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## BOOK REVIEW



**Abu N. M. Wahid Edited**, *Frontiers of Economics, Nobel Laureates of the Twentieth Century, The Economics Nobel Prize at a glance (1969 – 1999)*, (Greenwood Press, Westport, Connecticut, London, 2002, xxxi +422, Hardcover \$\_\_\_) ISBN0-313-32073-

Tanvir A. Khan  
Independent University, Bangladesh

There is always a reason to produce a volume which might end up as a successful and celebrated work on the frontiers of a specific discipline and would help the lay audience immensely. This volume commenced with the concept that the contributions of the economics Nobel laureates would be equally and easily understandable to economists and non-economists alike. Instead of a one person project, it became an anthology. Thanks to the Editor to have done an immensely good job, although belated.

Economics was added as a special discipline in 1969 and the funds do not come from the Foundation that was established by Alfred Nobel in 1900 following the famous will that he signed in 1895. It comes from an endowment formed basically from the generous donations by the Central Bank of Sweden. The award officially bears the name of the Bank of Sweden. However, it is administered with the same rules, criteria, standards and principles as the original Nobel Prize in the five other fields. It cannot be awarded posthumously. The monetary value of the economics Nobel Prize is similar to other disciplines. The value of the award was 150,000 Swedish crowns. It was given a tax-exempt status by the Swedish Government in 1946. There has been a significant jump from 1969 where the first Laureates received 375,000 Swedish crowns and by 1999 it increased to 7,900,000 Swedish crowns.

Forty-four (44) Economists won the Nobel Prize from 1969 till 1999. Nineteen (19) were Americans by birth. Five (5) of the Nobel Laureates are/were of the British origin. Three (3) laureates were born in Canada. Two (2) laureates each were born in Russia, Netherlands, France, Norway and Sweden. One (1) each was born in Ukraine, Austria, Germany, Hungary, India, Italy and St. Lucia.

Based on expert opinions, the final selection follows the short-listed candidates. Every year the final choice is made in the "... face of tremendous pressures emanating from different quarters. Sometimes, the candidates themselves become 'shameless self-promoters'" (Wahid: 6).

It has been shocking to observe that some of the deserving economists "such as Joan Robinson, Harry Johnson, William Baumol and others did not get this award" (Wahid: 6).

The preference to older economists receiving this prestigious award has been subject to criticism. "The average age of the economics Nobel laureates is nearly seventy. Most of the laureates receive the award for their contributions made some thirty years earlier" (Wahid: 7). A few notable economists observed that this trend should be changed.

A new discipline emerged with the intermediation between mathematics, statistics and economics and "for lack of a better name, may be called *econometrics*" (Wahid: 10). In short, Ragnar Frisch is credited with the coining of the term in 1926, and most give him credit for the "first widespread use of the terms macroeconomics and microeconomics in 1933" (Wahid: 10). His contribution to micro and macroeconomics with its fundamental aspects and early direction are hard to overstate and in addition his contribution to the methodological development of the economic quantitative science, econometrics is even harder. Frisch's "pioneering efforts in quantitative economics were born out of necessity and raised by his mathematical and statistical prowess" (Wahid: 12).

Strict government control of the economy was a necessity "in order to avoid 'feast and famine' chaos. This Frischian legacy still prevails in Norway where the government's share of GDP is close to 60 percent and the regulation of the economy is persuasive" (Wahid: 15).

The direction to modern economics was initially given by Frisch together with Irving Fisher and Joseph Schumpeter who "charted a new course for economics away from descriptive institutional analysis and toward more general scientific principles of theory building and quantitative proofs" (Wahid: 16).

Jan Tinbergen's background in physics assisted his "groundbreaking development of quantitative-dynamic models by applying mathematical and statistical methods to economic analysis" (Wahid: 20). The Econometrics Society was founded in the 1930s by Jan Tinbergen, Ragnar Frisch and Irvin Fisher. "Cobweb Theorem" was the discovery of Tinbergen.

Paul Samuelson has been called "a wunderkind, labeled an *enfant terrible* emeritus, and referred as the Paganini of economics" (Wahid: 28). In 1939, Samuelson provided the framework while mediating a dispute between two of his teachers, Jacob Viner and Gottfried Haberler, on the costs and value of free trade.

It still remains the standard analysis of the welfare gains from free trade. He describes himself as an 'eclectic economist,' "blessed with abundance of interesting problems" and "addicted to writing". His prodigious talent "produced about one scientific paper a month over a long career" (Wahid: 35).

The methodological steps of a research project have been described by Kuznets "as moving from measurement to estimation to classification to explanation to speculation" (Wahid: 38). The debatable issues of social philosophy and empirical problems have been addressed by Simon Kuznets "involving national income estimates and product measurement" (Wahid: 39). He distinguished between "the gross and net national income and advanced the arguments and methods to deal with the concepts of market value, economic life and depreciation" (Wahid: 39).

It is observed that amidst the emergence of econometrics and the rise of Keynesianism, Simon Kuznets's intellectual growth took place. He was neither an econometrician nor a Keynesian. "He was far more influenced by Mitchell's Institutionalism – as elucidated in his 1930 works on economic methodology" (Wahid: 40).

The doctoral dissertation of Kenneth Arrow '*Social Choice and Individual Values*' was published in 1951. The thesis "raised questions and controversies that, to date, remain unresolved" (Wahid: 46). Jacob Marschak and Tjalling Koopmans were the mentors who "stimulated Arrow's mathematical aptitude and directed his quantitative talent to develop theoretical economics" (Wahid: 46).

Nobel Laureates like Kuznets, Leontief, and Myrdal "denounced the use of high-level mathematics by Arrow, Debreu, and Samuelsson" (Wahid: 52).

John Hicks shifted his interests from mathematics and towards politics, philosophy and economics. His performance in college was quite average and he observed that "I finished with a second-class degree and no adequate qualifications" (Wahid: 55). Market forces had a clear hand in Hick's career and he was advised that economics was an expanding industry and if he went that way there would be a better chance of employment.

The Hicks-Allen paper laid the foundation for the notion of cardinal utility that it could be quantified on a cardinal scale and could be measured in units called "utils". The earlier concept of ordinal utility was challenged.

Apart from the analysis of the IS-LM, Hicks and Keynes had important differences in their modeling approaches. "Hicks had a flex-price model under perfectly competitive conditions" and in "Keynes' model, prices are relatively sticky and the level of wages was determined exogenously" (Wahid: 59). The components of Hick's tool kit are the 'IS-LM diagrams, the indifference curve analysis, the compensated demand curve, the equivalent variation measure of welfare change and the flex/fix model" (Wahid: 61).

Wassily Leontief's concern was not restricted to his criticism of the neo-Cambridge school. His 1947 article reviews both Keynes' and classical approaches with this conclusion: "The liberal economist of the past century was prone to overlook the troublesome distributive aspects of economic change. Keynes, as Karl Marx before him did well in pointing out this indeed most serious omission. They seemed to press, however, for reconstruction of the whole foundation in order to mend a leaky roof" (Wahid: 65).

The 1930s and 1940s saw Friedrich Hayek involved "in a war of words and ideas with the Marxist economists Maurice Dobb and Oscar Lange over the possibility of central planning" (Wahid: 77). It is important to note that Hayek does not criticize the Marxist position from the usual static equilibrium approach. Rather "he points out the tremendous amount of information that would be required, the difficulty of formulating and solving the correct system of equations .. and the impossibility of such a price planning system to adjust to constant change" (Wahid: 78).

Hayek may be regarded as a forerunner of Milton Friedman and monetarism. It appears "that Hayek underestimated both the analytical power of Keynesian theory and its attraction to policymakers faced with high unemployment" (Wahid: 78). Hayek was relegated to the wilderness, and Keynesian economics was triumphant from 1936 to the 1970s until the emergence of Margaret Thatcher and Ronald Reagan. Hayek also established himself as a solid authority on legal theory, political and social philosophy and cognitive psychology (Wahid: 81).

Gunnar Myrdal is the only economics Nobel laureate whose wife was also glorified with the same prize for peace. She was recognized for her "commitment to the service of disarmament" (Wahid: 84). Myrdal was a pioneer in introducing and differentiating the concepts of ex-ante and ex-post in economic analysis where the former refers to anticipated values of a given economic variable and the latter the realized (or actual) value. Like Keynes, Myrdal was a fiscal conservative and advocated using counter cyclical fiscal policy measures. He also influenced public policy in the area of social reform. To reverse a declining birth rate in Sweden, he recommended larger tax deductions for families with children, subsidies for expectant mothers, public housing, school lunch programs, free public daycare facilities, aid to orphans, widows and disabled men and so on. This was a model for social reform for other European countries as well. Myrdal did not have as much influence on the mainstream economic theory as Arrow, Debreu and Samuelson but left a towering impact on the political, institutional, moral and ethical aspects of economics.

Leonid Kantorovich received his doctoral degree in mathematics from Leningrad University in 1935. He took a consultancy with the laboratory of the Plywood Trust in solving some optimization problems where he got interested in

economics. Until 1975 he was the first and only laureate from the then Soviet Union. He became an economist by accident after the consultancy. Decentralization was the demand of the time in former Russia and the Kantorovich's contributions were thus critical.

Initially, Tjalling Koopmans concentrated on Mathematics but later he considered becoming a psychiatrist. His training in mathematics led him ultimately to theoretical physics. The Great Depression in the 1930s influenced him to the field of economics. The first economics book that he read was Karl Marx's *Das Capital*. It had an everlasting effect on him so much so that he tried to make the fundamental part of his economic theory independent of any institutional-setting. He stated: "I was halfway with math and halfway with Physics when I found economics more challenging" (Wahid: 100). Koopmans married an economics student, Truus Wannigen, who he had tutored and praised her as an economic bibliographer and an advisor on important decisions right after winning the Nobel prize. He enjoyed playing the violin and occasionally wrote musical compositions. He made conscious effort to minimize the communications gaps between the mathematical and non-mathematical economists.

Milton Friedman majored in Mathematics and wanted to become an actuary, a dream that did not materialize. Then he became interested in economics. He firmly believed that "economic models should be judged by the ability of their predictions, not by the soundness of their assumptions" (Wahid: 114). He was not only a brilliant economist and a great scholar but also a terrific teacher in the classroom. "His clarity of exposition and power to persuade and convince people is unparalleled. He is one of the most articulate men in speech and writing the economics profession has ever produced" (Wahid: 115).

James Meade's early education was concentrated on Greek and Latin. Until 1928 his interest to study philosophy, politics and economics widened and the high unemployment in England triggered his interest in economics. He is one of the strong proponents of IMF, World Bank, GATT now turned WTO. He integrated economic theory with policy instruments. Meade, Robertson and Fleming "constantly provided Keynes with information and arguments so that he could support the agreements drawn up at the Bretton Woods conference in 1944" (Wahid: 121).

Bertin Ohlin was very fond of mathematics from boyhood as he enjoyed computing the cost of cakes that his mother used to bake at home. His concentration was mathematics, statistics and economics during his undergraduate studies. While continuing teaching at Stockholm University in later life, Ohlin led the Liberal Party of Sweden, the leading opposition party of the country, for more than twenty years. He left many positive impacts on liberal Swedish politics. He



has also demonstrated similarities and differences between interregional (intra-national) and international trade, and the connection between international trade and the location of industries ([www.nobel.se](http://www.nobel.se)).

Herbert Simon developed a keen interest in science and mathematics and was mentored by one of his maternal uncles who was a student of economics. He took courses in economics, mathematics, physics, statistics, and logic at the University of Chicago. He wrote a term paper on organizational decision which brought him a research assistantship from Clarence Ridley in municipal administration. When Simon heard about the award, he himself was equally surprised as was the traditional economists. He is best known not as economist, but as a pioneering expert in artificial intelligence, a decision scientist, an applied mathematician, a cognitive psychologist, a philosopher, and a political scientist. An introverted and bookish child, Simon was proud of his ability to learn on his own.

Arthur Lewis completed his PhD in industrial economics. Lewis served as an adviser to the United Nations, the prime minister of Ghana, and as deputy director of the UN Special Fund and the vice chancellor of the University of the West Indies. In the early 1970s, he set up the Caribbean development Bank. He married Gladys - a Grenadian woman in 1947 (Wahid: 138). The assumption of zero marginal productivity of labour, however, is not essential for the functioning of the Lewis' model. "Amartya Sen analyzes this possibility very convincingly. The fact that labour productivity is negligibly low in traditional agriculture, a fact Lewis emphasized and Schultz recognized, is sufficient to provide the mechanism outlined in the model for transferring low-wage labour for use in the industrial sector" (Wahid: 144). Lewis' works have survived continuous scrutiny for almost half a century and they will occupy the centre stage in development economics.

Theodore Schultz received his M.A. and Ph.D. degrees in 1928 and 1930 respectively in agricultural economics. After the World War II, his research interests shifted to the broader issues of development economics. He has given a concrete shape to his theory of "human capital". "According to his theory, the educational level of a population governs its ability to make use of information and technology, for development as well as for redevelopment" (Wahid: 148).

Lawrence Klein had solid training in mathematics, English and history. At MIT, he worked closely under Paul Samuelson where he did his graduate education and "... systematically transformed the fundamentals of Keynesian economics into a larger set of equations" (Wahid: 157). Klein gained mastery over econometrics and econometric modeling. Klein completed the challenging job of the econometric model of the US economy with a great deal of originality started by Jan Tinbergen. In 1947, an econometric model for the Canadian economy was constructed by Klein. His work has been responsible for shaping the development of economics from an abstract, academic science toward a more

practical, predictive science. Klein's book, *The Keynesian Revolution* clarified and extended Keynes' seminal work in *The General Theory* to the entire economics profession and has ultimately served to popularize and elevate Keynesian economic principles and policies to the most dominant intellectual force. Klein's works have touched the lives of people regardless of their political, racial or religious affiliations. Economists, either Keynesian or non-Keynesian, from developed or underdeveloped countries, from capitalist or communist countries, praise and admire him.

The idea to apply for a Harvard scholarship came from James Tobin's father. Tobin started his graduate studies in economics at Harvard in 1939. Subsequently he started his graduate studies at Harvard in Economics. His years in Washington introduced him to the inadequacies and inefficiencies of the federal and state welfare programs. In particular, he has defended the Keynesian position in various debates with the Monetarists, especially with Milton Friedman. "He has written extensively on stabilization policies and has been involved in debates regarding the conduct of monetary policy. He has been a strong advocate of an activist policy by the government" (Wahid: 169).

George Stigler entered the University of Chicago and completed his PhD in economics in 1938. Frank Knight was his thesis supervisor. He was also inspired by his fellow students Allen Wallis and Milton Friedman. From the late 1930s he worked on price and cost theories and various topics of industrial organization. The press was interested in Stigler's comments on President Reagan's new initiatives in the areas of tax cuts and government spending rather than on his erudite deliberations. Stigler's reaction was critical and he termed supply side economics as "a gimmick or a slogan," and he opined that the economy was "bumping along" at the bottom of a full-blown "depression" (Wahid: 172). Stigler remained firm in his insistence of government noninterference. The public and the press make unrealistic demands on government and next they would be expected to prevent earthquakes and meteoric showers. Stigler made mathematics serve economics without turning into its servant.

Gerard Debreu developed a profound interest in mathematics under the influence of his teachers, Henri Cartan and N. Bourbaki. He is the centre of attraction at the University of California-Berkeley. Gifted students and colleagues from all over the world have been drawn because of him. His well-attended lectures have been described as exceptional for their mathematical rigour and virtual lack of verbal explanation. The most important contribution of Debreu to the field of economic theorizing was precisely the awareness of the discipline toward the demand for axiomatization (Wahid: 188).

Richard Stone did not have much interest in mathematics. In 1930, his father went to Madras, India to become a High Court judge. Stone spent one year in

India where he started with law and then switched to economics. His father was unhappy but Stone thought economics would help him understand the Great Depression better. At King's College he came in close contact with two great economists, Colin Clark and John Maynard Keynes. He was the director of the newly established department of applied economics at Cambridge. He was knighted in 1974. The "Program for Growth" (Wahid: 196) where Stone was devoted worked on the basis of a mixed economy with a competitive private sector and various forms of state intervention or control. Any adjustment or treatment depends on a sound diagnosis. His national accounting methodology had set a trend which has already seen the beginning of the development of green accounting.

Franco Modigliani studied medicine first but was unable to continue due to his intolerance towards the sufferings of sick people. Instead, he decided to study law and he received a PhD in 1939 from the University of Rome. Eventually, his interest shifted to economics due to the Great Depression. He received a PhD in social science in 1944. "His major contribution was to show clearly the relation between the Keynesian economics, classical economics and monetary economics" (Wahid: 200) Modigliani's lifetime contribution is said to have made managing a modern economy easier for policy makers and governments around the world, which has so much complexities and uncertainties.

The works of Swedish economist Knut Wicksell influenced James Buchanan's public choice theory of economics. The collaboration with Gordon Tullock led to *The Calculus of Consent* which was first published in 1962. They both believed that mathematics should only be used as a tool in economics and not as an end in itself. He had a brief flirt with libertarian socialism. He is a strong believer in individualism arguing that only the individual knows what is best for him or her. Giving as much freedom of choice to the citizen as possible is rooted in the classic book *The Wealth of Nations* by Adam Smith written in 1776, which many consider as the founding father of economics. Buchanan advocates constructive social cooperation which he believed is the only way in which everybody can gain. In his Nobel lecture, "he condemns economist who have gotten too preoccupied with the mathematics and in the process lost sight of what economics is all about" (Wahid: 211).

Robert Solow began his university education with a scholarship to Harvard at the age of sixteen. He rose to the rank of full professor at the age of thirty-four. He worked as a senior economist during the Kennedy administration. He once commented that had he neglected his students, he could have written 25 percent more scientific papers. Solow's technical contributions with Dorfman and Samuelson "made the mathematical techniques of linear and non linear



programming as well as game theory accessible to future economists” (Wahid: 218).

Maurice Allais received his high school diploma in Latin and science in 1928 and in mathematics and philosophy in 1929. Beyond economics, he has significantly contributed to several branches of knowledge, including history of civilizations, politics, theoretical and experimental physics. His *In Quest of an Economic Discipline* and *Economy and Interest* being in French were less widely read but these works compare favourably with Sir John Hicks *Value and Capital* and Paul Samuelson’s *Foundations of Economic Analysis*.

Trygve Haavelmo published *A Study in the Theory of Economic Evolution* where his attention was on the apparent differences in economic developments that exist between regions and people across the globe. “Many of his students and assistants received their first instruction in authorship by writing expositions based on his lectures – under stimulating guidance” (Wahid: 233).

Harry Markowitz published two books in 1981 with other authors. *The EAS-E Programming Language* introduced another computer programming language. The other, *Adverse Deviation*, published by the Society of Actuaries, relates to risk management. His contribution is one of the most difficult areas of economics and finance. “He deals with the application of mathematical or computer techniques to practical problems of business decisions under uncertainty” (Wahid: 241).

Merton Miller’s father was a graduate of Harvard University. He graduated following his father’s footsteps in 1943 (B.A., magna cum laude, class of 1944). In 1958, he and Franco Modigliani published the first of their joint “M&M” papers on corporation finance. Miller is an avid promoter of free-market solutions to economic problems, very much in the same tradition of his Chicago laureates, Milton Friedman, Theodore Schultz, and George Stigler. “Miller has influenced a generation of finance academics” (Wahid: 149).

The degree of William Sharpe’s mother was in science and his father’s degree was in English literature. Sharpe credits his parents and step-parents with teaching him by example. He planned to pursue a medical career but after a year decided to change his major to business administration at UCLA. There he was greatly impressed by the rigor and relevance of economic theory. “Sharpe’s results are an elegant way of capturing the notion that a higher return is the reward for assuming higher risk, and only the type of risk that you cannot eliminate through diversification. This result, as simple as it may seem, is based on rigorous mathematical analyses” (Wahid: 255).

Ronald Coase passed his high school graduation in 1927 with distinction in history and chemistry. Since history’s entrance requirement was knowledge of Latin, he turned to the other subject which he had secured distinction – chemistry.

On discovering that chemistry was not his cup of tea, he switched to commerce. "The appeal of Coase's Theorem is that it assigns minimal role to government... The theorem's basic thrust is that Adam Smith's 'Invisible Hand' is much more effective than the argument about externalities at first suggests" (Wahid: 261). Economics owes the birth of two rapidly growing sub disciplines – the economics of property rights and the economics of law – to Ronald Coase. His path breaking paper contains no diagrams or equations. "Instead it is full of quotes from lawyers and judges, proving once again that most of the important questions in economics remain questions of interpretation, advocacy, and plain common sense" (Wahid: 263).

Gary Becker wrote his doctoral dissertation on the economics of discrimination under the supervision of Milton Friedman. Becker's diverse application of economic principles to such an array of social issues helps explain why he is a professor of both economics and sociology at the University of Chicago. "His most recent book, *Accounting for Tastes*, examines the process of preference formation that in conventional economics is considered is given" (Wahid: 271).

Robert Fogel received his B.A. from Cornell, his M.A. from Columbia, and his PhD from Johns Hopkins University in 1948, 1960, and 1963 respectively. At Cornell his interest shifted from science to economics and history. He has been one of the greatest historians and economists. "He disproved the hypotheses of Joseph Schumpeter and Walter W. Rostow that economic growth was due to certain important discoveries" (Wahid: 274). He stated that the sum of many specific technical changes, rather than a few great innovations determined economic development. His demonstration with Engerman that slave agriculture, as compared to free, was extremely productive "indicated that it is unlikely that the direct effect of slavery on the American South was to retard its economic development" (Wahid: 277).

Douglass North was deeply engrossed in photography and won several competitions. He did not grow up in an intellectual environment. Both his parents were not high school graduates. He decided to attend the University of California at Berkeley instead of Harvard to stay near his family. He became a convinced Marxist and opposed the Second World War. He graduated from Berkeley with slightly better than a 'C' average but with a triple major in politics, philosophy and economics. He was thinking seriously about whether to become an economist or to pursue a photography career. Finally, he tilted towards economics. At Harvard, he came in contact with Joseph Schumpeter, who exerted a strong influence on North's intellectual development. "He became one of the greatest economic historians of the present time. He thoroughly examined the long-term process economic growth of America as well as Europe" (Wahid: 289).

John Harsanyi preferred to study philosophy and mathematics but acceded to parental pressure to study pharmacy in 1937. He was sent to a forced labour camp but narrowly escaped the cruel fate encountered by his comrades. He completed his PhD from Stanford University in 1956 under the supervision of Kenneth Arrow. His lifetime intellectual achievements in such diverse areas game theory proper, bargaining theory, economics, sociology, and social ethics have woven a fabric that has become the unifying element. His "lifetime quest for a coherent theory of rational human conduct is perhaps a search for order and understanding in a chaotic world" (Wahid: 296).

John Nash switched his major to mathematics from chemical engineering. While at Carnegie, Nash took one elective course in international economics that led to develop the idea of game theory. In 1959 when his wife Alicia was pregnant, the brilliant career of Nash came to an unexpected halt since he was diagnosed as schizophrenic. The next 25 years of his life were spent in psychiatric care, which required him to be hospitalized from time to time. Nash transformed games and related economic theory. Ariel Rubenstein, a leading game theorist from Princeton, commenting on Nash's classic paper 'Non-Cooperative games' called him "the master of economic modeling" (Wahid: 306).

Reinhard Selten studied mathematics, economics and psychology, graduating in 1951. His interest in game theory was sparked by an article he read in *Fortune* magazine during his final year in high school. He received his PhD in mathematics from the University of Frankfurt. In the 1960s, Selten carried out research and published on oligopoly and game theory. In 1991, both Selten and his wife were diagnosed with diabetes. Selten's landmark contribution in game theory in 1965 and further development in 1975 following the pioneering work of John von Neumann and Oskar Morgenstern continuing with the path breaking contribution of John Nash "... addressed the problem of refining Nash's concept of equilibrium in noncooperative games" (Wahid: 317).

Robert Lucan Jr. dreamt to enter MIT to study engineering. He received a scholarship from the University of Chicago and not MIT. Unfortunately, Chicago did not have a school of engineering. He started studying mathematics and physics and lost interest in both of them. Starting with history and found it very intriguing. The modern historian Henri Pirenne impressed him since he focused more on the struggling lives of private citizens vis a vis the affairs of kings and emperors. Soon he liked economics and obtained his PhD in economics in 1964. His views belonged to the new classical school of thought. In addition to his work in macroeconomics, he had made outstanding contributions to "investment theory, financial economics, monetary theory, dynamic public economics, international finance, and most recently, the theory of economic growth" (Wahid: 330).

James Mirrlees in his early life used to wear glasses so he could not run and play soccer. He developed a strong interest in mathematics and could finish reading his teacher's college mathematics book. His intellectual interest began to change in Trinity College, Cambridge where the subject matter of economics, particularly poverty conditions in underdeveloped nations gained his intellectual interests. Richard Stone was his thesis supervisor. In 1962, on his way to India from MIT, he developed the theory of efficiency wage equilibrium. He had profound academic interaction with Kenneth Arrow, Robert Solow, Amartya Sen, and many other noted economic theorists. In the economic development literature, "he is recognized as the co-author (with I.M.D. Little) of a manual for industrial project analysis for developing countries. This work has become one of the classic readings in cost-benefit analysis" (Wahid: 337).

William Vickrey was a conscientious objector during World War II. He spent part of his alternate service designing a new inheritance tax for Puerto Rico. He received his PhD in economics in 1948 from Columbia University. His doctoral dissertation, "Agenda for Progressive Taxation," was reprinted as an economic classic in 1972. "He worked actively to make economics and markets work for the general improvement of people's lives, and because of his wide-ranging concern for economic efficiency in the interest of human welfare, he could also be labeled a 'humanist'" (Wahid: 348).

Robert Merton switched to the Engineering School just one day after entering Columbia College where he explored mathematics and sciences. "Merton devoted himself to developing finance theory in the areas of capital markets and financial institutions with his research on the operation and regulation of financial institutions, including issues of capital budgeting, production, hedging, and risk management" (Wahid: 357).

Myron Scholes through his parents and relatives became interested in economics and, in particular finance. In 1994, he joined and became a principal and co-founder of Long-Term Capital Management. He received honorary doctorate degrees from three universities: University of Paris-Dauphine in 1989, McMaster University in 1990, and Katholieke Universiteit Leuven in 1998. "His studies on intertemporal portfolio choice, capital asset pricing, the pricing options, risky corporate debt, loan guarantees, and other complex derivative securities are highly recognized in the finance and economics communities." (Wahid: 364). His textbook co-authored with Mark Wolfson, *Taxes and Business Strategy*, is recognized as the first of its kind in one of the least-studied areas of economics and finance science.

Amartya Sen was born in Santiniketan, India in 1933 but his father Ashutosh Sen's family originated from Bikrampur in Bangladesh. He spent his early life in Dhaka and his early education was in St. Gregory's High School, one of the

leading schools in the then East Pakistan. His later schooling was in Santiniketan. Presidency College at Kolkata was his next stage where he secured first position in the first class. Trinity College, Cambridge made him eligible to do the honors "Tripos" in economics in two years. From his early life, he was involved in left politics. At Cambridge, he was influenced by such mentors as Joan Robinson, Piero Sraffa, Nicholas Kaldor, and his tutor, Maurice Dobb. In 1957, Sen, then only 24, became the youngest professor and head of the department of economics at Jadavpur University, India. His involvement was in number of universities: Harvard, Cambridge, Delhi School of Economics and Oxford. He was the first non-American ever to become the president of the American Economic Association. Sen decided to return to Cambridge as "Master of Trinity College, one of the most honorable positions in the academia in England, where the selection is made by the prime minister of England and approved by the queen" (Wahid: 368). He has been the King Midas of economics. His work on development addresses the fundamental question of poverty. He proved that famine is not caused by shortage of food supply relative to demand but caused by nonmarket factors. He successfully integrated three distinct but interrelated disciplines into the spirit of a true economist: welfare economics, social choice, and development economics.

Robert Mundell attended a one-room schoolhouse in the tiny hamlet of Latimer, ten miles north of Kingston, Ontario. At the LSE he finished his PhD thesis entitled *Essays in the Theory of International Capital Movements* for MIT. The late sixties were halcyon years at Chicago, with the Mundell/Johnson seminars on international economics and the Friedman seminars on monetary economics. He had the reputation as an *enfant terrible* when once he asked Milton Friedman during a money seminar, "Milton, what makes you think money has anything to do with inflation?" (Wahid: 382). His contributions remain outstanding and constitute the core of teaching in international macroeconomics.

The readers have been better served since the contributions of each laureate were separately categorized and discussed. There is many an instance where there was discussion on laureates who influenced other laureates. It was a very interesting read and this book would open up to even the layman reader with a lot of intrinsic details about their private life, not to speak of their groundbreaking work which has been elucidated so nicely and simply. All in all, not only a budding economist but those who have spent a lifetime in this discipline will also be rewarded with feedback that they were not aware of.



*Table with Name of Nobel Laureate, Year and the Theme for Which the Laureate was Renowned*

Laureate of 1969, Ragnar Frisch (1895-1973) is a Founding Father of Econometrics.
Laureate of 1969, Jan Tinbergen (1903-1994) was the one who integrated Physics, Mathematics, Statistics, and Economics.
Laureate of 1970, Paul Samuelson (1915 - ) was an Economist's Economist.
Laureate of 1971, Simon Kuznets (1901-1985) was the Originator of the National Accounting Method.
Laureate of 1972, Kenneth Arrow (1921- ) was the Father of the Arrow's Impossibility Theorem.
Laureate of 1972, John Hicks (1904 - 1989) was an Architect of the famous IS-LM Framework.
Laureate of 1973, Wassily Leontief (1906-1999) was the Founder of the Input-Output Analysis.
Laureate of 1974, Friedrich Hayek (1899-1992) was the one who combined Psychology, Physiology, Philosophy, and Economics.
Laureate of 1974, Gunnar Myrdal (1898-1987) was an Economist, a Social Thinker, and a Politician.
Laureate of 1975, Leonid Kantorovich (1912-1986) was the Pioneer of the Theory of Optimum Resource Allocation.
Laureate of 1975, Tjalling Koopmans (1910-1985) was the Originator of Activity Analysis.
Laureate of 1976, Milton Friedman (1912- ) was the Leader of the Monetarist School of Thought.
Laureate of 1977, James Meade (1907-1995) was a Pioneer of the Theory of the Second Best.
Laureate of 1977, Bertil Ohlin (1899-1979) was a Co-founder of the celebrated Heckscher -Ohlin Theorem of Factor Endowment
Laureate of 1978, Herbert Simon (1916-2001) was one of the most versatile Talents of the Twentieth Century.
Laureate of 1979, Arthur Lewis (1915-1991) was the Founder of the Theory of Unlimited Supplies of Labour.
Laureate of 1979, Theodore Schultz (1902-1998) was an Expert on Agricultural Economics and Human Capital Theories.
Laureate of 1980, Lawrence Klein (1920- ) was a Giant of Econometric Modeling.
Laureate of 1981, James Tobin (1918- ) was an Architect of the Portfolio Selection Theory.
Laureate of 1982, George Stigler (1911-1991) was an Authority on the Economics of Regulations and Industrial Organization.
Laureate of 1983, Gerard Debreu (1921- ) was a Brilliant Mathematician and a

Frontiersman of the Theory of the Existence of Equilibrium.  
Laureate of 1984, Richard Stone (1913-1991) was a Specialist of the Consumer Demand Theories and Empirical Modeling.  
Laureate of 1985, Franco Modigliani (1918- ) was a Founder of the Life Cycle Hypothesis.  
Laureate of 1986, James Buchanan (1919- ) was a Pioneer of Public Economics.  
Laureate of 1987, Robert Solow (1924- ) was a Founder of the Modern Growth Theories.  
Laureate of 1988, Maurice Allais (1911- ) was an Applied Micro theorist.  
Laureate of 1989, Trygve Haavelmo (1911-1999) was a Founder of the Simultaneous Equations System.  
Laureate of 1990, Harry Markowitz (1927- ) was a Founding Father of the Modern Portfolio Theory.  
Laureate of 1990, Merton Miller (1923- 2000) was a Guru of Corporate Finance.  
Laureate of 1990, William Sharpe (1934- ) was a Founder of the Capital Asset Pricing Model.  
Laureate of 1991, Ronald Coase (1910- ) was a Pioneer of the Economics of Property and the Economics of Law.  
Laureate of 1992, Garry Becker (1930- ) was a Champion of the Economics of Household, Marriage and Divorce.  
Laureate of 1993, Robert Fogel (1926- ) was an Originator of "Cliometrics".  
Laureate of 1993, Douglass North (1920- ) was a Pioneer of the Economics of Institutions.  
Laureate of 1994, John Harsanyi (1920-2000) was a Master of Rational Behavior and Bargaining in Games.  
Laureate of 1994, John Nash (1928- ) was a Discoverer of the Nash Equilibrium.  
Laureate of 1994, Reinhard Selten (1930- ) was the one who refined the Concept of Equilibrium.  
Laureate of 1995, Robert Lucas Jr. (1937- ) was the Pioneer of the New Classical School of Thought.  
Laureate of 1996, James Mirrlees (1936- ) was an Authority on Information Economics.  
Laureate of 1996, William Vickrey (1914-1996) was an Expert on Moral Hazard and Adverse Selection.  
Laureate of 1997, Robert Merton (1944- ) was a Solver of the Option Pricing Model.  
Laureate of 1997, Myron Scholes (1941- ) was an Applied Financial Economist.  
Laureate of 1998, Amartya Sen (1933- ) was a Champion of Welfare Economics and Poverty Studies.  
Laureate of 1999, Robert Mundell (1932- ) was the one who offered Consensual Frameworks for Continuing Controversies.