in any case, I was told by people, older people who often visited Transylvania, which is a very spectacular mountainous region, that if conditions permit, I should visit Transylvania. I could do this relatively freely because I got a small stipend to visit Transylvania and look at the botanical structure and so on.

But I wasn't terribly interested in that, and so it happened that my Budapest botany professor sent his regards to a botany professor in Kolozsvar [today Cluj in Romania], a Hungarian city, Kolozsvar, capital of Transylvania, and I was supposed to give him his regards. But I wasn't very interested in all this, so I did it the very last day and he was annoyed because I didn't recognize him. He worked in the garden, and I thought he was a gardener. [laughs] So he said, well, you never came to my lectures, and then you'd have known. [laughter] But of course, nothing happened.

Ross: Did you collect specimens?

Harsanyi: No, I think the idea was to recognize which flower belongs to what plant and such things. It wasn't very interesting for me.

Ross: But you had some nice hikes?

Harsanyi: Yes, yes. The hikes were very interesting. I mean, and the views were very nice. The botany wasn't that interesting. But the same botany professor in Budapest showed us that flowers and plants, and then a little cat came in and everybody looked at the cat instead of the flowers. He said, "Well, you know, I know that botany's less interesting than zoology." [laughter]

Ross: So how long did you spend in Transylvania?

Harsanyi: Oh, only a week or two--probably two weeks. And during that period I should have attended lectures of this professor and I didn't, so it was a source of inconvenience to find out, but it was still a very nice holiday for me.

Ross: So when you went back to Budapest?

Harsanyi: Then I continued--

#### German Entry into Hungary, 1944; Labor Force

Anne: But you left soon after that.

Harsanyi: After that the Germans came.

Ross: When did they come exactly?

Harsanyi: In '44. March of '44.

Anne: And then you were called up.

Harsanyi: I was called only in May.

Anne: For forced labor.

Harsanyi: But I was very lucky because my company never left Hungary, so I never had to go to the front. And I was usually so closely located to my parents that I could go home during the weekend.

Ross: What did you do in the labor force?

- Harsanyi: It was very simple. There were cellars in one of the little villages near Budapest where they used to store wine, but now they used it to store ammunition for the Germans which were in blue containers. Blue containers, and we were supposed to unload them from trucks and then put them in the cellar, and then on another day, to bring them back again and give them to the German army.
- Anne: All the time you made jam and preserves.
- Harsanyi: What?
- Anne: You had to make jam and preserves.
- Harsanyi: Oh, that was another time, yes.
- Ross: So were you living in barracks?
- Harsanyi: Yes, but basically I was very lucky, of course. I never had to go to the front.
- Anne: Tell about the yellow armband and white armband.
- Harsanyi: Oh, yes. At one time, the Hungarian government decided that they would distinguish between people of Jewish origin who are Jews and those who became Christian or their parents became Christian. Those who were Jews had a yellow armband here, plus yellow star, and those who were Christian, had a white armband.
- Anne: Plus the yellow star.
- Harsanyi: Yellow star wasn't actually worn with white armband by the Christian Jews.
- Anne: Civilians were different.
- Harsanyi: Yes, civilians had to wear the yellow star. In any case, what I want to say is, yes, we always were supposed to wear the white armband when we were loading, unloading, and reloading these batteries or ammunition. The commander was a sergeant major in the German army. He was a younger, very nice, humanitarian person, and he illegally, under the Hungarian law, permitted us to visit our family who were close enough on the weekends. And I never had any trouble in this, but some of my colleagues were arrested by the Hungarian gendarmes. And then he immediately went there and got their release, saying that he needed them for the German army, and he made a big scandal that the Hungarian gendarmes sabotaged the German army and so they

were immediately released. That was just a simple personal kindness. But I never was arrested.

Then it became customary to get some protection from some foreign country. Some people got protection from the Swedes, others from the Vatican. All Catholic Jews had protection from the Vatican.

Anne: Swiss?

Harsanyi: Swiss, yes. And my troop had protection from the Vatican. This meant that we had better conditions, but then the Nazis forced the Hungarians--first of all, they asked the regent of Hungary, Mr. Horthy, to resign<sup>1</sup> and then, completely, the Nazi government came to power.

Anne: The Arrow-Cross--

Harsanyi: Yes, the Arrow-Cross, which was really the Hungarian Nazi party.

Ross: When was this, exactly?

Harsanyi: October 10, 1944.

#### Escape from Deportation to Austria

Harsanyi: '44, yes. And then my unit was under Vatican protection, and this lasted until the Russians came very close to Budapest and then the Nazis decided to deport these people to Austria to one of the concentration camps. My uncle was also deported and most of my comrades who were deported died, because basically they didn't have anything to eat, virtually. But I managed to escape from the railway station.

I'm a slow thinker, so I didn't escape immediately, but after a few hours, I thought very hard, it's better to escape. At first I worried--my parents had bought me warm clothing for the winter time that was quite expensive, and I thought I shouldn't leave these things behind and so on. Then I realized that I could not care about these things, but escape. And I

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<sup>1</sup>This came after it became known he wished to make a separate peace with the Russians.



could, but it took me several hours of thinking. Then I simply escaped and I took off my white armband, and--

Anne: You had an overcoat.

Harsanyi: Yes, and that I brought on me.

Ross: You were not in any sort of uniform?

Harsanyi: No, no.

Ross: You were just in whatever clothes you had for yourself?

Harsanyi: Yes, yes.

Ross: Because you refer to this very briefly in the *Cal Monthly*--I'd like to have just the details, if I could. So this is October? It's already getting cold.

Harsanyi: Yes, yes. So we had to wear our own clothing and if you didn't have good clothing, it was very cold, of course.

Ross: So you're standing on the railroad station? And how many units were there? Because your group was how big?

Harsanyi: The group might have been a hundred. Maybe even less--sixty.

Ross: And were there other groups there as well? In other words, was it very crowded?

Harsanyi: I don't think so. It was crowded for the following reason: civilian people, civilian people who were employees of various firms, came out to collect merchandise which arrived by the train. Of course these people were not Jewish and they had to come in and go out. And nobody stopped them, so they might have just as well thought that I was one of these people, and they let me out without any problem.

Anne: Took off his rucksack and walked out.

Harsanyi: Yes, this valuable rucksack I left there. It had all my clothing including my winter clothing but not my overcoat.<sup>2</sup> And now, it wouldn't have made any sense to do this, but I knew that a Jesuit priest who was my friend would try to accommodate

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<sup>2</sup>The good overcoat made it possible for him to mingle unnoticed with the civilians collecting merchandise.



me in the Jesuit monastery which was in the center of the city. And so I was accommodated.

And I told several friends of mine that this was a nice person. They should come if they could, too. But they didn't escape as I did in Budapest. Some of them came back from fifty miles or 200 miles away, and luckily were not arrested. They also came to this Jesuit monastery.

And of course at first we had to buy food from nearby groceries, but then this became too dangerous and the Jesuits started giving us food--mainly bone soup and--[asks Anne in Hungarian]

Anne: Bean soup.

Harsanyi: Bean soup and such things, which were at least enough to survive.

Ross: How did you know the Jesuit and how did you think he would protect you?

Harsanyi: I knew him, you know, at that time I was a religious Catholic and he was one of my priestly friends.

Ross: But you hadn't been at school with him?

Harsanyi: No, no. No, actually I was in the Lutheran school, and then when I won the mathematical competition, this Jesuit father asked me, "Was this a very difficult problem?" I told him, "No, it was not that difficult." And he said, "Oh, yes." Basically he wanted to reduce the importance of my school. [laughs]

Anne: And that is the time that you learned never to be too modest. [laughter]

Harsanyi: Yes, but in any case, he really--

Ross: You trusted him.

Harsanyi: Yes, I trusted him. And he let me in, and as I said, some of my, maybe six or seven, friends who came back halfway from Austria a few days later, he also accepted them.

Ross: Well, that was really Christian duty.

Harsanyi: Yes, it was.

- Ross: They were exposing themselves.
- Harsanyi: Oh, sure. Many Catholic priests were not as brave to do this, but he was. You know, Jesuits are usually; they're brave in these situations.
- Ross: So you were in the center of Budapest?
- Harsanyi: Yes, in the cellar. And sometimes a Nazi police came in to supervise what's going on, and then we were removed from the cellar into the attic. They probably knew that we were there, but I think that the Jesuits bribed them and we were never found.
- Ross: And how long were you there, then?
- Harsanyi: From November 15--two months. After two months.

Parents Moved to Ghetto, 1944-1945

- Anne: In the meantime, your parents had to go to the ghetto.
- Harsanyi: Yes.
- Anne: Repeat it, John.
- Harsanyi: Yes. My parents had a little cottage in the outskirts of Budapest, and of course originally my parents and I and maybe one or two maids lived there, but then the Nazis first made this a Jewish home and many other Jewish people moved in. So it was overcrowded, but they were relatively safe there. Then in November, I guess, they established a ghetto in Budapest--also fairly central area--and my parents and all the inhabitants of our villa had to go there.
- Anne: And in the ghetto there were young people and old people because the other ones were already taken.
- Harsanyi: Yes.
- Ross: Your parents were now in their fifties, or maybe early sixties?
- Harsanyi: Well, my father was born in '81, and this was in '44.
- Ross: Oh.

Harsanyi: So--

Anne: Sixties.

Harsanyi: Yes, and my mother was ten years younger. Both of them survived, but were very weak when I met them.

Anne: You went to look for them after the Russians came.

Harsanyi: Yes, the Russians came into the monastery on January 17, '45, so I went--

Ross: So the Russians just said, "Go?"

Harsanyi: Well, they said, "You go wherever you want," at that time. And they of course stole a lot of things and many women were abused and so on, but you could walk relatively safely.

Anne: Except they collected people to send to Russia--young men.

Harsanyi: Yes, this was later that they--

Anne: Arrested young men to go to Russia.

Harsanyi: Yes, this business of war, regardless of whether or not you said Jew or whatever. But I escaped this and my parents, too. My parents were too old, anyhow, and unfortunately, they were very weak. After, they could have money and buy food so they again became stronger, but unfortunately my mother died a few months later.

Anne: Asthma, that was it?

Harsanyi: No, she got pneumonia. There was already penicillin available, but the doctor who treated her didn't recognize it so she died. But my father survived.

Anne: And then he reopened the pharmacy.

Harsanyi: He reopened the pharmacy and--

Ross: It was still there?

Harsanyi: The pharmacy. The place had broken windows and so on, but he then bought medications and sold them so he survived. But that was a very great loss for me. I loved my mother even more than my father, and she was a very cultured person. But then I helped my father in the pharmacy and later I enrolled at the university to study what I really wanted to study--mathematics.

But then I changed my mind--mainly sociology, psych, and philosophy.

Ross: Do you know why you shifted from mathematics to sociology and philosophy?

Harsanyi: My interest changed.

Anne: That was '46 at that time.

Harsanyi: '46.

Study of Sociology at the University and Meeting Anne ##

Ross: Okay, John, I think we can continue.

Harsanyi: Very good. So yes, I enrolled at the university to study philosophy, but primarily sociology and psychology. So I enrolled at the university and I didn't have to do four years. They gave me credit for all the university pharmaceutical studies which I did, so one year was enough to get the doctor of philosophy. My dissertation was titled, "The Logical Structure of Philosophical Errors." [laughter] Also in Australia later they gave me partial credit for my university courses. Then I took evening courses at the university while I worked, and again I would have needed four years to finish.

Anne: The B.A.

Harsanyi: The B.A. But in Sydney they actually took my Hungarian--they didn't respect my Hungarian diploma, but they gave me credit for all the university years which I had, and the result was that the four years that would have been required in Sydney I could achieve not only a bachelor's degree, but a master's degree in two years, which in Australia meant much more. So this made it easier for me to get a university job later. So in any case I was lucky.

Ross: So let's drop back now.

Harsanyi: Yes.

Ross: To your leaving the university in Hungary. You were in Budapest.

Harsanyi: In Budapest, yes.

Ross: Would you like to say a little bit about how sociology is in European universities?

Harsanyi: At that time, well, it was basically studying German sociologists: Max Weber and there was another sociologist called [Erich] Rothacker. I read a lot of German--not easy for me to read--and studied these people.

The head of this university institute in sociology was a former newspaper man who was very bright, but usually didn't read the classics himself. But he established this institute and he was very smart, he got from western sources books and financial supplies, so this became a quite good institute. I acquired many friends--near friends who are still good friends of mine--and I met my lady. [laughter]

Ross: Yes, tell us about that.

Harsanyi: Well, this was in a sense an interdisciplinary institute, so there were people studying history and philosophy--less mathematics, but sociology--and Anne studied psychology there. I was soon appointed university assistant.

Ross: Is that like a teaching assistant, or did you have responsibility for a class, yourself?

Harsanyi: Halfway in between.

Anne: Some responsibility.

Harsanyi: Some responsibility.

#### Unpopular Position as a Non-Marxist

Anne: They didn't like him to teach sociology because he wasn't a Marxist.

Harsanyi: Yes, because I made very clear my views about Marxism.

Ross: Well, now, was the official line that sociology was to be taught by Marxists? Explain a little bit.

Harsanyi: The official line at that time was that anybody who the professor trusted could teach anything. But then later, since

I made bad jokes at the expense of Marx, they knew that I wasn't a Marxist and so my professor wanted me to teach relatively neutral subjects.

Anne: This was in '47?

Harsanyi: '47. He suggested that I should explain to the students I taught views about democracy and political systems and so on, which are in a book called *Politeia* by Aristotle. We offered this in a Hungarian translation and then I gave a lecture course about this.

Anne was one of my students. She was always late and I told her, "Miss, don't you know that we start the course at nine o'clock?" And then she was of course angry at me, but we then became good friends.

Ross: Was it socially acceptable for a teacher to date a student?

Harsanyi: I think there was nothing against it--not like in this country. I think many professors married one of their students--even here.

Ross: You didn't have a wife to divorce, though, did you?

Harsanyi: No, no. [laughs] So--

Ross: Well, how soon did you marry?

Harsanyi: Officially we could marry only in Australia because Anne's immigration permit was under her maiden name. Given the stupid rules about this, she would have to get a new permit because she was a new person. She was not called anymore Klauber, which was her maiden last name, but Harsanyi, so that's why it was impossible. We married a few days after arriving in Sydney.

Ross: Okay, so now you're meeting Anne in the spring of '48?

Anne: No, in fall of '46.

Ross: In the fall of '46? That soon!

Anne: Yes.

Ross: But were you teaching? I thought you were teaching--

Anne: In '47-'48. He attended some classes in philosophy with me.



Ross: So now, continue about that time period--

Anne: And then they wanted us to separate. Right?

Harsanyi: Yes, they said they thought that Anne is young and suggestible. They knew about me, that I was anti-Marxist, so they said okay, but you should break up with me because I'm a dangerous person. Of course she didn't break up with me, but she promised that she would. The trouble was that many times we'd walk together and--

Anne: Go on hikes.

Harsanyi: Go on hikes together and some of her student comrades met us and--

Anne: By accident--

Harsanyi: By accident and caused some trouble for Anne.

Ross: Who did they tell?

Harsanyi: They told--

Anne: Various Communists.

Harsanyi: Whoever the Communist--I don't know what the title--commissary, who would watch the students, you know, if they showed Soviet fears. They looked at your face, whether you were listening and whether you believe all the stupid things, you know--some of the things like a mother loses her only son and then says, "Oh, I'm glad. He died for the fatherland and for the Communist regime," and so on. And some people believed this. Others don't believe. But that was all right, whatever you believe, only it shouldn't show on your face, that either you don't listen or you ask questions: how is this possible, or something like this. This was a terrible sin.

Another custom was to send a fellow student (Marxist) to your home to see if you should move out. They said many of the students came from relatively well-do-do bourgeois families. They said, "Well, your parents will spoil you. You should move out from them. Move into a Communist dormitory." It was unbelievable.

And you know when two people--that was later, right?--two people walked on the street and then two policeman--or gendarmes--separated them and asked each of them what they were



talking about. And if they said different things, it was reason to see that you must be an "anti-Marxist" conspirator.

Anne: So the first thing you agreed with the other one, what do you say if this happens--what you will talk about.

Harsanyi: And if we visited a friend, you rang the door and your friend came out and you asked, "Who is that? Can I talk freely?" And if he said, "Oh, yes, it is our good friends," then you talked freely, but otherwise you would simulate that you were Communist, or whatever. It was a terrible time.

### Escape from Communist Hungary to Austria

Harsanyi: But so Anne of course was the first to suggest to me that in Communist Hungary we have no future and we should escape. And so we did.

Ross: How did you go about preparing to do this?

Harsanyi: I moved out from my parents, then I took a temporary leave for a few days, and then I found somebody who--

Anne: My father.

Harsanyi: Yes, your father found somebody who knew about the area between Hungary and Austria, and he, for good money, took people from the Hungarian border town to the Austrian border town--at night, of course. Unfortunately in our days, this man who was born in this area has somewhat forgotten the geography and instead of one night, it took three nights for us to get to Austria.<sup>3</sup>

Ross: Did you go together?

Harsanyi: Yes.

Anne: And my parents.

Harsanyi: And her parents. Her parents were in their fifties. But my father stayed behind; he couldn't have adjusted to the new

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<sup>3</sup>On that trip the guide had changed his route for fear of capture. In fact, he was caught on his next trip and was sentenced to four years in prison.

conditions. But in any case, then we managed to get out. And then--

Ross: So you did not have an exit visa? I thought it was still in the days of exit visas?

Harsanyi: Oh, no. No, no, they wouldn't give you an exit visa.

Anne: Deportings, only.

Harsanyi: And escaping from Hungary illegally was worth at least four years in prison. They might even shoot you if you tried to escape and so on, but we luckily managed. And surprisingly Anne's parents also survived very well.

We arrived by an Italian ship to Australia. I think it took about a month to get there.

Anne: But first we had to wait seven months for our permit.

Harsanyi: Seven months for the permit.

Ross: Permit to Australia?

Anne: Yes, we couldn't come to this country because of the Hungarian quota. There was a Hungarian quota.

Ross: So what did you do? You spent the time in Austria?

Harsanyi: Yes, mainly in Salzburg, which is very nice--Salzburg. It's a nice city to wait. Yes.

Anne: It was very beautiful.

Ross: And did you have to work?

Anne: I got a job at an international refugee organization.

Harsanyi: I didn't get any job, but there was a good American library there, and I read everything.

Ross: That's very interesting. Did you read Von Neumann and Morgenstern's book? The book came out in 1944.<sup>4</sup>

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<sup>4</sup>John Von Neumann and Oskar Morgenstern, *Theory of Games and Economic Behavior* (Princeton, 1944).

Harsanyi: No, no. It wasn't available. No, I read it much later, in Brisbane in 1954.

Ross: So you didn't know about it in Austria?

Harsanyi: Oh, I think I read about it, at least, but only in Australia could I get access to it.

Ross: Okay, so you read it in English?

Harsanyi: In English. But, I didn't understand most of it at first. It was too difficult at the time for me. But in Salzburg I read other things, and my English reading improved, but my English pronunciation, not, because I only read the written text. It took me quite a few months in Australia that I could learn to speak English.

#### Arrival in Australia and Marriage

Ross: Yes, and so when you went to Australia, you went on an Italian ship, and you'd gotten an Australian work permit?

Anne: Yes. Landing permit, initially.

Harsanyi: Yes. Landing permit immediately and then a work permit. My work permit of course meant I could find any work I could get, but at first I got only factory jobs for two years. And Anne got a sewing job and later typing.

Anne: Don't forget about our marriage.

Harsanyi: Yes. Finally we arrived in Australia.

Anne: The thirtieth of December, 1950.

Harsanyi: The thirtieth of December.

Ross: And was the ship full of all sorts of immigrants as well?

Harsanyi: Immigrants, yes.

Anne: Males and females separated.

Harsanyi: Separated. And accommodations were according to alphabet, so I was sleeping with other people whose last names started with H. [laughs]

Ross: What were the nationalities of these immigrants? Because it was an Italian ship, were they mostly Italians?

Harsanyi: No, no. There were Polish, Hungarians--

Anne: Mainly.

Ross: Did Anne's parents go with you?

Harsanyi: Yes.

Ross: And did you know anybody else? Did any of your Hungarian friends travel with you?

Harsanyi: No, no. Well, surprisingly, many of the Hungarians--our friends--didn't come, but--

Anne: They went to Canada.

Harsanyi: They went to Canada and other places, eventually. Canada was happy to get immigrants, so was Australia, but in the United States there was a quota system that meant that when we were about seventy years old, we would be able to come here.  
[laughter]

Ross: I might be seeing you coming through the Golden Gate right now.  
[laughs]

Harsanyi: Right. [laughs]

Anne: Yes. And then our marriage.

Harsanyi: And then we married.

Anne: Well, January 1 was a holiday.

Harsanyi: Yes. January 1 was a holiday. January 2 was a working day, so we went to the registrar's office, and they said, "Look, we are busy now. Come back in twenty minutes." [laughter] We came back and--

Anne: Got married.

Harsanyi: --got married. And we had to declare under perjury that we hadn't been married before, we are not close relatives, and not cousins. We had to declare all these things. But the most--in many cases we didn't understand what we were declaring because of our English. [laughter]

- Ross: Was anybody there besides Anne's parents?
- Anne: Friends who went there before the war to Sydney.
- Harsanyi: They helped us to acquire the immigration permit--the landing permit.
- Anne: And then he employed my father.
- Harsanyi: Yes. They employed Anne's father. And they gave us also financial help in the beginning.
- Anne: We arrived with ten pounds each in our pocket and a rucksack, also.
- Ross: Well, you slept in different quarters, how did you share the rucksack? [laughter]
- Anne: Each of us had one.
- Ross: Okay.
- Harsanyi: But it took a month to get to Australia.
- Ross: Where did you get the money for the passage? Had you sent it out of Hungary secretly?
- Anne: No, no, we worked, but we were given the tickets for passage from a refugee organization in Austria.
- Ross: You know, I think this might be a pretty good time to stop. It's been just about an hour and twenty minutes.
- Harsanyi: Very good.
- Ross: And we've got to another point. You are married and have arrived in a new continent. So this might be a good place to stop. Then you can be thinking about whether you want to add anything to today's session before I come tomorrow. Think about what you want to emphasize. Meanwhile, I'm going to read still another article about what John wrote about, so I can ask you a little bit about the game theory contributions.
- Harsanyi: Very good, very good.

More on Escape from Hungary, 1950

[Interview 3, September 10, 1999] ##

Ross: Okay, let me just mark where we are. Well, this has been fascinating to me. Today is the tenth of September and we are now on our third interview.

I wanted to go back to something you said the other day, John, and there were a couple of things that you were going to tell me about your preparations for leaving Hungary in 1950.

Harsanyi: The problem was that at that time it was impossible to get legal visas, permissions to leave Hungary, so we had to leave Hungary illegally. Four of us: Anne, myself, and Anne's father and mother--they were already in their fifties, but they were very brave--and we left very well. There was a minor problem that my father-in-law had a friend who was from the border area and supposedly knew his way very well, but he was living in Budapest for a long time and over the years he forgot a little bit of the geography, so instead of taking us over to Austria in one night, it took three nights. Luckily nothing happened where we were--there were mines, supposedly, and some people stepped on the mines and died and such things, but we were very lucky. So Anne's father knew this gentleman who took us over the border, and as I said, it took three nights, but we arrived.

When we arrived, we arrived at the Russian occupied part of Austria and we had to go through the--

Anne: We had to go through barbed wire. Two rows.

Harsanyi: Yes, so our clothes were--

Anne: Double-rolled barbed wire.

Harsanyi: Yes, barbed wire, and so of course our clothes were torn by this and it was very obvious to anybody who would see us that we must be refugees. But when we arrived on the Austrian side, there was an Austrian peasant who was a friend of the person who took us over, and he gave us something to eat and let us wash and so on.

And then he suggested that the best way to get to Vienna was by bus, because the trains were better checked. So we arrived in Austria in Vienna--well, first of all, we had to go through the Russian-controlled part of Austria. Vienna itself



was divided into four zones, but we first arrived in the Russian zone. When we got off the bus a gentleman told us, "Look, if you go over to the other side of the street, you arrive in the American zone and you will be relatively safe."

Ross: Did you think the Russians might take you back to Hungary?

Harsanyi: Oh, yes! Very much so! And so we were in Vienna and people told us that there was a so-called Rothschild hospital, which in peaceful times was a hospital; now it became a refugee center. And we were fifty people?

Anne: Sixty.

Harsanyi: Sixty people in one big room, and Anne's mother jokefully told us, "If you need your shoes repaired, do it here because you would be never in a position to be in the same room with a shoe repairman." [laughs] There we got some food and we--

Anne: We stayed there for two months.

Harsanyi: Two months, yes. But then the Korean War broke out and Anne's father was afraid that the situation would become even more dangerous. We finally managed to get to Salzburg, which was a very nice city, to spend a few weeks there. We rented part of an apartment from a local person and he explained to us how great the thing was that Austria became German because there used to be unemployment, now there's full employment, and so on, and many things--refrigerators and cars, washing machines, these things--became much cheaper than they used to be, so it was a great day when Nazis came. He personally wasn't a Nazi, but enjoyed the prosperity. And we rented part of his apartment for the two months.

Anne: That was five months in Salzburg. Two months was in Vienna.

Ross: Five months in Salzburg!

Anne: Waiting for the Australian landing permit.

Ross: That's quite a long time. So how did you spend your time? Walking?

Anne: John was reading mostly.

Harsanyi: I was reading a lot. My English wasn't very good, but it was well enough to read English, probably mispronounced. Anne had a temporary position with the refugee organization. And apart



from having to wait, it was a wonderful city and we liked it there.

Anne: Yes. My mother's uncle sent us some money from New Mexico.

Harsanyi: And we got some jewels from--

Anne: Most of the jewels we had to pay to the guide, so were sold.

Harsanyi: But some of them--

Anne: --came later.

Ross: Now, let's go back a minute and tell me about selling the house.

Harsanyi: Oh, yes.

Ross: But you talked about it before, so let's go back and talk about that.

Anne: In preparation for leaving.

Harsanyi: Yes. Before leaving, we had a little villa about the same size as this house in the outskirts of Budapest. This was originally owned by my father and mother, but my mother died. I inherited her part, so it was jointly owned by my father and myself. And this would have been taken away after we left illegally, so to avoid this, we sold the house and used the money to buy an apartment for my father.

Ross: Just in his name?

Harsanyi: In just his name.

Anne: Actually he remarried; it was in the name of the two of them.

Harsanyi: Yes.

Anne: Because when your father died, she inherited it. And then we had to send telegrams.

Harsanyi: Yes, telegrams from Vienna to my father and friends, that, "We are sorry to move without telling you," and so on, so that it looked like they were innocent in this business.

Ross: And did it work?

Harsanyi: Oh, it worked.

- Anne: Yes, yes, they kept his father also to work in the pharmacy when it was nationalized.
- Ross: Oh, the pharmacy was nationalized and your father continued to be employed?
- Harsanyi: Employed, yes.
- Ross: Did he see any compensation when they nationalized the pharmacy?
- Harsanyi: No, no. Even afterwards. We did get, you know, this compensation.
- Anne: About ten years ago.
- Harsanyi: About ten years ago this was worth maybe \$200,000 and I think we got \$1,000 compensation or something like that, maybe \$500. In any case, my father would have been too old to leave and he didn't know foreign languages and so on and he obviously wouldn't have been employed anywhere, so it was better for him to stay. One problem was for him, that he often had to serve at night. The rule was that if somebody rang the bell, then he had to prepare a recipe--<sup>5</sup>
- Ross: How much longer did he live?
- Harsanyi: He died I think in '74.
- Anne: No, it wasn't '74. Earlier, John, earlier. We went back to Hungary in '74. In about '60, '65. And you know, they left him alone working in his pharmacy and once he showed a photo of John to his colleagues, saying, "This is my son--very good-looking, and he's in the West," and then they let him go--then they fired him. [laughs]
- Harsanyi: Yes.

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<sup>5</sup>Recipe is the same word in Hungarian as prescription.



## III AUSTRALIA, 1950-1961

Switch from Sociology to Economics

- Anne: Now, last time we talked, John was already in Sydney.
- Ross: Yes, so is there anything else you want to tell me about leaving or the journey to Sydney?
- Harsanyi: Well, yes, of course we couldn't afford it, but the international refugee organization bought all the four of us tickets in an Italian ship.
- Anne: Immigration ship. It was to immigrate.
- Harsanyi: And people were put according to alphabetic order.
- Anne: Male and female separated.
- Harsanyi: Yes, so my name starts with H and I got to know many refugees names who start with H [laughter] and some of these became our friends in Sydney.
- Ross: You said that Anne's parents had some friends who had gone out to Australia before the war.
- Harsanyi: Yes.
- Ross: And they helped you get settled?
- Harsanyi: Yes, yes.
- Ross: And then how did you get a work permit?
- Harsanyi: Yes, immediately, the immigration permit involved this.

Anne: The first thing he did was go to the university and he should tell about it.

Harsanyi: I went to the university. At that time, of course I was a pharmacist, not--

Anne: And a sociologist.

Harsanyi: Yes, and my interests were in sociology. I was actually a university assistant working in the Institute of Sociology in Budapest. So when we left, I thought I would continue with sociology. I saw the professor in sociology but it turned out that he was a sociologist, but his main interest was in aboriginal languages and that wasn't really what I wanted to study, [laughs] so I then decided to go over to economic side.

Already in Salzburg I read some papers in economics and I found it more interesting than sociology.

Ross: That's interesting. What did you read in Salzburg that impressed you that economics was worth doing?

Harsanyi: Well, I read all the journals and books from the U.S. library.

Ross: So you don't quite remember it, but you did get interested in economics before you left Austria?

Harsanyi: Yes.

Ross: You presented yourself in Sydney to the sociologist and switched over to econ there.

Harsanyi: Yes. And of course since during the day I had to work in a factory--in various factories--

### Factory Jobs and Unemployment

Ross: Did you have any trouble getting a job?

Harsanyi: Not in a factory, only I didn't last very long because my work wasn't very good at these things. Then eventually I got a job as a statistical clerk.

Anne: Eventually. Two and a half years later.

Ross: Oh!

Harsanyi: But this lasted only for several weeks because the government had restructured.

Anne: In '52.

Harsanyi: In '52 there was general unemployment and I was dismissed from that job, also.

Ross: So what sort of factories did you work in?<sup>1</sup>

Harsanyi: First I hoped I could get employment as a pharmacist in a pharmaceutical factory, but they told me that the only thing they could use to employ me was as an unskilled worker, so that was I was shoveling powders. Not powder, but medical plants into the container and I accepted from them medical things.

Anne: But it was shoveling.

Harsanyi: Some shoveling, yes. If you don't like something, as sometimes happens in the military--the major asks you, "Do you know how to play piano?" and if you say yes, then he says, "Well, very well, you can carry the new piano to the colonel upstairs." [laughter] Well, in any case--

Anne: And you had a memorable job for one day.

Harsanyi: Yes, that was a very simple job. It was to cut shoulder pads with an electric knife. That was very easy to do. There was no need to make the shoulder pads very regular or anything. The only requirement was that I shouldn't cut the electric wire, and I managed to cut the wire several times so that then my boss not only dismissed me, but when a Hungarian friend of mine applied he said, "No longer any Hungarians." [laughter]

Anne: And this friend asked, "Did you steal? Why doesn't he take Hungarians? Did you steal?" [laughs]

Ross: Well, he probably ruined a market for Hungarians.

Harsanyi: Yes.

Anne: And then you were in the refrigerator factory.

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<sup>1</sup>Anne tells the story that John applied for a civil service position. He failed the examination because it used the symbol + to perform division. In Hungary there is no such symbol. Division is marked by : only. Thus, he didn't understand what to do.

Harsanyi: Yes, I had to use *hogy mondják* (how do you say?).

Anne: Strings to tie a motor.

Harsanyi: Strings, motors. And that of course uses your hands. But again, I wasn't very successful in that.

Anne: Then you made small plastic toys.

Harsanyi: Yes.

Anne: And then you were a stock clerk somewhere in a shop. And then you got this statistical clerk job.

Harsanyi: Yes.

Anne: For nine months you were unemployed.

Harsanyi: Then I was unemployed. In the morning I applied for various jobs. There you have to go personally to apply. And I usually wasn't successful--actually I never was successful. Then in the afternoon I wrote my M.A. dissertation. But there was only one table in this little apartment and there were beds, so the table was used for eating and I used a bed for writing.

Anne: The books sat on the chair. You read at the table.

#### Dissertation for Master's Degree

Ross: What was the dissertation? What was the topic of the dissertation? What was the title?

Harsanyi: *Research Policy of Business Firm.*

Ross: [laughs] You'd only seen a firm from--

Harsanyi: Of course, that's correct. That's correct.

Ross: It was theoretical, because then, your knowledge of the firm was not much, really. [laughter]

Harsanyi: No, and this dissertation was accepted and I wrote it actually for an M.A. degree. Normally you needed four years to get a B.A. degree, but since these stupid rules of universities, my medical and other universities gave this credit, too, so instead of getting a B.A. in four years, I worked an M.A. in



two years. That was a great advantage because then I later applied for jobs. I had a master's degree, the other students only a bachelor's degree, and so I got all this preference.

Teaching at the University of Queensland, Brisbane

Anne: This was just once--your first job.

Harsanyi: First job. And I got this first job with the University of Queensland. At that time there was only one university in Queensland, in Brisbane. I was an external studies lecturer, so I had to write lecture notes for students--

Anne: For the correspondence course.

Harsanyi: Correspondence course.

Ross: Ah.

Harsanyi: And the students then came to Brisbane at the end of the year and had to do examinations, but they didn't have to live in Brisbane if financially it would have been difficult for them. And it so happened that I had very gifted colleagues in Brisbane.

Ross: Did you?

Harsanyi: Yes. Two of them were Cambridge graduates. Not first class, but second class, which was still very good. They were very lively and interesting people.

Anne: At lunch time--

Harsanyi: At lunch time we had one-hour or two-hour discussions about economics, politics, and whatever, so that I learned a lot and of course my English improved. And they were very kind to me.

Anne: And they would give interdisciplinary seminars to the faculty, too. Remember Greenwood?

Harsanyi: Oh, yes.

Anne: So you'd already started this interest in interdisciplinary studies at that time--'54.

Ross: Now what sort of economics were you discussing with these people?

Harsanyi: Mainly macroeconomics. They were not interested in microeconomics, which was closer to my own interests. Of course from a political point of view, macroeconomics is more important.

Ross: And how long were you at Brisbane?

Harsanyi: For three years.

Anne: Almost three years.

Rockefeller Fellowship to Stanford University, 1956-1958

Harsanyi: Almost three years. Then the Rockefeller Foundation established eight or ten--I think only eight--fellowships for Australian students so that they can go to America and study in their own field. And though I wasn't at that time Australian citizen yet--

Anne: But almost.

Harsanyi: Almost. They chose me among many many candidates.

Ross: You applied? So they didn't just pick you out? You applied? There was a formal application process?

Harsanyi: Yes.

Ross: And when you told them--did you tell them where you wanted to go in the States, or you just wanted to go to the States?

Harsanyi: No, I told them I wanted to go to Stanford.

Ross: How did you choose Stanford?

Harsanyi: It was really because Kenneth Arrow wrote an article, very popular article about game theory, that made me interested in working with him. He immediately wrote me that if I get the money, he would be happy to be my dissertation supervisor.

Anne: Even though he was on sabbatical.

Harsanyi: Yes.

- Anne: [Hendrick S.] Houthakker had to be the official supervisor, but Arrow consulted with you.
- Harsanyi: Yes.
- Ross: So you had developed this interest in game theory?
- Harsanyi: Yes.
- Ross: Okay, it's really after you get to Australia. But you're in Brisbane. And did you talk about Morgenstern and Von Neumann with your colleagues in Brisbane, or not yet?
- Harsanyi: Yes. One of my colleagues owned Von Neumann and Morgenstern's book.
- Anne: He lent it to you.
- Harsanyi: He lent it to me. But it was too difficult for me to understand.
- Anne: He didn't have enough math.
- Harsanyi: Moreover, I later found out that it was really not the best book for game theory. A little later, when I got acquainted with Professor Lloyd Shapley's and Professor John Nash's articles, then I was more interested in this kind of game theory.
- Ross: But you didn't know Lloyd Shapley yet?
- Harsanyi: Not yet. He was the son of an astronomer named John Shapley.
- Anne: It was in Santa Monica.
- Ross: So you applied from Brisbane and you got the Rockefeller?
- Harsanyi: Fellowship, yes.
- Anne: And then immediately afterwards we just happened to get our nationality immigration papers, so that was important.
- Ross: So he could come home. So he could come back.
- Anne: Yes. Actually we had to go back; the visa was such that we had to return to Australia.
- Ross: You had to return.

- Anne: We had to return for at least two years.
- Harsanyi: Well, later, then, we came to live in the United States.
- Anne: In '61.
- Harsanyi: In '61. Von Neumann wasn't alive any more,<sup>2</sup> but Morgenstern was, and he had connections with the Australian navy and got navy fellowships from the American navy, which used to support the game theorists. I first met most American game theorists in a seminar which Morgenstern organized.
- Anne: You are speaking--first we went back to Australia, though.
- Harsanyi: Yes. We went back to Australia--
- Ross: Okay, let's just talk a little bit about that. You were here one year under the Rockefeller grant.
- Harsanyi: Yes.
- Anne: Yes, and then spent another year teaching at Stanford.
- Harsanyi: Teaching.
- Anne: '56 to '58.
- Harsanyi: Yes.
- Ross: Now during that time you got your Ph.D.?
- Harsanyi: Yes.
- Anne: After one year.
- Harsanyi: Yes.
- Ross: After one year. Okay. You got your Ph.D. and I read in one of those articles that Professor Arrow said, "You're in the department of economics and this is all mathematics. You must at least use some examples of economics."
- Harsanyi: Yes. [laughs]
- Ross: Can you elaborate on that a little bit?

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<sup>2</sup>John Von Neumann was born in 1902 and died in 1957.

Harsanyi: Right. I had to write a dissertation, but in a way, mathematics subject as a dissertation can be very short and it was actually very short. I first wrote a theoretical part, and then Ken Arrow said, "It's okay, but you should have a numerical example." And in this numerical example, we needed a computer.

Return to Canberra, Australia, 1958-1961

Anne: After we went back to Australia, to Canberra, he got to use their computer.

Harsanyi: Only overnight because overnight nobody else used it. This was still a very primitive computer, but still, it was very helpful. And Anne, of course, helped me a good deal. First of all, she took me by car to the mountain where this was located.

Anne: It was in an observatory of the university.

Harsanyi: And so--

Ross: How did you finish your dissertation in your first year?

Anne: It was just all the courses.

Harsanyi: Courses.

Ross: All the courses. Then you went back to Brisbane.

Anne: Just for a couple of months and then to Canberra.

Ross: Oh, then to the National University?

Harsanyi: Yes. And there I got a very good research job with the title of senior fellow which meant that I virtually had not to do any teaching duties, but just research. I once had one student, but after a few weeks--two weeks--he decided that his interests were different than mine, [laughs] so I had no student left. This was very nice, but I felt very isolated because game theory was virtually unknown in Australia. This was shown by the fact that when I looked in the Australian National University Library for Von Neumann and Morgenstern's book, it was there, but it was under games and physical exercises. [laughter]

Ross: Oh! Had it been taken out by any economists?

Harsanyi: I don't know. Probably not. But of course, as the prestige university, they had to have the most important books.

Anne: You forgot to mention that another reason you got your first job, which is hard to get, was you already had publications.

Harsanyi: Oh, yes. I had this one Australian publication which was identical to my M.A. dissertation, but I also had several American and British publications.

Anne: Not written during that period, but they were accepted.

Harsanyi: Yes, and that was an important consideration, to getting this Rockefeller fellowship.

Anne: Also your job.

Harsanyi: Yes.

Ross: How long did you stay in Canberra?

Harsanyi: Three years.

Ross: And during that time you were working almost fully on game theory?

Harsanyi: Yes.

Anne: And he wrote his first book manuscript--his first book on games. I forgot the title, but also you rewrote it--the first draft you rewrote in Detroit, but the first draft you wrote in Canberra.

Review of Karl Popper's *The Logic of Scientific Discovery*

Harsanyi: And in the meantime, I met some interesting people: for instance, where did I meet, Karl Popper, that was--

Ross: Oh!

Anne: At the conference in Stanford, 1960.

Harsanyi: Yes.

Anne: You came over from Australia.



Harsanyi: Yes, just for a few days, and he was very kind to me. He was an excellent piano player and played piano to me and was very nice. And the following situation arose, he wrote his important book, *The Logic of Scientific Discovery*,<sup>3</sup> and this had many mathematical parts. He knew some mathematics, but not enough, so he made some mistakes, and one of my colleagues from the earliest periods--

Anne: From Canberra.

Harsanyi: Professor John Arthur Passmore, who was a philosopher, knew a little mathematics, but not much, and asked me to write a review of Popper's book.

Anne: Passmore wrote the book review, but asked you to do the mathematical part.

Harsanyi: Yes, mathematical parts of the review. And I, of course, had to point out that Popper was mistaken on several things. Then I met Popper the first time. This book review wasn't published yet, but I told Popper I didn't want him to be surprised that I disagreed with him. I did write a book review, or a part of a book review; mine was a kind of appendix. But I disagreed with many of his statements, and Popper, he didn't mind this. But when this book review appeared, I got a letter from him, that I should withdraw all these things.

Ross: Were you to correct the review?

Harsanyi: Yes, yes. Yes, to withdraw it and say I was mistaken, which of course I never did. Nevertheless, we remained good friends. He was very harsh on his own students. According to what I heard from his other students, he would ask a student to write an abstract of his dissertation, then after the first sentence, he would interrupt him and the student could not speak any more. [laughs] That was his way of teaching. But in private he was very kind. So I told him that I would write this unfavorable book review, but he didn't mind.

Anne: Until he saw it.

Harsanyi: Yes, and then he wrote me a letter that I should withdraw the whole story. And I said, I can't do it, because I'm convinced that I'm right. But we remained good friends. He invited me later to conferences and--but a very, very strange man.

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<sup>3</sup>Karl R. Popper, *The Logic of Scientific Discovery* (New York: Basic Books, 1959).

- Ross: I heard him lecture a number of times at the LSE [the London School of Economics and Political Science]. He was fascinating.
- Anne: Nobody dared to smoke. He didn't allow smoking.
- Ross: They didn't smoke in the lectures then. Even long ago they didn't. So you're now at the National University in Canberra.
- Harsanyi: Canberra.
- Ross: And you said you felt isolated.
- Harsanyi: Yes.
- Ross: Because there was no one interested in game theory?
- Harsanyi: Yes.
- Ross: And were the economists very good at mathematics or no?
- Harsanyi: Some of them were quite good. What was the--
- Anne: Trevor Swan.
- Harsanyi: Yes, there was Swan, for instance; he was a first-rate macroeconomist.
- Anne: A very strange man. He never published anything but just put them in his drawer.
- Ross: And so you decided you wanted to leave Canberra because you thought it was too provincial?
- Harsanyi: Yes. Yes. Exactly.
- Ross: How did you go about that?
- Harsanyi: I wrote to Ken Arrow and he then suggested that I should write also to Jim Tobin.
- Ross: He knew Tobin?

Semester at Yale University, 1957

- Anne: Well, he left out the whole year--our semester or quarter we spent at Yale.
- Harsanyi: Yale.
- Ross: Oh, let's get that down straight. You went to Yale for a term?
- Harsanyi: Yes.
- Ross: From the fall of '57 or the spring of '57?
- Harsanyi: Yes, fall of '57.
- Anne: Before, the summer you went to work with Herb Simon.
- Harsanyi: Simon.
- Ross: And so who invited you to Yale?
- Harsanyi: Jasha [Jacob] Marschak.
- Ross: Oh, yes.
- Harsanyi: And there I met Bart McGuire for the first time.
- Anne: Tobin, [Robert] Summers, [Herbert E.] Scarf. Well, Scarf you knew from conferences.
- Harsanyi: No, I had met Scarf at Stanford, so I learned some mathematical game theory from him, also.
- Ross: So now that term that you were at Yale you were a research person? You didn't teach?
- Harsanyi: Yes, I was a so-called research associate of the Cowles Foundation. Cowles was a very rich man, who was an accountant. He was a rich man and founded this foundation for the Cowles Commission. And so I then met Tobin and many other people.
- Ross: Who was responsible for getting you to Yale that fall?
- Harsanyi: Jasha Marschak.
- Ross: Okay. I've gotten that straightened out.

##

Anne: Why don't you tell now about wanting to get to America?

Harsanyi: Yes.

Anne: And talk about Wayne State and also how we were still on the Hungarian quota but they could fix it.

Anne's Work as Dress Designer and Stanford M.A. in Child Development

Harsanyi: Let me first talk a little about Anne. Anne, when we left Hungary, had almost finished her psychology degree. But maybe two weeks or four weeks before she finished we left, so this psychology was in her head, but she had no official qualification from this. Then we went to Sydney where Anne learned--

Anne: Got work as a typist.

Harsanyi: Typist, and then later in the evening, she learned dress designing and she became a very good dress designer. In Brisbane she made use of this. But unfortunately Brisbane has a very hot climate, and she had to work in a factory which has I think what kind of roof?

Anne: Corrugated iron.

Harsanyi: Corrugated iron. And it--

Anne: And it was right on top of us.

Harsanyi: And the result was not only that it was very unpleasant, she had to use up--how many dresses a day?

Anne: One dress a day.

Harsanyi: Every day, and that's because she--

Anne: So perspired. On the weekend I had to wash seven and iron seven dresses always. That was before the drip-dry.

I went back to the University of Brisbane to take a correspondence course and an evening course, but I couldn't finish that, either. Then at Stanford they let me--again, something like Brisbane and Sydney. I was over twenty-six.

Yes, I was twenty-eight, and they had a university division and they let me try for M.A. And I could do it, and got an M.A.

Ross: Oh, good. While you were at Stanford.

Anne: At Stanford, yes. I got an M.A. in two years. Right, so John got a Ph.D. in one year--[laughs]

Harsanyi: M.A. In child development.

Ross: When you went back to Brisbane, did Anne practice?

Anne: No, no, we were only there for two months. I wasn't even there. I went to Sydney to be with my parents. John stayed for two months and then we went to Canberra. There I got a university job. It was called a demonstrator, so it was a lowly job. I worked for the professor, the psych professor. Not at the Australian National University, but at the University College. This was also in Canberra.





## IV RETURN TO THE UNITED STATES, 1961

Full Professor at Wayne State University, Detroit

- Ross: Okay. So now, you were going to fill me in on a few more things before I had to change the tape. So to go back there, what did we miss out?
- Anne: You were talking to Arrow and Tobin and then they got you this offer from Wayne State University.
- Ross: I see, so when you'd gone back to Canberra--
- Anne: We spent two and a half years there.
- Ross: Yes, you were in Canberra from--
- Anne: '58 to '61.
- Ross: '61, but you wanted to come back to the States.
- Harsanyi: Yes.
- Ross: So you asked for help--or maybe they just simply offered.
- Harsanyi: No, I actually asked for this.
- Ross: So they said they'd see what they could do?
- Harsanyi: Yes, and they did get me a full professor job in economics at Wayne State University, but Wayne State had to certify that no American would be able to do this, and this was actually so because they paid only \$10,000 a year, which was a ridiculous sum.
- Anne: For a full professor--

- Harsanyi: For a full professor. There was no American willing to do this for that amount of money, naturally, so I got this job, and then this also meant that I got immigration permit and so on. And also Anne.
- Ross: So you immigrated as an Australian?
- Harsanyi: Yes, with an Australian passport.
- Anne: Yes, but we still were in the Hungarian quota. So that's why they had to certify that there was no American who can fill this job. To let him in despite the quota not coming up--it was according to the birth, the quota.
- Ross: Oh.
- Anne: Yes, the quota probably would have come up thirty years later, so we managed to get immigration permit to United States. I got a job, too, in psychology.
- Harsanyi: Psychology. And then later you worked also in psychology. Where was it?
- Anne: In Detroit.
- Harsanyi: In Detroit, yes.
- Ross: How did you find living in Detroit?
- Harsanyi: Well, at that time this was before these big revolts which destroyed half of the city.
- Anne: I'd say it was better than we expected.
- Harsanyi: Yes.
- Anne: There was some cultural life when we arrived.
- Harsanyi: Yes, and people were very nice.
- Ross: Well, at that time they had a good symphony.
- Harsanyi: Yes. Well, we needed a house that was close to the university, and there was one which originally didn't take black people, Jews, and so on, but that changed.
- Anne: Not officially, but in fact it changed.

- Harsanyi: In fact, it changed. Also, a number of my colleagues lived there, too.
- Anne: No children.
- Harsanyi: No children, but it was five minutes walk from the university.
- Anne: And John never learned to drive, so that was important.
- Ross: So what sort of professorship did you have? Did you teach undergraduates?
- Anne: Yes.
- Harsanyi: Well, partly undergraduates, partly others--graduates.
- Anne: It wasn't a big graduate program.
- Harsanyi: No. And--
- Anne: This time in person, not in correspondence.
- Harsanyi: Yes, and there were many different students. There were even Indians and Pakistanis.
- Ross: Yes. So did you think of staying at Wayne State, or you thought this was a good opportunity from which to move on?
- Harsanyi: No. Yes, I thought--
- Anne: Yes, that's what Arrow said: "Just accept anything because they can't get you here for interviewing from Australia."
- Harsanyi: That's very expensive.
- Anne: Tobin wrote John to accept the job and then get sorted out.
- Ross: So how long did you stay at Wayne State?
- Harsanyi: Three years?
- Anne: Almost three years.
- Harsanyi: Yes.

Visiting Professor at University of California, Berkeley, 1964

- Ross: And then?
- Harsanyi: And then we got an offer for a visiting professorship in Berkeley and that was very soon turned into a permanent professorship.
- Ross: But you came as a visiting professor?
- Anne: Yes.
- Ross: Who was responsible for that, probably?
- Harsanyi: I don't know. Bart McGuire, Tom Marschak--<sup>1</sup>
- Anne: These two.
- Harsanyi: Yes, these two.
- Anne: And I was pregnant. We arrived in January and Tom was born in April, so we timed it perfectly.
- Ross: So he's a Californian.
- Anne: Yes. He was born in Berkeley.
- Ross: Now, I'd like to ask you, when you first came to Berkeley, you'd already had those first three seminal articles published, hadn't you?
- Harsanyi: I think probably, yes. They were all accepted--
- Ross: Let's just see. Well, I can look this up, but I'd like to get it down straight if I can at the same time.
- Anne: That was in '64.
- Ross: No, because this is probably '77.
- Anne: Yes, but it was ready in '62 or '63; he just didn't publish it.
- Harsanyi: Well, it wasn't quite ready. I revised it.
- Ross: But you circulated the papers?

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<sup>1</sup>Professor of business administration at UC Berkeley.

Harsanyi: Yes.

Ross: Discussed them at meetings?

Harsanyi: Yes.

Ross: So that's why they felt secure about asking you to come to Berkeley?

Harsanyi: Yes.

Ross: And what was your first impression about coming to Berkeley?

Harsanyi: Well, we were very happy. Especially, Bart McGuire's first wife, Catherine, was very helpful in getting us first accommodations.

Anne: Renting a house.

Harsanyi: Renting a house and then in many other things, too. She died. As you may know she had melanoma, and the doctor didn't recognize it. She was a very beautiful, very nice, very helpful.

Ross: Well, that's a very sad note. I don't want to end on that today. What was your first impression of the university after Wayne State?

Harsanyi: Well, of course, a much better impression.

Anne: Shall he compare it to Stanford rather than Wayne State?

Ross: Well, I don't know if I want to get into comparing Cal and Stanford. [laughter] I think that might be dangerous around here, unless you wanted to make some comment?

Harsanyi: No, not really, but it so happened that we had an appointment here rather than at Stanford.

Anne: Well, actually, you were offered one at Stanford, and didn't take it.

Harsanyi: Yes.

Ross: Because of your colleagues and the collegial relationships, or because you were happy here as a family person in Berkeley?

Harsanyi: I think mainly for that reason.

Travel to National Parks

- Anne: Yes. And when we were students, we visited almost all the national parks, which we really enjoyed. We toured the country by car three times and when the car broke down, we came back by bus. [laughter] We saw an awful lot.
- Ross: Well, now, wait a minute, when you did the national parks, was this when you were at Wayne State?
- Anne: No, no, when we were students here--at Stanford.
- Harsanyi: Stanford.
- Ross: Oh, at Stanford. I see. We went back a few years. Okay.
- Harsanyi: We lived in Menlo Park.
- Ross: Was it because the parks offered, you know, safe places to camp and wonderful scenery and you like hiking? Or--?
- Anne: No, we just wanted--just the scenery. But we never camped. You know, at that time, motels were six dollars. And even though John had this one fellowship, the Rockefeller fellowship, out of this we had to live. I had to pay tuition at Stanford; he didn't. But somehow we managed. We managed it by having every evening for dinner a nineteen-cent hamburger--that's how we managed. [laughter]
- Ross: Oh, that's quite a deal. What kind of car did you have, do you know?
- Anne: We bought a six-year-old car.
- Harsanyi: Pontiac, I think.
- Anne: Not Pontiac. I don't know what it was. It was six years old when we bought it, and it lasted three cross-country trips, so it worked well.
- Harsanyi: But then it gave up. [laughs]
- Ross: And it gave up back in the East?
- Harsanyi: The East, and so we had to use a bus to come home.
- Ross: Well, I think the Greyhound was ninety-nine dollars roundtrip at that time. I'm not sure, but it was cheap.

Harsanyi: Very cheap.

Anne: But you see, we were not packed for Greyhound. We had thrown everything in the car and then we had to do something.  
[laughs] And we slept out for three nights and the third night was very uncomfortable.

Maybe the next time we could start with all these conferences where you met most of the game theorists for the first time.

Ross: Yes, because I would like to discuss, you know, the grouping of some of your best contributions. John, I can't really understand your proofs. I might as well just admit that straight off. So I will just have to ask you what you think was important, and what were the difficulties you faced and how you recognized them, but I think that's plenty for today. I thank you very much.

Harsanyi: Thank you.

#### More on Coming to Berkeley

[Interview 4: September 12, 1999] ##

Anne: We couldn't find his vita either, only this one page so I have to look for it.

Ross: Well, things are tough all over. Okay, well, here we are and it's September 12, Sunday afternoon about three-thirty. John, first of all, is there anything you want to correct or amend in our previous discussion?

Harsanyi: I don't think so. Is there anything to amend?

Anne: No, I don't think so.

Ross: Okay. Now, we last left that you'd come to Berkeley as a visiting professor.

Harsanyi: Yes.

Ross: And do I have it straight, this was 1964?

Harsanyi: Yes.



Anne: January.

Ross: In January of 1964. And then you were made a regular full professor in the fall of '64?

Anne: Yes. '64.

Ross: So it was only six months?

Harsanyi: Yes.

Ross: It didn't take them very long to decide that you were all right. So was the visiting professorship sort of a formality to put you here so that the rest of the department could see you?

Harsanyi: Well, I don't really know. Basically it is a trial period, but they wouldn't invite you if they don't expect that they then would appoint you formally. That of course takes a few months. And then in April my son Tom was born. And Anne--

Ross: That was April of '64?

Harsanyi: April of '64. My wife drove all the way from Detroit.

Anne: Detroit, New Orleans, and then New Orleans, Berkeley. Four thousand miles.

Ross: With Tom six months in the womb?

Harsanyi: Yes, right.

Anne: Yes. [laughter]

Harsanyi: Then we met here Bart McGuire and his first wife.

Anne: Catherine.

Harsanyi: A very beautiful and nice lady. Unfortunately she died a few years later.

Anne: Quite a few years.

Harsanyi: Yes, and Tom was born here in Berkeley. Then I was appointed a member of the Ford Foundation in Stanford. Behavioral science.

Ross: At the same time you were appointed here?

Anne: No, it was '65-66.

Harsanyi: Yes, '65-'66.

Center for Advanced Study in the Behavioral Sciences, Stanford,  
1965-1966

Ross: So you weren't here in '65-'66. You took a leave of absence?

Harsanyi: Yes.

Anne: Yes. [laughs]

Ross: And so you moved to Stanford?

Harsanyi: Yes.

Anne: Yes, since he doesn't drive, we had to move.

Ross: Yes, yes. Well, I thought you might whiz up and down. So you moved to Stanford, '65-66 for--?

Anne: Nine months.

Ross: For the institute or department?

Harsanyi: It was Center for Advanced Study in the Behavioral Sciences.

Ross: Is it a combination of psychology, history, or what is it?

Harsanyi: All fields.

Anne: People are invited for one year.

Harsanyi: And so we rented.

Anne: We rented an Eichler house. [laughs] Then almost immediately when we arrived there, John went off to a conference in Jerusalem, I think, and I went with Tom to see my parents in Australia. [laughs] So we were very mobile even though we had this small baby.

Ross: So what were your responsibilities at the center? If they let you go off almost immediately to Jerusalem--what is that--for a week, two weeks?

Anne: Oh, three weeks, I think.

Harsanyi: Yes.

Anne: But he just had to do research. That's all.

Ross: So you had no teaching responsibilities?

Harsanyi: No teaching whatever.

Ross: So you could do your own work, or did you have any seminars?

Harsanyi: Well, some seminars, but nobody had to participate and you could travel, anything, do some research.

#### Research Paper on Social Status

Anne: And you did. You wrote a paper on power, I think?

Harsanyi: Yes.

Anne: And then one on status, right?

Harsanyi: Yes. Social status.

Ross: By social status?

Harsanyi: Yes, meaning that whether you are regarded as a first-rate man or secondary or third-rate man. I tried to investigate the psychology or political or other reasons--value at a high status in any society.

Ross: No, I haven't read that, but I have read a couple of your papers on utility.

Harsanyi: Yes.

Ross: But does the social status hark back to your earlier years in sociology?

Harsanyi: Not hark back, but I think--

Anne: When it came out, the power came out in *Behavioral Science*--two papers on power. Then the status is really I think models for the analysis of the balance of power in society. Isn't that the same thing?

Harsanyi: Okay. Thank you.

Anne: Did you know Nelson Polsby?<sup>2</sup>

Ross: Oh, yes, I do.

Anne: He was there at the same year; that's where we met him. He persuaded John to write about status.

Ross: And what did you say in this paper about status?

Harsanyi: Well, maybe we have a copy.

Anne: Yes, though I would have liked to say a few words.

Ross: I'm simply interested in that, but I can look it up. That'll be no problem. So you had nine months at the Stanford center?

Harsanyi: Yes.

Ross: And so you had just arrived at Berkeley, and you say, "Well, ta-ta. I'm off to Stanford?"

Harsanyi: Yes.

Ross: And they said fine?

Anne: Well, he was teaching in '64, and then in '65, fall, he went.

Ross: Okay, so and then you came back?

Harsanyi: Yes.

Anne: That was without pay when he went.

Ross: Without pay from Berkeley, but surely the center gave you--

Anne: Yes, yes.

Harsanyi: Yes!

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<sup>2</sup>Professor of political science at UC Berkeley.

Difference in Salary Rates

Ross: I meant to ask you. When you went to Wayne State from Australia and you only got \$10,000 for a full professorship, was that a reduction in pay from what you'd had in Canberra, or was it pretty much the same in terms of living expenses?

Harsanyi: Relatively much the same. But you know, at Canberra, I was only a senior fellow, not a professor. In the United States, \$10,000 for a full professor was very little, but they actually increased my salary soon to \$16,000 I think.

Anne: Well, no, when John called them up that he's staying at Berkeley, then they offered \$16,000 for him to come back. But he didn't go back.

Ross: No, because what was Berkeley paying?

Anne: \$14,000 I think.

Ross: \$14,000--is that all?

Harsanyi: Yes.

Ross: Not much.

Anne: That was in '64.

Ross: Yes. Still not much for Berkeley then.

Anne: No, no.

Ross: Well, he seems to have been a cheap item. [laughter]

Harsanyi: Yes.

Ross: So now, you came back to Berkeley after this year at the institute.

Harsanyi: Yes.

Position in the Business School and Department of Economics

Ross: So then what happened?

- Harsanyi: Again, I was full professor, first only in the Haas School, and then later this was extended to the economics department.
- Ross: You don't remember what year that economics was added?
- Harsanyi: Maybe two years later. Yes. Maybe '67.
- Anne: Dale Jorgensen was the main force behind this, that John should join them.
- Ross: And then did you teach a course specific to the economics department, or did the students just get credit if they took your courses?
- Harsanyi: Well, I gave a course and of course the students got credit for it.
- Anne: But they really couldn't pay--the economics department.
- Harsanyi: No, the economics department couldn't pay.
- Anne: The business school paid his whole salary.
- Ross: But they simply gave you the title?
- Harsanyi: Yes.
- Anne: Yes, courtesy title.
- Ross: But then did you design a course specifically for economics?
- Anne: I don't think so.
- Ross: Or did you just say, if you take my course X in the bus-ad school, you can get economics credit for it?
- Harsanyi: No, in the business school, I gave courses and there was credit for it. I was very interested in giving courses in game theory, but there were not enough students to make it worthwhile to give it.
- Anne: Every year.
- Harsanyi: Yes, well, I think every year, but only for Ph.D. students. Otherwise, I was teaching basically microeconomics courses. Intermediate microeconomics courses.
- Anne: Now the economic students would get credit.

Harsanyi: Oh, yes.

Anne: You even had students from other fields.

Harsanyi: Oh, yes. Oh, yes.

Ross: So that it didn't make much difference to you that you had the title of professor of economics?

Harsanyi: No.

Ross: You could teach the same courses.

Harsanyi: Yes.

Ross: But it was an honor and it also meant the students could get courses in their own department to satisfy their unit requirements.

Harsanyi: Yes, yes.

Ross: So it was a book-keeping matter in some ways.

Harsanyi: Yes. But business schools are usually more prosperous and the economics department very poor, and so there I didn't get special pay, but I liked to teach those students also. And since I taught the course together with Professor Jorgensen--

Anne: You taught one course together, once, with Dale Jorgensen, yes.

Ross: But he was instrumental in getting you appointed?

Harsanyi: Yes.

Ross: Professor of economics.

Harsanyi: Yes.

Ross: Because he liked having you as a colleague?

Harsanyi: Yes.

Ross: I assumed that. So and he moved on--didn't he--to Harvard?

Harsanyi: Yes.

Ross: And did you co-teach with anyone else after that?



Harsanyi: No. In Stanford I was teaching game theory and also econometrics.

Anne: That was in '57.

Ross: But you were really only team-teaching once, with Dr. Jorgensen?

Harsanyi: Yes.

### Campus Disruption in the Sixties

Ross: So the years rolled by. Is there anything that you remember specifically at Berkeley in the late sixties? Because this of course was a time of great troubles.

Harsanyi: Yes, yes, I remember. During Governor [Ronald] Reagan, there were--

Anne: They have a gas--what is it called?

Ross: Tear gas.

Harsanyi: Tear gas, yes.

Anne: Tear gas. Yes. But John didn't cancel his class. Most people gave up, but John went on with his class.

Harsanyi: Well, we were in a closed room.

Anne: But it came from the air.

Harsanyi: Yes, from the air, but only when we were out would you feel this.

Anne: Yes, but most professors stopped teaching at that time.

Ross: Well, some did, some didn't. But, your students came?

Harsanyi: Yes, yes.

Ross: Well, people who are taking game theory classes are going to be pretty serious. [laughter]

Anne: Yes.

Ross: So as far as your experience of those, in quotes, "times of troubles," you simply carried on with your teaching?

Harsanyi: Yes.

Ross: And were not involved--and you did not demonstrate?

Harsanyi: No.

Ross: And nobody demonstrated against your class particularly.

Harsanyi: No.

Anne: No, but he went to faculty meeting--not faculty--these bigger meetings.

Ross: Senate meetings?

Anne: Senate meetings more often, because he was very mad about the whole thing. Yes.

Ross: You were very mad because of the disruption?

Anne: Yes.

Ross: To the class.

Harsanyi: Yes. I didn't sympathize with these leftist students.

Ross: Well, you'd seen plenty of troubles about classrooms before.

Harsanyi: Yes.

Ross: Do you remember anything specifically about the early seventies?

Anne: Well, one very big thing that happened to him when he was in this interdisciplinary seminar--or I don't know what it was called. Arrow used to come over from Stanford and a few other people. Bart McGuire organized it with Arrow. Do you remember those seminars?

Harsanyi: Yes.

Anne: It petered out.

Ross: When was this?

Anne: This was when we arrived.

Ross: Oh, so in the middle sixties.

Harsanyi: Yes.

Anne: Yes, it was alternately somebody from Stanford talked and somebody from here talked, and alternatively they met here or there. And it was very interesting, but then it petered out.

Ross: Did it peter out because people just thought it was too far to travel?

Harsanyi: I guess so.

Anne: Arrow was never willing to drive here to have dinner with us, either. [laughs]

Nelson Polsby's Interviews of Stanford Students in the Sixties

Ross: So. What do you remember about the seventies, particularly, at Berkeley? What was your involvement in the campus?

Harsanyi: Let me say something here, by the way, when we were at the Center for Behavioral Sciences. One of my classmates, as it were, was Nelson Polsby. And he invited these leftist students to talk about their views and everything and then turned out that all of them had Communist parents.

Ross: Really?

Harsanyi: Yes.

Ross: I'm surprised.

Anne: We thought that this was a reaction against bourgeois parents, but it wasn't true at all.

Ross: Yes, that was the general impression, that they were middle-class children.

Harsanyi: Yes, it was the other way around. They followed the family tradition rather than revolting against their parents.

Ross: Interesting.

Harsanyi: And this it turned out because Nelson Polsby called them and interviewed them in Stanford, and they very frankly said what

the situation was. This was just personally very interesting to me. Of course, Nelson Polsby's a very good interviewer and brought out how the parents affected the students.

Meeting Game Theorists at Princeton Conference

Anne: To back up a little--one of the main reasons in coming to this country was for him to take part in conferences.

Harsanyi: Yes.

Anne: This started in '62, when we were still in Detroit. So you should tell Marion about the Princeton meeting, and how you met all these game theorists for the first time.

Harsanyi: Yes.

Anne: And then in '70 you organized a meeting, too.

Harsanyi: Yes. Well, first of all, by the time we arrived in this country, Von Neumann was already dead.

Anne: Or not quite, but he never met him.

Harsanyi: Yes, he died a few weeks later. But Morgenstern still survived.

Ross: And where was he?

Harsanyi: Princeton. Von Neumann used to be in the Institute of Advanced Studies in Princeton, but Morgenstern was just a professor in Princeton, and he then organized conferences for game theorists, mainly young game theorists.

Anne: And older ones like Popper and so on.

Harsanyi: Yes, that's so. And at that point I met at these conferences John Nash, Shapley, and [Martin] Shubik. Shapley had the famous father who was an astronomer, but he was just a mathematician and a game theorist.

Anne: Then you met the Israeli game theorists.

- Harsanyi: Yes. [Robert J.] Aumann and [Michael] Maschler.<sup>3</sup>
- Anne: And then Reinhard Selten from Germany you met for the first time in Princeton, with whom later he wrote a book.
- Harsanyi: Yes.
- Ross: So you met him, along with these others, at the very first conference you went to?
- Harsanyi: Yes.
- Anne: Yes, it was in '62.
- Harsanyi: It was a rather large conference, and this could be organized because Morgenstern had a lot of money from the Office of Naval Research.
- Anne: So had Arrow.
- Harsanyi: Yes.
- Anne: And the typing of the dissertation was financed by the U.S. Navy.
- Harsanyi: Yes.
- Ross: So Mr. Morgenstern had a lot of money from the Office of Naval Research?
- Harsanyi: Yes.
- Ross: And the intent of that was to think about the application to war strategy?
- Harsanyi: I guess so, but since game theory had some remote connections with war problems, they very generously financed this.
- Anne: Then they started discussion for meetings.

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<sup>3</sup>Both at Hebrew University, Jerusalem.

Meetings Organized by the State Department on Arms Control and Disarmament

- Harsanyi: Yes, then a very important thing for all of us was that the office of what is it called, Arms Control?
- Anne: And Disarmament.
- Harsanyi: And Disarmament Agency--was part really of the State Department, but very independent.
- Anne: State not Defense?
- Harsanyi: No, State Department, because this was regarding the foreign policy problem.
- Anne: Yes.
- Harsanyi: So we met three times a year.
- Anne: Well, first, that's where about a dozen or ten people were invited to take part.
- Harsanyi: Yes.
- Anne: You were one of them, the two Israelis, Scarf, [Gerard] Debreu<sup>4</sup> in the beginning, and you got Reinhard Selten to be invited.
- Harsanyi: Yes, and [Roy] Radner was in it. And Shubik and Shapley.
- Ross: So you saw to it that these people were invited to this series?
- Anne: No, he only saw to it that the German--Selten--was invited. The others were invited by Morgenstern.
- Ross: Okay, but you were responsible for Mr. Selten being invited.
- Harsanyi: Yes.
- Ross: Now, you had met him at the first conference that Mr. Morgenstern organized when you first came to the States. Had you had any interchange with him before you got him invited to this series of meetings in Washington, or did you just recognize a kindred soul?

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<sup>4</sup>Professor of economics at UC Berkeley.

Harsanyi: Well, I recognized his very interesting paper, which he read at the conference, and I realized that it would be worthwhile cooperating with him.

Anne: Which is the only time John cooperated with anybody in research.

Ross: But later you worked with him here?

Harsanyi: Yes, both here and in Germany.

Anne: We spent two years in Germany.

Ross: Oh, okay. Let's not get into that just yet.

Harsanyi: Yes. [tape interruption]

Ross: So let's go back now to this series of conferences.

Harsanyi: Three times a year.

Ross: Okay.

Harsanyi: Not in the summer.

Ross: So you met, and for how long did you meet? Three weeks, two weeks?

Anne: Oh, no. Just a week, I think.

Harsanyi: Yes, at most a week. Maybe only three days--I don't remember.

Ross: And so this same group continued for how many years?

Harsanyi: Well--

Anne: Maybe three or four years.

Harsanyi: Yes.

Anne: And everybody gave a paper there.

Ross: Was it to have applications to defense?

Harsanyi: Yes.

Ross: Or could it be theoretical?

Harsanyi: Arms control and disarmament.



Anne: Applications to arms control.

Arms Control Theories Leading to Nobel Prize

Harsanyi: This was a very valuable experience for all of us. I wrote my paper which was most important for my Nobel Prize about how to represent mathematically a problem that we had constant conferences about arms control and disarmament with the Russians, and we didn't know what their real intentions were-- whether they really wanted a peaceful resolution of conflicting interests, or whether they wanted next year to bomb us. It was impossible to know.

Anne: And they didn't know.

Harsanyi: They didn't know what we wanted to do. I mean, the Americans wanted to do. So we had to represent this uncertainty in probabilistic terms, saying that the probability, let's say, for this is 30 percent or 10 percent and so on. I developed a mathematical model for this, and this was really the main paper--which was too long to be published in one piece. It was published in three pieces, I think, in *Management Science*.

Anne: Three.

Harsanyi: And this was the basis, I think, mainly for my Nobel Prize.

Ross: Because weren't you the first--well, not the first, because other people had thought about the problems of uncertainty.

Harsanyi: Yes.

Ross: But they hadn't developed any mathematical model.

Harsanyi: No.

Ross: And how did you come--because you did it, as I think I understand, on the basis of probability theories.

Harsanyi: Yes.

Anne: This was really incomplete information, not just uncertainty.

Ross: A big difference. Yes.

- Harsanyi: Incomplete information means that you don't know the basic facts--some basic facts--and therefore you have to say that either this is true or that is true, and I'll assign some probability to these possibilities.
- Ross: And how did you get hold of that idea? Can you remember how you got hold of it? Because now it seems very reasonable--but nobody else had done it. [laughs]
- Harsanyi: Well, actually, it went back to Canberra. I was very interested then in game theory, and I realized that game theory can be used for foreign policy purposes including armament and disarmament and such things. And then I still, I think it was in Canberra when I was invited to give a paper.
- Anne: In Stanford.
- Harsanyi: In Stanford.
- Anne: In '60.
- Harsanyi: '60, and there I met Karl Popper.
- Anne: You told her about that before.
- Harsanyi: Yes. And then I talked earlier--already in Stanford I took lectures from Ken Arrow and Scarf. And Arthur Goldberger, who was an econometrician. And then I taught also a year later, this subject.
- Anne: This used to be handled with: "I knew that he knows that, and he knows that I know," *ad infinitum*, and he cut through this.
- Ross: Yes. I'm a little bit familiar with that, but now you didn't--with Karl Popper, you didn't get any idea about the probability theory applications?
- Harsanyi: No. Actually Karl Popper was somewhat--he never talked about probability theory and that was probably mentioned to you that I wrote--
- Anne: Yes, you did.
- Harsanyi: A critical article and somehow we remained good friends.
- Ross: So you'd already begun to think about this in Canberra?
- Harsanyi: Yes. Very generally, only.

Anne: But you got some ideas, I think, mainly from Maschler, in this group that you could suppose that there are agents.

Harsanyi: Yes, we called types. Maschler gave the name.

Ross: You would choose between a particular player and the type of player?

Harsanyi: Yes. It means that a player, as if it were, a person, plays a role at the theater, but then, depending on the situations, he makes different assumptions about the other peoples' likely behavior and so on. Maschler called this types. He said that this person might be of one type. For instance, the Americans --the Russians didn't know about the Americans, but they might think that the Americans are very hostile to the Russians.

Anne: That could be A-1. Type A-1--American-1.

Harsanyi: And A-2 might be an American player who wants to get a peaceful resolution of problems, and A-3 might be a person who can't predict what policy will follow in a year, and he himself only has probabilities of outcomes. So these are various types of the American players as seen by the Russians.

The other way around there is an R-1 an R-2 and R-3. These can be represented probabilistically and so you get some practical advice on what you should do.

Ross: Now, when you talk about the type of player, are there distinctions? Let's see, are the types always defined as goal-oriented? That is, they're hostile or they're peaceful? Or can it also be in terms of their modes of operation?

Harsanyi: Not only. Yes. And also about their expectations about the other players. That's of course very important. As far as the Russians knew, the American government, which you might call personifies an American player, might want to bomb them next year, or want to have a peaceful resolution and so on. This depends on his own expectations about the Russians.

So this is the problem. Here in ordinary logic, you get an infinite regress. But the problem which I tried to solve was that you shorten this regress to one moment when you decide what to do, and then depending on what you do, from the Russians' point of view, the American type one or American type two, the American type three, and so on. And this made it especially good to have a mathematical representation for all of these things. The problem is really logically quite simple,

as distinguished from this infinite regression which we can't really ever work out.

Ross: And this--is it too simple a word to say compression? Did this come to you when you were working there in Washington in these seminars?

Harsanyi: Yes, exactly. I first expressed this in a more complete way and as Anne suggested, Professor Maschler suggested to use this term type to make this easier to speak about.

Ross: I take it that these meetings were very stimulating as far as you were concerned?

Harsanyi: Oh, yes, very! Very much so. I think for all the participants.

Ross: So you came back to Berkeley each year renewed by these interchanges.

Harsanyi: Oh, yes.

Anne: For months, yes.

#### Exchange of Ideas on Game Theory with Reinhard Selten

Ross: And then when did you invite, or have the university invite Mr. Selten to come to Berkeley?

Harsanyi: Well, after meeting him the first time at the Princeton conference organized by Professor Morgenstern, I was very impressed by the paper he gave and then we got well acquainted.

Anne: You started correspondence.

Harsanyi: Correspondence, yes, and telephone messages. Then eventually he invited me for two different years to Bonn, I think. Was it? No, no, it was in Bielefeld.

Anne: Bielefeld. But first there was the '65 conference in Jerusalem.

Harsanyi: Yes.

Anne: The game theory conference. And in '70 you had it here in Berkeley. You organized it.

Harsanyi: Yes. Yes.

Ross: And when did you go to Bielefeld?

Anne: It's near Hanover. Northern Germany.

Harsanyi: Yes, it was really a textile town at that time.

Ross: Yes. But he was there?

Harsanyi: He was there--professor.

Anne: Yes, and we were there in '73-'74, and then '79-'80.

Harsanyi: '80, yes.

Ross: For the whole academic year?

Harsanyi: Yes.

Ross: Both times?

Anne: And our son Tom went to a gymnasium and learned excellent German.

Ross: And when did Mr. Selten come here?

Harsanyi: It was several years, but only--

Anne: Once he stayed for a whole academic year; otherwise, it was summers or just spring. But I don't remember the dates. Oh, wait a minute, when Tom was about four or five, which would have been '68, '69, '70--like this.

Harsanyi: Then he spent a few weeks here.

Anne: Not a whole year, no. Just a few weeks.

Harsanyi: I don't remember exactly, but then we worked together with him in Germany for two years.

Ross: What do you think you gained from him?

Harsanyi: He's a mathematician.

Anne: Because John isn't.

Harsanyi: Yes, and he had very good insight in the many applications of game theory--for instance, even to animal behavior. He wrote

papers about how you can explain animal behavior in game theoretical terms.

Ross: Could we for just a moment? And how is that?

Anne: Evolutionary game theory, they call it.

Harsanyi: Yes. An animal works according to inherited instinct, which is determined by his or her genes. Then those animals who happen to have good genes survive and the others don't and so really by Darwinistic methods you can explain why they behave this way. It goes as far as why certain insects pollinate certain flowers.

Anne: What does game theory have to do with it?

Harsanyi: Well, again, game theory is a model to explain these things.

Ross: How did he improve on Darwin?

Harsanyi: Well, it was just applying these ideas to details of animal behavior--insects and birds and all sorts of animals' behavior, which Darwin didn't do in that detail.

Anne: But John really didn't follow this part of his work.

Harsanyi: No, that was really Selten's work.

Ross: So what do you think you got from him? You said he was basically a mathematician.

Harsanyi: Yes. Yes, and he had very good insight in many mathematical problems involved in game theory.

Anne: Then you decided to write a book together.

Harsanyi: Yes, then we wrote a book together, yes.

Anne: For eighteen years.

Harsanyi: Yes. [laughter]

Ross: Why did you decide you should write a book together?

Harsanyi: Because we had common interests. Not, as I said, my interest didn't extend to animals.

Anne: But that's not in the book, anyway.



- Harsanyi: Not in the book, but--well, in many other ways our interests are very convergent.
- Anne: Because there are so many problems to work out, that--
- Harsanyi: Yes.
- Anne: Tell Marion about cooperative and noncooperative game theory.
- Harsanyi: Yes.
- Anne: All of this had to be worked out. You tried several solutions and it's very hard for one person to criticize himself all the time, but--
- Harsanyi: Yes, interactions.
- Ross: But let me repeat this again. You said he had very good insights, but what was his particular expertise that helped you along?
- Harsanyi: Well, I have to go here into some technical terms. He had very good insight in extensive games--how should I explain this?
- Anne: Hm. When every movement is written down.
- Harsanyi: Yes. You know, Von Neumann and Morgenstern introduced a concept of strategy which essentially means that you plan in advance what you will do in any possible situation. But you get additional insight if you look at the moves themselves, and if you do that, you get what you call the extensive form of the game. And he had much better insight into that than I did, so we supplemented each other in many ways. As it were, some of the philosophical aspects I understood better but he understood this extensive games much more than I did.
- Ross: So you kept at this collaboration for eighteen years?
- Harsanyi: Yes.
- Ross: Beginning in--
- Harsanyi: At the conference in Princeton--
- Anne: Well, you didn't start on the book until after these Washington meetings were over.
- Harsanyi: Yes.



Anne: Probably '69 or '70.

Harsanyi: And also we visited him and he visited us several times.

Anne: Yes. They had four or five solutions that they all discarded, and they discarded all of them and they went on and on to incorporate everything. They wanted a general theory.

Harsanyi: Usually when Reinhard suggested something, a few weeks later I showed its inadequacy and vice versa, so we improved our solution concepts. And it took us eighteen years to get something we both could subscribe to. We remained good friends all the time.

Ross: And when you weren't there and he wasn't here, you did this by correspondence?

Harsanyi: Yes.

Anne; Or telephone.

Harsanyi: Telephone, also.

Ross: Was the telephone important, or no?

Harsanyi: It was important because sometimes we were lazy to write letters.

Anne: He. He was especially bad at writing. You could wait months for the post, so John usually called.

Ross: Saying, "How come you haven't replied?" [laughter]

Harsanyi: Yes. Then Reinhard always said that he collects old letters which he should reply, and after half a year he tries to reply to all of them, so that was--

Anne: And by the time, he only has to reply to half of them.

Harsanyi: Yes. So this wasn't so good. But telephone conversation, of course, was better for this, and personal interaction--when we met personally.

Ross: When did you decide that you really had an absolutely defensible presentation?

Harsanyi: Well, after about eighteen years. [laughs]

Anne: Yes. Well, 1980. The book came out in '88. They were still doing little changes, so it really started in '70. That's how you calculate it, because the book came out in '88.

Harsanyi: Yes.

Ross: But how--can you remember the moment when you thought, "Okay, this is it. We know we've got it right?"

Harsanyi: Well--

Anne: I don't think this moment ever came. After the book, you wrote two articles still making differences.

Harsanyi: Yes.

Anne: But it's really--they gave talks and at all these meetings, and they got the input of a lot of other people and then the objections didn't come in so fast, [laughs] and then they felt better about it.

Harsanyi: But this--see, this work for the arms control and disarmament agency was very important to all of us, because we met three times a year and we read each other's papers.

Ross: But that only lasted about four years.

Harsanyi: Yes.

Ross: And that was--as I recall now, that was in the late sixties?

Harsanyi: Yes. Then the money ran out. [laughter]

Ross: But you kept on thinking.

Harsanyi: Yes.

Ross: So this was a very formative period?

Harsanyi: Yes.

Ross: But we still have to get up to '86 when the book, I take it, goes to the publisher.

Harsanyi: Yes.

Ross: It takes until '88 to get it out, probably.

Harsanyi: Yes.

Ross: So during that time are you making just tiny adjustments?

Harsanyi: Oh, tiny--well, sometimes tiny, but sometimes fundamental adjustments, because one of us suggested something and a few months later the other one would point out difficulties in applying it and so we changed it. Sometimes major, sometimes minor points.

Ross: Now in this period, let me say from roughly 1970--

Contributions of John Nash and the Nobel Prize, 1994 ##

Ross: Okay, we're now on Side B. Let me just mark it. [pause]  
Okay.

Harsanyi: The Von Neumann-Morgenstern theory basically can be separated in two parts. One was the theory of two persons zero-sum games, which of course are completely noncooperative, and the other was the theory of cooperative games, which was the main part of their joint book. Many of us decided that its cooperative game theory wasn't very good and then several of us wrote noncooperative game theory which was based on Nash's, Shapley's, and some other peoples' articles. It basically disregarded most of the Von Neumann-Morgenstern book, but went on new lines. And what happened was Nash wrote maybe three articles. Three or four important articles, and he was at that time very young.

Anne: Graduate student.

Harsanyi: Yes, at first undergraduate, then graduate student. And unfortunately, later he had a period of schizophrenia and had to be treated in hospitals. But at that time he was already very bright and not only did he make fundamental contributions to game theory, but all sorts of mathematical problems of very abstract natures--at solving radically new problems. The problems were not new, but the solutions were really new.

Anne: But then you needed a noncooperative model, which was not zero-sum.

Harsanyi: Yes.

Anne: Where the game is partly cooperative and partly noncooperative.

Harsanyi: Yes. And that we developed on the basis of Nash's and Shapley's and Shubik's and other people's articles.

Anne: But this noncooperative game theory was out of fashion.

Harsanyi: Out of fashion, yes.

Anne: And so people didn't want to accept the work.

Harsanyi: But then it became more accepted, especially when my papers solved the problem of incomplete information, which was obviously important, but there were no ways to approach it until my three-part paper produced a solution.

Ross: So now were you in touch with John Nash during this period? Because I thought that right after his first couple of papers he essentially didn't do any work for a good many years.

Harsanyi: Well, three or four papers.

Ross: Were you in touch with him?

Harsanyi: No.

Anne: He once talked to him.

Harsanyi: Yes.

Anne: That he might teach at MIT and he wanted John's--

Harsanyi: Lecture notes. But that was already when he got somewhat disturbed. And at the first meeting that I met him was in Princeton in '62, where I met many other game theorists. He was already sick and he obviously clearly attended to what people were saying, but he never said anything himself. His closer friends told me that he didn't dare to say anything because he could not distinguish whether he said something crazy or something intelligent because of his situation. But he obviously was and is a real genius, although he has had disturbed years.

Ross: I understand that he's back functioning now.

Harsanyi: Yes.

Ross: Have you met him since?

Harsanyi: Oh, yes.

- Anne: Yes. At the Nobel, he spoke to him, and three or four game theorists spoke in his stead.
- Ross: Oh! Could I just jump ahead to that as long as we're talking about him and then we can get back.
- Harsanyi: Yes.
- Ross: Was he able to come?
- Harsanyi: Oh, yes.
- Anne: Yes. But he had a friend there who spoke for him.
- Harsanyi: But he was very early suggested for the Nobel Prize--maybe three years earlier.
- Anne: Oh, that was a rumor.
- Harsanyi: And some members of the Nobel committee for economics were afraid that when he comes to give a paper in Stockholm, he will behave irrationally and bring shame on the Nobel committee.
- Anne: Well, that's all written down in the biography by Sylvia Nasar. *A Beautiful Mind* is the title.<sup>5</sup>
- Harsanyi: Yes.
- Ross: Good, good. I've only read a review. Okay, so let's drop back.
- Harsanyi: Yes.
- Anne: And then afterwards you went to Jerusalem again with Selten and Nash, to a conference in honor of Aumann.
- Ross: Did you just set the Israelis straight, or did you learn something from them?
- Harsanyi: Well, yes, I learned--
- Anne: Aumann's excellent.

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<sup>5</sup>Sylvia Nasar, *A Beautiful Mind: A Biography of John Forbes Nash, Jr., Winner of the Nobel Prize in Economics, 1994* (New York: Simon & Schuster, 1998).

- Harsanyi: Yes. He's a first-rate game theorist, and it was surprising that he never got the Nobel Prize too, because he deserves it more than anybody else.
- Ross: What was his particular insight?
- Harsanyi: Well, he wrote so many papers in game theory which are very important that it's hard to say what particular insight he had, but he had many.
- Ross: All right. Now let's drop back to your collaboration with Mr. Selten.
- Harsanyi: Yes.
- Ross: So you're back and forth all this time?
- Harsanyi: Yes.
- Ross: Sometimes by phone, sometimes by correspondence. And meanwhile was there anybody else during these intense periods of collaboration that was as important as those first insights you got when you were first at Princeton and then in Washington, D.C., or were you and Mr. Selten mostly working just two by two?
- Harsanyi: I think two by two. We worked that way. But we learned a lot at various conferences from the Israeli game theorists.
- Anne: But you asked Aumann to write the foreword to your and Selten's book.

#### Growth of Game Theory Field

- Harsanyi: Well, I just want to say that obviously since at that time game theory was a very small field, all of us were personal friends of each other and now it's impossible to have too many game theorists.
- Ross: And now I should think almost--maybe not from the middle eighties, but certainly towards the latter part of the eighties, everyone I interviewed for a job had game theory as one of his fields.
- Anne: Really?



- Harsanyi: Oh? Well, it became fashionable.
- Ross: But that's before your Nobel Prize.
- Harsanyi: Yes.
- Ross: It usually takes a long time for new ideas to get into standard curriculum.
- Harsanyi: Oh, yes.
- Ross: So why do you suppose that from '87 to '88 on--why was that already so important in the standard curriculum?
- Harsanyi: Well, because of its many practical applications. Like, for instance, at one time the American government authorized various individual organizations to look for oil under the ocean, of the part of the ocean which is under the sovereignty of the United States. It turned out that game theory was very important in deciding these things. For instance, there was a time when these parcels of the land, but mainly parcels in the ocean in the United States jurisdiction were located. One important point was the government should maximize its revenues from this. I don't remember if this was in the form of taxes or in the form of licenses or whatever, but in order to do this there was a lot of game theoretical thinking.
- Anne: Well, there's the bidding.
- Harsanyi: Yes, bidding process.
- Anne: They came to realize that the second highest should get it, not the highest.
- Harsanyi: Yes. [laughs]
- Anne: But I don't know the reason behind that. [laughs]
- Ross: [William] Vickrey wrote a seminal article on that in the AER about twenty-five years ago.
- Harsanyi: Yes, he really suggested this. Unfortunately he died very young.
- Ross: Yes, he only had two or three days to enjoy his Nobel Prize.
- Harsanyi: Yes.
- Ross: I thought he was a very nice man, too.



- Harsanyi: Very nice man.
- Ross: So, game theory became fashionable. Was this reflected in your enrollments?
- Harsanyi: No, in the business school I basically was teaching game theory only to Ph.D. students who were twenty or less every year.
- Anne: Of course he retired in '90.
- Ross: Yes.
- Harsanyi: But I think there were more practical game theorists in Stanford, Milgrom and other schools.
- Ross: [Paul] Milgrom?
- Harsanyi: Yes, I think it's also a Scandinavian name. He did a good deal to apply the incomplete information model to real-life situations.
- Anne: You should mention the main centers of game theory in the world.
- Ross: What universities were or are particularly important in game theory?
- Harsanyi: Stanford is certainly one.
- Anne: And then how about Northwestern?
- Harsanyi: Yes, Northwestern and Jerusalem. That's about it.
- Anne: And some in Germany.
- Harsanyi: Yes.
- Ross: But not Princeton?
- Harsanyi: Not now, but well, it was in Morgenstern's time.
- Anne: He died a long time ago.
- Harsanyi: Nash studied in Princeton.
- Anne: And he never agreed with Von Neumann on anything.

Research and Writing at Home

- Ross: So now, after you retired, you continued to work at the university to do your own research?
- Anne: But he always worked at home.
- Harsanyi: Yes, in this room. [laughs]
- Ross: Okay. Well, now, that's interesting. But that's not a table-- Is this the table you would use? [laughter]
- Harsanyi: Yes.
- Ross: All right, so I could say it's the dining room table?
- Anne: Dining table.
- Ross: Which seats six?
- Anne: I can stretch it to ten. [laughs]
- Ross: Okay. And so did you make use of the computer, or simply your pencil?
- Harsanyi: My pencil. I never really learned how to use a computer. My son is great at that, but I always wrote by hand.
- Anne: He didn't learn to type. [laughs]
- Ross: So you did it all by hand and then Anne typed it?
- Anne: In the beginning.
- Harsanyi: Well, in the beginning but later I had people at the university to write it.

More on the Game Theory Conferences and Participants

[Interview 5: September 15, 1999] ##

- Ross: Okay, here we are on the fifteenth of September 1999, at three-thirty. Is there anything that you wanted to add to the last bit? I realize we missed the first part of the last session, but is there anything you wanted to add to the last section

when I got the machine going again before we start in on the next chapter?

Harsanyi: Just a minute.

Ross: There's no hurry.

Anne: We talked about various conferences.

Harsanyi: Oh, yes, so that was already when we were in the United States.

Anne: And in '62 there was an international conference in Princeton, followed in '65 in Jerusalem, and in '70 in Berkeley.

Harsanyi: Yes. When we first came to the United States, I was professor at Wayne State University and this started in '61. Then in '62 Oskar Morgenstern organized a conference at Princeton and it was there where I met many well-known game theorists, including my friend Reinhard Selten and also Nash, Shapley, and Shubik, Aumann, and Maschler, and others that are game theorists. Maschler is an Austrian Jew. Was an Austrian Jew. Aumann came from Frankfurt. In any case, they organized this conference together with Professor Morgenstern. This was a popular conference--maybe sixty people, and I met--

Anne: Not that many. Maybe thirty were there. That's small.

Harsanyi: Very well, at least thirty. Quite a few people. Some of them of course didn't give any talks. And then the next conference was organized by Aumann and Maschler and some other Israeli game theorists in Jerusalem. That was in '65. Jerusalem was still divided. And after that came a conference which I organized here in Berkeley and that was in '70. That had about forty or fifty.

Anne: Yes, that had at least fifty. And people really muscled their way in there, remember? Gerard Debreu insisted that you should call in a Norwegian.

Harsanyi: Who I didn't know.

Anne: And some other people said, "I am coming whether you invite me or not." [laughter]

Harsanyi: Well, by that time game theory was pretty popular and so it was very hard to not invite people who did any work in game theory.

Ross: And the '70 conference was very fruitful?

Harsanyi: Well, reasonably fruitful, mainly because so many people came together and there were lots of discussions. I think it was reasonably fruitful. But of course those first two conferences were the most important.

Center for Interactive Decision Theory, Jerusalem

Ross: We have to start again and catch up. I would like to divert for just a minute--the two Israelis, you said one was from Germany and one was from Austria.

Harsanyi: Yes.

Anne: But they lived in Israel.

Ross: But they moved to Israel.

Harsanyi: Yes.

Ross: And I assume that was after World War II?

Harsanyi: Yes, of course.

Anne: No. They must have moved before.

Ross: Or did they move when it was still Palestine?

Harsanyi: Yes, I think so.

Anne: Oh, yes. I think so.

Ross: And do they have a flourishing game theory program in Israel now?

Harsanyi: Oh, yes. Very much so. Yes, many new younger game theorists. There is a center for game theory at the Hebrew University which is in Jerusalem. They call it Center for Interactive Decision Theory, meaning that decisions of people depend on each other's decisions and so on. That's really game theory.

Anne: And there are many graduates.

Harsanyi: Many--that is, mainly again Israelis, but others, too. Arabs, also.

Ross: So we had moved up the last time rather haltingly through the seventies.

Harsanyi: Yes.

Ross: Then is there anything to distinguish the eighties, particularly?

Harsanyi: Well, then in the eighties game theory became very common and fewer--there were a few conferences. Some of them I didn't participate, but I think there are yearly conferences at Long Island University, University of Long Island--or Stonybrook was the name, I guess.

Ross: And all this time you were corresponding with Mr. Selten?

Harsanyi: Yes.

Anne: And he spent those two years in Germany in the seventies.

Ross: Yes. Those two years you were doing your own research and meeting with Mr. Selten every day, or once a week?

Harsanyi: Not every day, but--

Anne: Maybe once a week. Oh, you mean when we were in Germany?

Ross: Yes.

Harsanyi: Oh, we met quite often.

#### Holiday Travels in Europe

Anne: Quite often, except every holiday when the university was closed, he would have time to do it, we took off to France, and Switzerland, and Holland, and--

Harsanyi: And England.

Ross: Oh, yes, well, you had Tom then.

Harsanyi: Yes.

Ross: So these were family trips?

Harsanyi: Yes.

Ross: And so you went by car?

Harsanyi: Yes. At first we borrowed Reinhard Selten's car and later we bought our own car.

Ross: And so now when you and Anne had traveled by yourselves when you were at Stanford, you stayed in cheap motels and ate nineteen-cent hamburgers.

Harsanyi: Yes.

Ross: Now with Tom did you camp?

Anne: No. Never.

Harsanyi: Never camped.

Anne: We were too old to camp even then.

Ross: But so you went to parks there, or what did you go to see when you went to France, for instance?

Harsanyi: Well, France: Paris, itself.

Anne: And then the Loire.

Harsanyi: The Loire Valley. Very interesting castles.

Anne: Provence.

Harsanyi: Then we went over to Spain and saw a lot of the Pyrenees and there are some interesting national parks in Spain. So we did a lot of things which would not include game theory but were very interesting touristic attractions.

Ross: Did you meet with any game theorists in England, or weren't they interested in game theory?

Harsanyi: Yes. I visited the London School of Economics and at that time Amartya Sen was there and Karl Popper.

Anne: And Partha Dasgupta. It was [John] Broome, who was in Essex at that time?

Harsanyi: And he was also at the London School of Economics.

Ross: So you did a little work on these holidays?

Harsanyi: Yes. But it was mainly talking to people. But my main work was with Reinhard at the time.

Research and Teaching at University of Bielefeld

Ross: Did you have any responsibilities when you were in Germany, except for doing your own research?

Harsanyi: Oh, yes. I gave regular classes. At first it was difficult because I used to speak very fluent German, but I forgot. But then in a few weeks I relearned it. And when I, in the first few weeks didn't know a word, I asked the students who knew English, so they told me what the German word was.

Ross: And the name of the institution where you were attached in Germany?

Harsanyi: At first it was simply the University of Bielefeld, but in the second year it was the Study for Inter--what was it, Anne?

Anne: Interdisciplinary Research.

Ross: But at the same university, or someplace else?

Harsanyi: The same university--attached to the same university but it was independent.

Ross: Now were these two years consecutive?

Harsanyi: No. No.

Anne: No, the '73-74, and '78-79. And maybe for the eighties we should mention this mathematics paper that you wrote. It came out in '83, Number 64.

Harsanyi: That was my only paper which was purely mathematical and it's called "Mathematics, the Empirical Effects and Logical Necessity." That was actually my main paper about mathematics and the empirical basis. That is number 64. It was published in '83.

Ross: And it was published in *Erkenntnis*?



Harsanyi: *Erkenntnis*. It's a German publication. It means knowledge, or information.

Ross: You wrote that mostly when you were in Germany?

Harsanyi: No, that I wrote in Berkeley.

Ross: Okay. So it was later. We just moved on to the eighties, is that it?

Harsanyi: Yes.

Ross: Okay. So in the eighties.

Harsanyi: What I wrote about were partly game theory, partly welfare economics--mathematical part of welfare economics.

Anne: And then you wrote in the Arrow *Festschrifte*.

Harsanyi: Yes. For instance, there are many papers, but in the Arrow *Festschrifte* I wrote one paper called "Utilitarian Morality in a World of Very Half-hearted Altruists," that is number 74. Essays in honor of Ken Arrow.<sup>6</sup>

Ross: How do you define a half-hearted altruist?

Harsanyi: Well, an altruist who is half-hearted is unwilling to sacrifice his own interests very strongly, but when it is easy for him to do that, he is altruistic. That sort of thing. And then I think that--

Ross: Would your definition of an altruist be someone who always puts the other person ahead of himself?

Harsanyi: Yes. Always or almost always. Very few people. Maybe in some sense. But the half-hearted altruist is who looks normally at his own interest and his family's and to his friends' interests, but when it's easy for him to do, then he's altruistic. And of course I think most people are that way, at least reasonable people are.

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<sup>6</sup>*Social Choice and Public Decision Making: Essays in Honor of K. J. Arrow* (Cambridge University Press, 1986).

Logic Group at UC Berkeley; German Text Translation

- Anne: Then you were invited to join the logic group. That was in the early seventies, I think.
- Harsanyi: Yes.
- Anne: It was a group here on campus.
- Harsanyi: Yes, there I gave this mathematical paper the first time, and there was a debate about it, and in the light of this debate I published this paper.
- Anne: But he had to be invited. It's sort of a closed club.
- Harsanyi: It's really a kind of *egyesület*--intellectual club.
- Anne: Yes. And he was their person to set texts for students to translate from German to English.
- Ross: Tell me about that.
- Harsanyi: Well, it was done in the language exams in Berkeley.
- Ross: I remember them.
- Anne: These were especially for the logic group.
- Harsanyi: Yes, and I set the problem of translating from German, logical text into English, basically a paragraph.
- Anne: And usually he didn't choose a real German, but somebody--a non-German whose work was translated into German, because those were much easier texts than what the real Germans wrote.
- Harsanyi: Well, German logical texts are easy, not like Kant.
- Anne: Well, yes, but those huge sentences.
- Harsanyi: Yes.
- Anne: Whereas if it's translated from English, the sentences are much shorter.
- Harsanyi: Yes, well, I avoided paragraphs which were full of formulas. Those are very easy to translate. You just reach--describe how do you say--copy them and they are the same in English as any

other language. But well, there were verbal arguments about logic and mathematics.

Ross: Do I understand that you were making it easier for the students to pass the exam?

Harsanyi: Well, it wasn't that easy, but it required understanding enough German used in mathematics and logic to be able to answer something. But I didn't want it--it wasn't that hard. I don't remember anybody feeling--

Ross: Hm. [laughs]

Harsanyi: But this was not meant to be hard, just basic knowledge of German.

Ross: Because how much now--and now we're talking about the 1990s--how much is not available in English in game theory?

Harsanyi: Virtually nothing. Everything's available. I remember there was a scandal about this. There was a Chinese student who studied in Berkeley and normally you write a dissertation in one piece, but in mathematics it is permissible if the department agrees to it that you write short articles--but not long--three or four or five of them. If they are good enough, they are accepted as a dissertation.

This Chinese student submitted a very original and good dissertation consisting, let's say, of five translated articles. But he didn't say these were translated; he said that they were his original articles, because of course very few American mathematicians read Chinese journals. The trouble was that he started quarrelling with another Chinese student and he denounced him. Of course then his Ph.D. had to be withdrawn.

#### Utilitarian Theory Writings

Ross: Ugh. I'm glad I wasn't part of that! All right, so we're moving on. As recently as 1995 you're still writing about utilitarian theory?

Harsanyi: Oh, yes.

Ross: I thought you had stopped writing about utilitarian theory?

Harsanyi: No, all the time--

Anne: He started a book manuscript on it.

Ross: Well, that's what I see down here, but I hadn't realized that. I thought that you had changed your interest from that some time earlier.

Harsanyi: No, I was still as interested in both and I always found that if you stick to a very narrow subject, it becomes very boring. So I at least alternated between game theory and sociology-- from a game theory point of view and ethics. Basically also from game theory point of view.

Anne: But the book hasn't been finished yet.

Harsanyi: No, the book hasn't been finished yet.

Ross: Well, but you've written many articles already.

Harsanyi: Yes.

Ross: On utilitarian theory.

Harsanyi: But well, there are several game theorist papers. For instance, several in the new *Palgrave*.<sup>7</sup>

Anne: He wrote about--did you write about value judgments, interpersonal utility comparisons and bargaining?

Harsanyi: Relative to other things.

Ross: So now you've told me that you think it's important to have more than one intellectual interest.

Harsanyi: Oh, yes, well, and of course in this period, a philosophical book review, of *Morals By Agreement*.<sup>8</sup> It's a very short critique of Gauthier, David Gauthier, who's a Canadian, French

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<sup>7</sup>*The New Palgrave: A Dictionary of Economics*, ed. by John Eatwell, Murray Milgate, Peter Newman (London: Macmillan Press, 1987).

<sup>8</sup>David P. Gauthier, *Morals by Agreement* (Oxford: Clarendon Press, 1985).

Canadian, but a philosopher who wrote in English. He basically has very similar views to Rawls,<sup>9</sup> but not exactly the same.

Ross: Well, I've not read anything by him. But maybe the next time we meet, I'll have read that.

Harsanyi: Well, it's very hard to read. And rather obscure.

Ross: Maybe I won't read it then. [laughter] But I didn't find Rawls obscure.

Harsanyi: Well, not obscure, but a little confused.

Ross: Yes, but that's different.

Harsanyi: No, stylistically he's very clear.

Ross: Yes. So you haven't been put off by the thought that utilitarianism is dead?

Harsanyi: Well, it's still very active. It's not the ruling philosophy, but it's still very active. There are many publications about utilitarianism.

Anne: And your book title is a very unorthodox utilitarian theory--

Harsanyi: Yes, another person who wrote articles about utilitarianism is not Rawls but [Robert] Nozick.<sup>10</sup> Nozick is an extreme right wing of the theory--but very right wing. Of course Rawls is rather on the left side.

Harsanyi: [R. B.] Brandt is a main exponent of utilitarianism.

Ross: I don't know Brandt.

Harsanyi: Yes, he has been a professor for many years at Michigan.

Anne: Ann Arbor?

Harsanyi: Ann Arbor, yes. He retired, but I think he's still alive.<sup>11</sup>

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<sup>9</sup>John Rawls, *Theory of Justice* (Cambridge, Mass: Harvard University Press, 1971).

<sup>10</sup>Robert Nozick, *Anarchy, State, and Utopia*, Blackwell, 1974.

<sup>11</sup>Richard Booker Brandt was born in 1910 and died in 1997.

Anne: He might be in his nineties now.

Harsanyi: Yes.

Anne: And he's most similar, of all of them, to yours.

Harsanyi: Yes, but of course as always philosophers disagree, but certainly some of my ideas come from him. But I also criticized Professor Richard Hare. He's an Oxford philosopher, but he had for years a summer position in Florida and his students organized conferences and I attended two of them. In most cases I tried to criticize Hare's views.

Anne: And Hare had the working title of this book, which I like very much: *Hare and Hounds*, but it didn't become the final title.  
[laughs]

Ross: Oh well, sometimes publishers don't have a good sense of humor.

Harsanyi: Yes.

Ross: After all, it might be put in the biology section.

Harsanyi: Right. [laughs]

#### Working at Home in Berkeley

Ross: So now, could we talk a little bit more about your way of working. When did you move into this house?

Anne: At the end of '64.

Ross: So you've been here most of your time in Berkeley?

Harsanyi: Yes. The first year we rented a house on Euclid Avenue.

Ross: And did you build this house or did you buy it?

Harsanyi: No, we bought it. We bought it in '64. Moved in here and it was built I think in '55 or something like that. And it was built on one level unlike many other Berkeley homes because it was built by a doctor whose wife was an invalid in a wheelchair and couldn't climb stairs. We enjoy it. We don't like to climb stairs.

Ross: It's very nice and very rare.



- Anne: Yes.
- Ross: So when you've been at the university all these years, you've taught your classes.
- Harsanyi: Yes.
- Ross: But you didn't use your office for research; you used the dining table here?
- Anne: Yes.
- Harsanyi: Books, I kept some books and some articles which I received from other people, but I mainly used it to interview students.
- Anne: Office hours.
- Harsanyi: Office hours; it was compulsory to have at least one office hour per course and I usually was teaching two courses, so I used it twice a week. But since I used it very little, I permitted a friend to use it for his own purposes.
- Ross: Why did you prefer to work at home?
- Harsanyi: Well, first of all, we have a nice view here and I was subject to no interruptions. The only interruption was, which wasn't really an interruption, when Reinhard Selten was here and we had discussions. And then Tom came in here and asked questions. But I always tried to answer him. And some people get very annoyed with a young guy who interrupts a scientific discussion, but neither I nor Reinhard did.

Tom Harsanyi

- Anne: And Tom quickly learned that it was the way to get his attention to ask a question. [laughs]
- Ross: And he was very receptive to this.
- Harsanyi: Oh, yes. But of course his questions weren't on game theory but many other subjects. [laughter]
- Anne: Reinhard was very good with Tom.
- Ross: What sort of questions did he ask that you couldn't answer?



Harsanyi: Well, very seldom--

Anne: It was mainly they were history.

Harsanyi: History, yes. We once visited Oxford, I think, twice and when we went to a book store--I think Blackwell's, probably? I visited that and Tom was there and he looked at the books and there was one on the nature of the Oriental Question. He was six, and he asked me, "What is the Oriental Question?" And I tried to explain to him.

Anne: Very loudly: "Dad, what's the Oriental Question?" And everybody else was so quiet. But he was more than six years. He was at least eight.

Harsanyi: Eight, really.

Ross: So what did you say to him?

Harsanyi: Well, I told him that it was connected with the decline of the Ottoman Empire and the problem was what navy or military navy ships should be permitted to pass Bosphorus, and this was sometimes a cause for war or small skirmishes. I explained it in a few words. He often asked such questions.

As Anne said, he was mainly interested in history and of course some of the more romantic than scientific history, for instance, the Trojan War. He had a book on the Trojan War.

Anne: He also had all those books on adventurers and discoverers.

Harsanyi: Yes, there was a series about medieval, post-medieval discoverers: Captain Cook and the Spanish and Portuguese navigators and he was very interested. That gave him a special impetus to learn to read at a very early stage because he was very interested in such things.

Ross: Did you ever say to him, "We can look it up?"

Harsanyi: Oh, yes. Very often. But most of the time these were simple questions. For instance, if he asked me what year did, let's say, Henry IV rule, I certainly had to look it up. [laughs] I could have told him very roughly, but certainly not exactly. And he read some I think these were popular descriptions of some Shakespearean plays with various kings and he was very interested in the War of Roses.

Anne: And at that time he had a very excellent memory and he knew all the English names and dates.

Ross: So if you were to look back, you made a very happy marriage and you had a happy life with your child.

Harsanyi: Yes, yes.

Ross: And he now is fully grown and has a Ph.D. in history?

Anne: No. In political science. Historical kind of political science, not the statistical.

Harsanyi: As a child he was very active and read a lot. He read a lot and asked many questions. Now he became quieter and of course he reads what he has to read and some things beyond it, but he doesn't publish enough papers.

Anne: In fact, he didn't publish anything yet, except one or two book reviews. But he just got a Ph.D. a few months ago.

Ross: Well, that's an achievement. It is, indeed. So now, I'd like to hear--you said last time that you'd heard--this of course is just rumor, because the Nobel people never say, that they were thinking about giving a prize to game theorists.

Harsanyi: Yes.

#### The Nobel Prize, 1994

##### Phone Call

Ross: So now tell me about the actual day that you heard that you were chosen.

Harsanyi: Well, it was October 11, '94. We got a phone call at four o'clock in the morning. A gentleman said that--

Anne: Of course I answered the phone. It's on my side of the bed.

Harsanyi: The gentleman said he was the secretary of the Swedish Academy of Sciences and his duty was to call up Nobel Prize winners one or two days before these things were published.

Anne: No, a few hours.

Harsanyi: A few hours. And one of the reasons was that they used to make a decision of this and kept it secret for one or two days and

then it appeared in the press. But of course rumors already came around and there were several distinguished scientists who got congratulations from their colleagues and their students and some even had an honorary dinner or something, and it turned out they didn't get the Nobel Prize.

Ross: Oh!

Anne: So they want to make sure that this is authentic.

Harsanyi: For instance, two Australian medical scientists later did get the prize, but both of them got it a year or two later than the rumor first started. It was very painful and embarrassing.

Anne: And the Australian newspapers reported it. He said he would go to Stockholm, and he didn't get it.

Ross: So they wanted you to be the first to know?

Harsanyi: Yes. And this started before our time, but--

Anne: So then--tell the story that the Swedish-accented voice said, "Would it be possible to talk to Professor Harsanyi?" And I said, "Yes," and then it occurred to me what it must be because it was a Swedish accent. [laughs]

Harsanyi: Yes.

Anne: Then John talked to him and thanked him and he said, "But do you accept?" [laughter] And John said, "Yes, yes, I do accept."

Ross: Had they had anyone turn them down?

Harsanyi: I don't think so, but they had to always ask this.

Ross: So how did he put it to you?

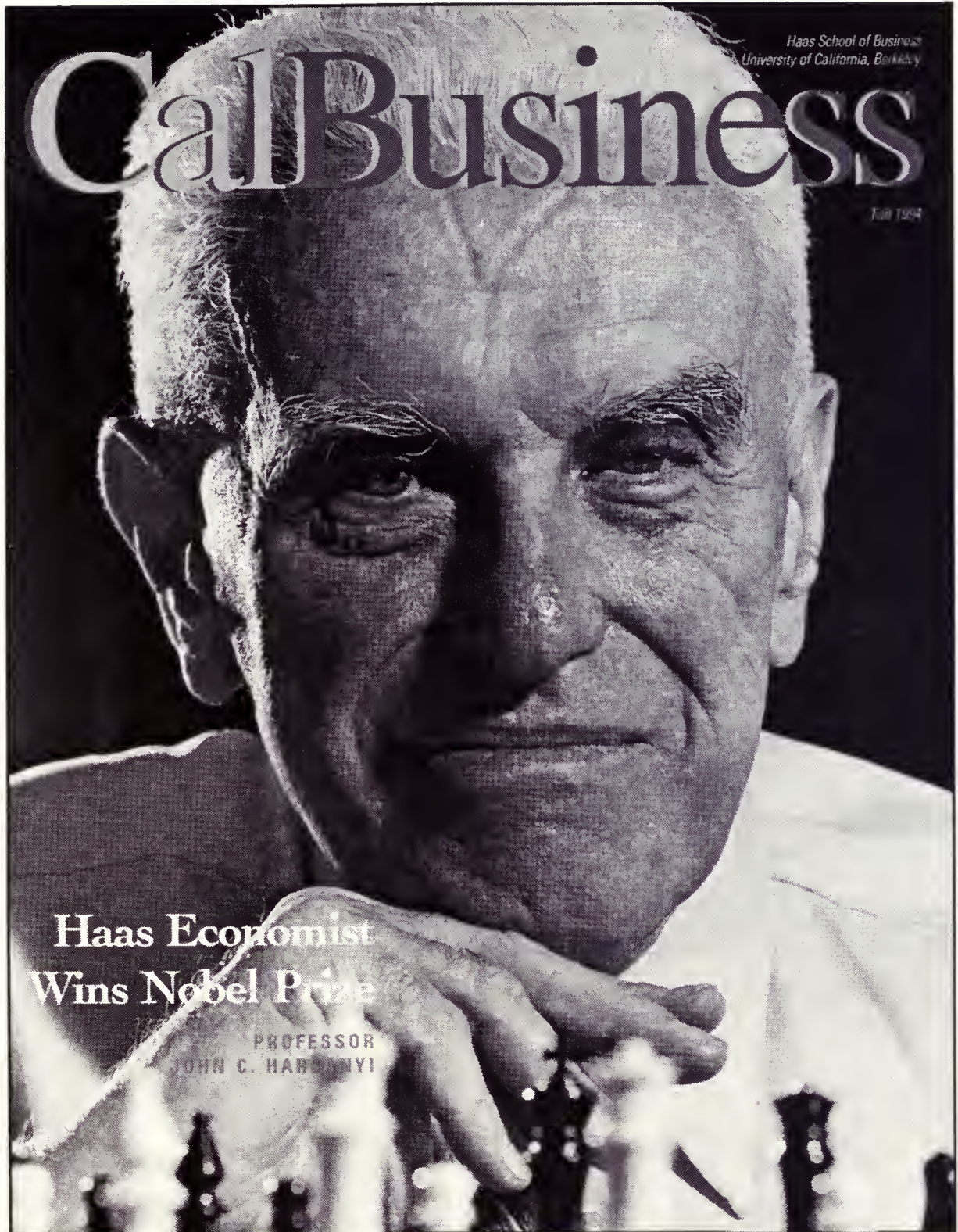
Harsanyi: Well, he simply said that the Nobel Prize committee for economic science decided to give you the Nobel Prize together with two other people--Reinhard Selten and John Nash. And then a few hours later the press got to know and we knew it at four, but at six there was an invasion of newspaper people.

Ross: Right here?

Harsanyi: Yes.

Ross: But you're not a morning type.





CalBusiness, November 1994.

Photo by Blake Sell.





John Harsanyi, John Nash, and Reinhard Selten at the awarding of the Nobel Prize in Economics, Stockholm, Sweden, December 10, 1994.







Virginia Maricochi, John Harsanyi, Tom Harsanyi, and Anne Harsanyi at the Nobel Prize award ceremony, December 10, 1994.



Harsanyi: No, not--

Anne: Well, we called Tom and said what happened and said, now we are going back to sleep and that was the end of our sleep. [laughs] But in the evening I went to the opera and I fell asleep.

Ross: Can you remember what the opera was? [laughter]

Anne: No.

Ross: So then they told the university, I suppose?

Harsanyi: Yes, and--

Anne: But David Irons--have you met him?

Ross: No.

Harsanyi: He used to be the publicity officer of the Haas School of Business.<sup>12</sup>

Anne: He came up here to be of help and that was very useful. He handled these newspaper men and that was very nice. The phone rang all the time and--

Harsanyi: And there was a little celebration on the campus, at the business school but in the open air.

Anne: And you had to give a talk.

Harsanyi: Yes, I had to give a talk. There were no chairs and Anne was very annoyed that she had to stand for hours.

Ross: Well, that's the picture isn't it that shows in the *Cal Monthly*?

Anne: Could be. With the drinking?

Ross: Yes.

Anne: That's on the Faculty Glade. Yes, yes. It was quite a long walk and I was hanging on--that was soon after my operation--I was hanging onto John's hand and the photographer said, "How sweet, they are holding hands." [laughter]

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<sup>12</sup>In April 2000 he is External Affairs Director of IMIO [Institute of Management Innovation and Organization] at the Haas School of Business.

## Ceremony in Stockholm

- Ross: So you had from October to Christmas. Because it's just about Christmas time isn't it that they--
- Harsanyi: December 10.
- Anne: He had to write a long paper for that.
- Harsanyi: Yes, and we were invited to Stockholm, and expenses were paid, but we had to have, how do you say--
- Anne: White tie.
- Harsanyi: White tie.
- Anne: And of course nobody in this country--almost nobody in this country--
- Harsanyi: So they knew this had to be rented and they held some of these ready, but they never fitted.
- Anne: We had to send the measurements.
- Harsanyi: Then they would change it a little--make alterations, so it should fit.
- Ross: Oh, that's hilarious. So they provided you with the white tie. And the tails?
- Anne: Well, they didn't provide. You had to rent it.
- Ross: Yes, yes, but they arranged?
- Harsanyi: Yes, they arranged for it. I think this was paid by us, but most of the other expenses were paid by the Nobel Foundation.
- Anne: Yes, the hotel--
- Ross: And what did Anne wear?
- Anne: Long. Long dress.
- Ross: But your own?
- Anne: Yes. I had it made. It cost a lot of money and we can't even take it off the taxes. [laughs]

Ross: No. What color?

Anne: It was a sort of aqua.

Ross: So now can you tell me a little bit about the ceremony?

Harsanyi: Well, first of all before the ceremony there was a festivity or after. I think before, at the city hall. I think it was before--I should have said, no, this was after. At the ceremony we had to give short papers, but not at the ceremony--afterwards--but at the ceremony, each of us had to make a short speech.

Anne: Just one for the group.

Harsanyi: For the group, yes.

Anne: If there was more than one person, it was the senior of the group and that was you.

Harsanyi: Yes. Had to be a little funny and then--

Anne: One page.

Harsanyi: Yes, then the King personally handed over the diploma that you got the prize.

Anne: A medal and a diploma or whatever they are called.

Harsanyi: Yes. And then there were several other festivities afterwards.

Anne: A big dinner and the Queen was always there.

#### Honorary Degrees and International Invitations ##

Ross: All right, is there anything you'd like to say, again, about those festivities? How long did you spend in Stockholm?

Harsanyi: Maybe ten days, yes.

Ross: And then following that, as I recall, you were toured around the world by the university and shown off, right?

Anne: Well, to Hong Kong, only.

Harsanyi: Yes, the Haas School had a conference in Hong Kong mainly for ex-students of that area. They invited me so that there should be a Nobel Prize winner talking to them. And of course it was very interesting to me to see Hong Kong for the first time. There is one university which was incorporated with our business school and I spent most of my time there, but then I visited several universities in Hong Kong. They didn't very much like it, but I visited the others, too.

Ross: Are they working on game theory?

Harsanyi: Some of them. Somehow Chinese and Japanese students are--many of them have special ability for mathematical sciences, and there was of course interest for game theory even then. They didn't produce many original works, but they read these things. I later got a request to permit some of my--one of my books and several of my papers--to be translated into Mandarin. Of course I happily agreed and I wrote in English introductions to them that I'm very happy that some Chinese scholars and students will be able to read some of my publications.

Ross: You didn't do the translations yourself?

Harsanyi: No, of course. Not quite. [laughter]

Ross: I see that you have an honorary degree from Beijing?

Harsanyi: Yes, I'm invited to visit Beijing, but we haven't had the opportunity yet. But the president of one of the main universities in Beijing visited Berkeley together with three colleagues and they spoke some English. They organized a little conference--a ceremony--to hand me over the honorary doctorate which was permitted by the Council of Ministers.

Anne: Because the registrar of this university sent personally--

Harsanyi: No, I think it wasn't the registrar. It was the president.

Anne: President?

Ross: Because usually in this country, honorary degrees aren't given unless the person is there.

Anne: Yes.

Harsanyi: Exactly, but this was a special case. Reinhard Selten also got an honorary degree in Shanghai. He was perhaps the first. But in my case, they wanted to come here to organize faculty

exchanges with Berkeley; therefore, they came here and I got the honorary doctorate here.

Anne: And also you couldn't go for two or three years because you were sick.

Harsanyi: At that time, I'm not sure.

Anne: Oh, yes, you had this foot infection for two years.

Harsanyi: Oh, yes, I still have--I was sick. But not very sick.

Ross: Not enough to keep you from keeping on working.

Anne: Yes, but he couldn't travel.

Harsanyi: Well, that's okay.

Ross: Now, is there anything else you want to tell me about the post-laureate years?

Anne: Well, you were invited everywhere.

Harsanyi: Yes, I was invited--

Anne: Brazil and Argentina.

Harsanyi: Argentina. And I got an honorary doctorate there.

Anne: France and the Netherlands.

Harsanyi: Yes, Vienna, and Graz. I got some pay, but in Brazil I got especially generous pay. I was invited by the military authorities, but the military authorities maintained many high schools and--

Ross: Oh.

Harsanyi: I was invited to one of these high schools.

Anne: Not university?

Harsanyi: Well, maybe university, yes. College. And the president of the college was a Japanese Brazilian gentleman of rank of general.

Ross: One of the countries is headed by a Japanese.

Anne: Yes. Peru.



- Harsanyi: Peru is--but obviously many Japanese immigrants are there. That's why--to America most Japanese immigrants earlier were very simple people, but these people were highly educated people and often they became high-ranking military officers--presidents or ministers--of these countries, but they maintained their Japanese names.
- Anne: And there were a few places you were invited that you could never make it, like Milano.
- Harsanyi: Also India.
- Anne: Yes, the first invitation came from India.
- Harsanyi: Yes.
- Anne: He didn't go there. You went to Italy. In Italy you were in Emilia Romana. And several times to Hungary.
- Harsanyi: The first time we were invited to Hungary was in May '95, and we went again in '97, which was the last time.
- Anne: So we went to lots of places you were invited to. And then to Australia, in Sydney for an honorary doctorate. We had many friends there, of course. We spent nine years there.
- Harsanyi: Well, really only three years.
- Anne: In Sydney, but nine years in Australia.
- Ross: What year did you retire from the university?
- Harsanyi: In 1990.
- Ross: 1990. So you were free from university responsibilities after the Nobel Laureate to travel around.
- Harsanyi: Yes.
- Ross: I remember once when Anne was driving us past the university, you said something to the effect, and maybe you can remember the exact words, you pointed out your parking space to me. [laughter] Can you remember exactly what you said?
- Harsanyi: Well, what did I say?
- Anne: Probably the first thing they said at the campus, that now you have your parking spot. [Nobel laureates are given a reserved

parking space on campus, a coveted benefit at Berkeley where parking is very limited and costly.]

Harsanyi: Yes, oh, yes.

Anne: And John gave to the Haas School a replica of his Nobel medallion.

Harsanyi: The Nobel Prize consists of some money, and also a gold medal. The gold medal, of course, we put in custody in a bank, but one of the replicas I donated to the lady who helped us to get around in Stockholm. She was a junior diplomat. Very nice lady. She told us always, "Tomorrow you have to be ready at nine-fifteen."

Anne: How to dress.

Harsanyi: Yes.

Anne: For several things that day.

Harsanyi: Lots of patience.

Anne: And the second medal we have at home and the third you gave to Haas.

Harsanyi: And it's exhibited there in the library.

Ross: Oh, I'll have to go around and look.

Anne: We can show you the one we have.

Ross: They gave you three?

Anne: Three replicas, yes. You can buy them for eighty dollars or something.

Harsanyi: And the original. The original, of course, was free, but the replicas had to be paid for. Three was the maximum number you could get. They didn't want to make it very common.

Ross: You could have a poker game with replicas. [laughter]

Harsanyi: Yes.

Anne: But the original weighs a lot more than the replicas.

Ross: Have you ever worn it here?

Harsanyi: No, it's too heavy to wear. [laughs]

Ross: Do you look at it sometimes?

Anne: Yes. I like that. To bring it out.

Ross: Now, what I think I want to suggest is that I try to get this typed up as soon as I can.

Harsanyi: Very good.

Ross: Then spend a little time with Anne going over it first, and then asking you to fix up some of the parts.

Anne: Yes.

Harsanyi: Very good. That will be fine.

#### National Science Foundation Grants

Ross: And then as soon as I can run over the part that I missed, I'll come back for that.

Anne: Yes, and then somewhere you should stick it in that the National Science Foundation for decades gave him--

Harsanyi: Yes.

Ross: Oh, let's just add that now. The National Science Foundation gave you--

Harsanyi: Gave me money. You know, originally they got some money from the American navy, that foundation, and also to Morgenstern. But those monies ran out and then as many of my colleagues applied to the National Science Foundation--at first the National Science Foundation was purely for physical and military sciences, but later they extended to social sciences and I got every year a certain amount of research money for the summer.

Anne: Yes, and it really went on for at least fifteen years. Sometimes that meant he didn't have to teach a quarter or he got the money for summer research.

Harsanyi: And also to publish my papers. Some political journals were very small. And I financed the business school to put covers

on reprints and this made it easier to preserve them. They printed fifty copies, or however many I needed, so I could easily send to my colleagues in other universities a copy.

Anne: And also he once got a grant from the Social Science Research Council.

Ross: SSRC?

Harsanyi: Yes.

Anne: SSRC, yes. Whereas he didn't get the Guggenheim.

Ross: Tough luck.

Anne: Yes. [laughs]

Harsanyi: Yes. Or the MacArthur.

Ross: Okay, well, I think that should sort of wind us up for the day, and then I'll try to get this typed up as quickly as possible.

Anne: Yes, and I'll refine this later. Also, these yearly reports to the Haas School. That's very useful. I mean, he went to so many conferences all of the world. He went to Tokyo--

Ross: Between your records and those at Haas, we should be able to produce a list of publications and attendance at conferences. We can put them in an appendix.



## TAPE GUIDE--John and Anne Harsanyi

*Note: The tapes were mistakenly recorded on slow speed, and had to be re-dubbed onto service tapes for the transcription. This tape guide refers to the tapes as they were originally recorded.*

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## JOHN C. HARSANYI



I was born in Budapest, Hungary, on May 29, 1920. The high school my parents chose for me was the Lutheran Gymnasium in Budapest, one of the best schools in Hungary, with such distinguished alumni as John von Neumann and Eugene Wigner. I was very happy in this school and received a superb education. In 1937, the year I graduated from it, I won the First Prize in Mathematics at the Hungary-wide annual competition for high school students.

My parents owned a pharmacy in Budapest, which gave us a comfortable living. As I was their only child, they wanted me to become a pharmacist. But my own preference would have been to study philosophy and mathematics. Yet, in 1937 when I actually had to decide my field of study, I chose pharmacy in accordance with my parents' wishes. I did so because Hitler was in power in Germany, and his influence was steadily increasing also in Hungary. I knew that as a pharmacy student I would obtain military deferment. As I was of

Jewish origin, this meant that I would not have to serve in a forced labor unit of the Hungarian army.

As a result, I did have military deferment until the German army occupied Hungary in March 1944. Then I did have to serve in a labor unit from May to November 1944.

In that November the Nazi authorities finally decided to deport my labor unit from Budapest to an Austrian concentration camp, where most of my comrades eventually perished. But I was lucky enough to make my escape from the railway station in Budapest, just before our train left for Austria. Then a Jesuit father I had known gave me refuge in the cellar of their monastery.

In 1946 I re-enrolled at the University of Budapest in order to obtain a Ph.D. in philosophy with minors in sociology and in psychology. As I got credit for my prior studies in pharmacy, I did get my Ph.D. in June 1947, after only one more year of course work and after writing a dissertation in philosophy.

From September 1947 to June 1948 I served as a junior faculty member at the University Institute of Sociology. There I met Anne Klauber, a psychology student who attended a course I was teaching and who later became my wife. But in June 1948, I had to resign from the Institute because the political situation no longer permitted them to employ an outspoken anti-Marxist as I had been.

Yet Anne did go on with her studies. But she was continually harassed by her Communist classmates to break up with me because of my political views, but she did not. This made her realize, before I did, that Hungary was becoming a completely Stalinist country, and that the only sensible course of action for us was to leave Hungary.

Actually we did so only in April 1950. We had to cross the Hungarian border illegally over a marshy terrain, which was less well guarded than other border areas. But even so, we were very lucky not to be stopped or shot at by the Hungarian border guards.

After waiting in Austria for our Australian landing permits for several months, we actually reached Sydney, Australia, on December 30, 1950. On January 2, 1951, Anne and I got married. Her unflinching emotional support and her practical good sense have always been a great help to me.

As my English was not very good and as my Hungarian university degrees were not recognized in Australia, during most of our first three years there I had to do factory work. But in the evening I took economics courses at the University of Sydney. (I changed over from sociology to economics because I found the conceptual and mathematical elegance of economic theory very attractive.) I was given some credit for my Hungarian university courses so that I had to do only two years of further course work and

had to write an M.A. thesis in economics in order to get an M.A. I did receive the degree late in 1953.

Early in 1954 I was appointed Lecturer in Economics at the University of Queensland in Brisbane. Then, in 1956, I was awarded a Rockefeller Fellowship, enabling me and Anne to spend two years at Stanford University, where I got a Ph.D. in economics, whereas Anne got an M.A. in psychology. I had the good fortune of having Ken Arrow as advisor and as dissertation supervisor. I benefitted very much from discussing many finer points of economic theory with him. But I also benefitted substantially by following his advice to spend a sizable part of my Stanford time studying mathematics and statistics. These studies proved very useful in my later work in game theory.

In 1958 Anne and I returned to Australia, where I got a very attractive research position at the Australian National University in Canberra. But soon I felt very isolated because at that time game theory was virtually unknown in Australia. I turned to Ken Arrow for help. With his and Jim Tobin's help, I was appointed Professor of Economics at Wayne State University in Detroit. Then, in 1964, I became at first Visiting Professor and then Professor at the Business School of the University of California in Berkeley. Later my appointment was extended also to the Department of Economics. Our only child Tom was born in Berkeley.

In the early 1950s I published papers on the use of von Neumann-Morgenstern utility functions in welfare economics and in ethics and on the welfare economics of variable tastes.

My interest in game-theoretic problems in a narrower sense was first aroused by John Nash's four brilliant papers, published in the period 1950-53, on cooperative and on noncooperative games, on two-person bargaining games and on mutually optimal threat strategies in such games, and on what we now call Nash equilibria.

In 1956 I showed the mathematical equivalence of Zeuthen's and of Nash's bargaining models and stated algebraic criteria for optimal threat strategies.

In 1963 I extended the Shapely value to games without transferable utility and showed that my new solution concept was a generalization both of the Shapley value and of Nash's bargaining solution with variable threats.

In a three-part paper published in 1967 and 1968, I showed how to convert a game with incomplete information into one with complete yet imperfect information, so as to make it accessible to game-theoretic analysis.

In 1973 I showed that "almost all" mixed-strategy Nash equilibria can be reinterpreted as pure-strategy strict equilibria of a suitably chosen game with randomly fluctuating payoff functions.

I also published a number of papers on utilitarian ethics.

I published four books. One of them, *Rational Behavior and Bargaining Equilibrium in Games and Social Situations* (1977), was an attempt to unify game theory by extending the use of bargaining models from cooperative games also to noncooperative games. Two books, *Essays on Ethics, Social Behavior, and Scientific Explanation* (1976), and *Papers in Game Theory* (1982), were collections of some of my journal articles. Finally, *A General Theory of Equilibrium Selection in Games* (1988) was a joint work with Reinhard Selten. Its title indicates its content.

Let me add that in 1993 and 1994 I wrote two, as yet unpublished papers, proposing a new theory of equilibrium selection. My 1993 paper does so for games with complete information, while my 1994 paper does so for games with incomplete information. My new theory is based on our 1988 theory but is a much simpler theory and is in my view an intuitively more attractive one.

I am a member of the National Academy of Sciences, and a Fellow of the American Academy of Arts and Sciences and of the Econometric Society, as well as a Distinguished Fellow of the American Economic Association. In 1965-66 I was a Fellow of the Center for Advanced Study in the Behavioral

Sciences at Stanford. I have an honorary degree of Doctor of Science from Northwestern University. After my retirement from my university, Reinhard Selten edited a volume in my honor with the help of H. W. Brock. It has the title, *Rational Interaction*.

From Les Prix Nobel 1994.

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# Institute Vienna Circle --- Game Theory Conference 1996

## Game Theory, Experience, Rationality -- Foundations of the Social Sciences, Economics and Ethics

### An International Symposium in Honor of John C. Harsanyi

*Club International Universitaire* (Schottengasse 1, 1010 Wien, Austria), June 12-15, 1996

The main topics will include:

- The Historical Framework
  - The Contribution of Oskar Morgenstern
  - The Austrian School of Economics, Marginalism and Utilitarianism
  - The Vienna Circle and the Rational Choice Approach
- Theoretical Foundations
  - Equilibrium Concepts, Equilibrium Refinements and Solution Concepts
  - Descriptive Economics vs. Normative Economics
  - "Unlimited" vs. Bounded Rationality
- Applications to Ethics, Politics and Evolution
  - Game Theory in the Social Sciences (Economic, Sociological and Political): Institutions and the Design of Incentives
  - Special Focus: Game Theoretical Analysis of Social Dilemmas
  - Epistemic Games
  - Game Theory in Biology

Already several highly reputable scientists from all over the world have agreed to participate in the meeting. The proceedings will make up the core of a forthcoming yearbook.

### General Information

The intention of this projected conference is to take stock of the current situation in foundations of game theory after the award of the Nobel Prize in economics to John F. Nash, John C. Harsanyi and Reinhard Selten in 1994. A debate concerning the foundations of their discoveries and on applications of game theory is particularly appropriate at this time.

The choice of Vienna as the place to hold such a meeting is to commemorate the locale where game theory and related approaches to social theory had their roots. Vienna is the city of Carl Menger and Eugen Böhm-Bawerk, founders of the Austrian school of economics, the city where Oskar Morgenstern and Karl Menger did their early work, the city where John von Neumann repeatedly visited, the city where Paul Lazarsfeld developed the beginnings of mathematical sociology. Here the Vienna Circle worked, whose philosophical attitude embodies the orientation leading to the recent discoveries in game theory. Hence attention is drawn also to the Vienna Circle's positions on social theory and ethics -- all the more since those positions left many problems open.

The main aim of the meeting is to investigate and critically compare differing attitudes towards rationality conceptions, on the one hand, and the (practical) feasibility of strategies on the other hand, with attention also paid to applications in empirical theory. We call attention particularly to the heavy reliance on Bayesian rationality in game and decision theory and to criticism of this by adherents of bounded rationality.

Finally, we want to call attention to particular applications of game theory of relevance for methodology and epistemology of science, particularly dynamic games, i.e. those modelling evolutionary processes, as well as knowledge games and closely related language games.

### Schedule



- **Wednesday, June 12, 1996** Registration (Bank Austria)

**19.00 Opening**

Reinhard Selten (University of Bonn): *Game Theory, Experience, Rationality*

- **Thursday, June 13, 1996**

Time	Paper
9.00-9.40	Thomas Schelling (University of Maryland), <i>Rationally Coping with Lapses from Rationality</i>
9.40-10.20	Dennis Mueller (University of Vienna), <i>Information and Uncertainty: Power, Profits and Morality</i>
10.20-10.40	<b>Coffee Break</b>
10.40-11.25	Mark Machina (UC San Diego), <i>Local Probabilistic Sophistication</i>
11.25-12.05	Ken Binmore (University College, London), <i>DeKanting Harsanyi</i>
12.05-14.00	<b>Lunch</b>
14.00-14.40	Richard Jeffrey (Princeton University), <i>Agreeing to Disagree: Harsanyi and Aumann</i>
14.40-15.20	Anatol Rapoport (Toronto), <i>Spin-Offs from Game Theory to Social Psychology, Theoretical Biology and Moral Philosophy</i>
15.20-16.00	Werner Leinfellner (Technical University of Vienna), <i>Game Theory, Sociodynamics, and Cultural Evolution</i>
16.00-16.25	<b>Coffee Break</b>
16.25-16.55 (parallel)	John D. Hey (York), <i>Do Rational People Make Mistakes?</i> Erik van Damme (Tilburg), <i>Endogeneous Stackelberg Leadership</i>
16.55-17.35 (parallel)	Brian Skyrms (UC Irvine), <i>Bayesian Subjunctive Conditionals in Bayesian Games</i> Antonio Camacho (University of Illinois, Chicago), <i>Variability, Uncertainty, and the Emergence of Firms and Markets</i>
<b>Evening Lecture</b> 19.15 (Bank Austria)	John C. Harsanyi (UC Berkeley), <i>A Preference-Based Theory of Well-Being and a Rule-Utilitarian Theory of Morality</i>
20.00	<b>Buffet</b>

- **Friday, June 14, 1996**

Time	Paper
9.00-9.40	Robert Aumann (Hebrew University of Jerusalem), <i>Güth's Ultimatum Game</i>
9.40-10.20	Peyton Young (Johns Hopkins University), <i>A Social-Evolutionary Explanation of Norms of Justice</i>
10.20-10.40	<b>Coffee Break</b>
10.40-11.25	Karl Sigmund (University of Vienna), <i>Contribute Tit for Tat</i>
11.25-12.05	Ulrike Leopold-Wildburger (University of Graz), <i>Experimental Economics -- On the Way to an Explanation of Limited Rationality</i>
12.05-14.00	<b>Lunch</b>
14.00-14.40 (parallel)	Immanuel Bomze (University of Vienna), <i>Uniform Barriers and Evolutionary Stable Sets</i> Lucian Kern (Munich), <i>War, Crimes, and Collaboration: Three Dilemmas</i>
14.40-15.20 (parallel)	Josef Hofbauer (University of Vienna), <i>Dynamic Approaches to Game Theory</i> Eckehart Köhler (University of Vienna), <i>Gödel on Rationality</i>
15.20-16.00 (parallel)	Robin Pope (Univ. of New South Wales), <i>The Fundamental Role of Time in Decision Making Under Risk</i> Rainer Hegselmann (University of Bremen), <i>Modelling Social Dynamics in Cellular Automata</i>
16.00-16.25	<b>Coffee Break</b>
16.25-16.55 (parallel)	Andrew Schotter (NYU), <i>Does Game Theory Predict Well for the Wrong Reason? An Experimental Examination</i> Werner Güth (Humboldt University Berlin), <i>Trust Me Once, Twice,... or Never! An Indirect Evolutionary Analysis</i>
16.55-17.35 (parallel)	Jaakko Hintikka (Boston University), <i>Where do Strategies Come From?</i> Johann Götschl (University of Graz), <i>Experience and Rationality in John Harsanyi's Utilitarian Theory</i>
<b>Evening Lecture</b> 19.15-20.00 (Bank Austria)	Peter Schuster (University of Vienna), <i>Dynamics of Molecular Evolution and Game Theory</i>

- Saturday, June 15, 1996

<b>Time</b>	<b>Paper</b>
9.00-9.40	Edward McClennen (Bowling Green University), <i>Title to be announced</i>
9.40-10.20	Isaac Levi (Columbia University), <i>Prediction, Bayesian Deliberation and Correlated Equilibrium</i>
10.20-10.40	<b>Coffee Break</b>
10.40-11.25	Julian Nida-Rümelin (Göttingen), <i>Structural Rationality in Game Theory</i>
11.25-12.05	Daniel Hausman (University of Wisconsin), <i>Rationality and Knavery</i>
12.05-14.00	<b>Lunch</b>
14.00-18.00	<b>Contributed Papers</b>
Section I	
	Anna Maffioletti (Torino), <i>Reaction to Uncertainty: An Experimental Analysis of its Sensitivity to Representation and Information</i>
	Gianna Lotito (Torino), <i>The Model of Resolute Choice in Interaction: a Qualitative Experiment</i>
	Jonathan Köhler (York), <i>Making Saving Easy: An Experimental Analysis of Savings Decisions</i>
	Daniela di Cagno (Rome), <i>The Link Between Economic Efficiency and Decentralization in Credit Markets: Experimental Evidence</i>
	Emanuela Scubba (Rome), <i>The Evolution of Behavioural Rules in Financial Markets</i>
	Christian Seidl (Kiel), <i>Utility and Choice Anomalies Reconsidered</i>
	Arthur Merin (Stuttgart), <i>Dialogue as a Tacit Bargaining Situation: Empirical Consequences for Semantics of Natural Languages</i>
Section II	
	Thomas Russell (UC-Santa Clara), <i>The Rationality Hypothesis in Economics: From Wall Street to Main Street</i>
	Karl Schlag (Bonn), <i>On the Evolution of Imitative Behavior</i>
	Ludwig von Auer (Kiel), <i>Dynamic Choice Mechanisms</i>
	Guido A. Rossi (Torino), <i>Associativity: a Cornerstone of Decision Making</i>
15.30-16.00	<b>Coffee Break</b>
	Peter Hammond (Stanford), <i>Consequentialism and Bayesian Rationality in Normal Form Games</i>
	Klaus Nehring (UC-Davies), <i>Fundamental Agreement: A New Foundation for the Harsanyi Doctrine</i>
Section III	
	Ross Cressman (Waterloo), <i>The Dynamic (In)Stability of Backwards Induction</i>
	Frank Drieschner (Bremen), <i>A Cooperative ESS for a Finitely Repeated PD-like Dilemma</i>
	Arno Riedl (Vienna), <i>Wage Bargaining: Voice and Organization Costs May Lead to Social Partnership</i>
	Henry Tulkens (Louvain), <i>The Core of an Economy with Multilateral Environmental Externalities</i>
	Pierre Livet (Aix), <i>Mutually Confirmed Minimal Rationality</i>
	Johann Mitlöhner (Vienna), <i>Understanding and Simulating Evolutionary Games in Terms of Adaptive Modelling and Artificial Life</i>

## Registration

ATS 1600,-- (950,-- for students) includes the proceedings.

Members of the Vienna Circle Institute may attend the conference without charge.

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Scientific Organisation: Werner Leinfellner, Eckehart Köhler, Michael Stöltzner

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## LIST OF PUBLICATIONS

**JOHN C. HARSANYI**

December 1997

**A. Books**

- A<sub>1</sub>. Essays on Ethics, Social Behavior, and Scientific Explanation. With Foreword by Kenneth J. Arrow. Dordrecht, Holland: D. Reidel, 1976. xvi + 262 pp.
- A<sub>2</sub>. Rational Behavior and Bargaining Equilibrium in Games and Social Situations. Cambridge, England: Cambridge University Press, 1977. x + 314 pp.  
Paperback edition in 1986.
- A<sub>2</sub>'. Comportamento Razionale e Equilibrio di Contrattazione. Milano, Italy: Il Saggiatore, 1985. xxx + 475 pp. (Italian translation of A<sub>2</sub> by Simona Morini.)
- A<sub>3</sub>. Papers in Game Theory. Dordrecht, Holland: D. Reidel, 1982. xii + 258 pp.
- A<sub>4</sub>. A General Theory of Equilibrium Selection in Games (joint work with Reinhard Selten). With Foreword by Robert Aumann. Cambridge, MA: MIT Press, 1988. xiv + 378 pp.
- A<sub>5</sub>. L'utilitarismo (Utilitarianism). Italian translation by Simona Morini. Milano, Italy: Il Saggiatore, 1988. xxix + 169 pp.

**Book MS in Progress**

- A<sub>6</sub>. Morality, Equality, and Individual Excellence: A Somewhat Unorthodox Utilitarian Theory.

**B. Journal Articles**

1. "Cardinal Utility in Welfare Economics and in the Theory of Risk-taking," Journal of Political Economy, 61 (1953), 434-435. Reprinted in A<sub>1</sub>.
2. "The Research Policy of the Firm," Economic Record, 30 (1954), 48-60.
3. "Welfare Economics of Variable Tastes," Review of Economic Studies, 21 (1953-54), 204-213.
4. "Cardinal Welfare, Individualistic Ethics, and Interpersonal Comparisons of Utility," Journal of Political Economy, 63 (1955), 309-321. Reprinted in A<sub>1</sub>.

5. "Approaches to the Bargaining Problem Before and After the Theory of Games: A Critical Discussion of Zeuthen's, Hicks's and Nash's Theories," Econometrica, 24 (1956), 144-157. Reprinted in A<sub>3</sub>.
6. "On Incentives to Forecasters and to Decision Makers Under Uncertainty," Cowles Foundation Discussion Paper, 48 (1958).
7. "Ethics in Terms of Hypothetical Imperatives," Mind, 67 (1958), 305-316. Reprinted in A<sub>1</sub>.
8. "A Bargaining Model for the Cooperative n-Person Game," Ch. 17 in A. W. Tucker and R. D. Luce (eds.), Contributions to the Theory of Games, 4. Princeton, NJ: Princeton University Press, 1959. 325-355.
9. "Explanation and Comparative Dynamics in Social Science," Behavioral Science, 5 (1960), 136-145. Reprinted in A<sub>1</sub>.
10. "Popper's Improbability Criterion for the Choice of Scientific Hypotheses," Philosophy, 25 (1960), 332-340. Reprinted in A<sub>1</sub>.
11. "Theoretical Analysis in Social Science and the Model of Rational Behavior," Australian Journal of Politics and History, 7 (1961), 60-74.
12. "On the Rationality Postulates Underlying the Theory of Cooperative Games," Journal of Conflict Resolution, 5 (1961), 179-196. Reprinted in A<sub>3</sub>.
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*John C. Harsanyi*  
*1920 - 2000*

***A Celebration of  
John C. Harsanyi's Life***

*The Faculty Club  
University of California  
Berkeley Campus*

*August 31, 2000  
4:00 pm  
Followed by a brief reception*

### ***Welcome***

*Frederick Balderston*

Professor Emeritus, Haas School of Business  
University of California, Berkeley

### ***Remarks***

*Laura D'Andrea Tyson*

Dean, Haas School of Business,  
University of California, Berkeley

*Kenneth Arrow, Nobel Laureate*

Professor, Department of Economics,  
Stanford University

*Reinhard Selten, Nobel Laureate*

Professor, Rheinische  
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*Tom Harsanyi*

Lecturer in Social Studies,  
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December 2000

## INTERVIEWS ON THE HISTORY OF THE UNIVERSITY OF CALIFORNIA

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Marion Ross

B.A., Mills College

Ph.D., University of California, Berkeley; Economics

Instructor, assistant professor, University of Michigan, Flint College, 1956-1959.

Assistant professor, associate professor, professor of Economics, Mills College, 1959-1992; Interim dean of faculty, 1990-1992.

Visiting professor, Cambridge University, UC Berkeley, and San Francisco State University, Academic Visitor at The London School of Economics and Political Science.











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