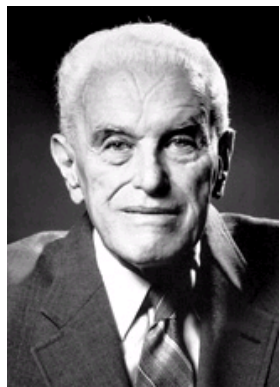




John C. Harsanyi

The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 1994

Autobiography



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.

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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. The Nobel Prizes 1994*, Editor Tore Frängsmyr, [Nobel Foundation], Stockholm, 1995

This autobiography/biography was written at the time of the award and later published in the book series *Les Prix Nobel/Nobel Lectures*. The information is sometimes updated with an addendum submitted by the Laureate. To cite this document, always state the source as shown above.

John C. Harsanyi died on August 9, 2000.

