John Von Neumann The Scientific Genius Who Pioneered The Modern Computer Game Theory Nuclear Deterrence And Much More

Marina Whitman is the daughter and only child of John von Neumann, one of the five Hungarian scientific geniuses dubbed “the Martians” by their colleagues, a figure often hailed as the greatest mathematician of the 20th century and even as the greatest scientist after Einstein. He was a key figure in the Manhattan project; the inventor of game theory; the pioneer developer of the modern stored-program electronic computer; and, right up until his death, an adviser to the top echelons of the American military establishment. Whitman’s memoir is the story of how the cosmopolitan environment in which she was immersed, the demanding expectations of her parents, and her own struggles to emerge from the shadow of a larger-than-life parent shaped her life and work. Starting as, in her words, “a trailing spouse,” she rose to become a noted academic during the 1960s and ’70s, casting her teaching and writing in the framework of globalization before the word had been invented. She was the first woman ever to serve on the President’s Council of Economic Advisers and participated actively in U.S. efforts to reshape the international monetary and financial system during the early 1970s. She pioneered the role of women on the boards of leading multinational corporations, and became the highest-ranking female executive in the American auto industry in the 1980s, serving not only as GM’s vice president and chief economist but also as its Cassandra while the firm persisted along a path that led eventually to its collapse into bankruptcy.

The ideas of John von Neumann have had a profound influence on modern mathematics and science. Often considered one of the great thinkers of our century, von Neumann initiated major branches of mathematics - from operator algebras to game theory to scientific computing - and had a fundamental impact on such areas as self-adjoint operators, ergodic theory and the foundations of quantum mechanics, and numerical analysis and the design of the modern computer.

An electrifying biography of one of the most extraordinary scientists of the twentieth century and the world he made. The smartphones in our pockets and computers like brains. The vagaries of game theory and evolutionary biology. Nuclear weapons and self-replicating spacecrafts. All bear the fingerprints of one remarkable, yet largely overlooked, man: John von Neumann. Born in Budapest at the turn of the century, von Neumann is one of the most influential scientists to have ever lived. A child prodigy, he mastered calculus by the age of eight, and in high school made lasting contributions to mathematics. In Germany, where he helped lay the foundations of quantum mechanics, and later at Princeton, von Neumann’s colleagues believed he had the fastest brain on the planet—bar none. He was instrumental in the Manhattan Project and the design of the atom bomb; he helped formulate the bedrock of Cold War geopolitics and modern economic theory; he created the first ever programmable digital computer; he prophesized the potential of nanotechnology; and, from his deathbed, he expounded on the limits of brains and computers—and how they might be overcome. Taking us on an astonishing journey, Ananyo Bhattacharya explores how a combination of genius and unique historical circumstance allowed a single man to sweep through a stunningly diverse array of fields, sparking revolutions wherever he went. The Man from the Future is an insightful and thrilling intellectual biography of the visionary thinker who shaped our century.

Vol. 2 of a monumental 4-volume set covers mathematics and the physical world, mathematics and social science, and the laws of chance, with non-technical essays by eminent mathematicians, economists, scientists, and others.

John Von Neumann as Seen by His Brother

From the Marginal Revolution to Behavioral Economics

Five Physicists Who Changed the Twentieth Century

The Martian's Daughter

The Martians of Science

Consciousness and the Physical World

This volume is the reprinted edition of the first full-scale biography of the man widely regarded as the greatest scientist of the century after Einstein. Born in Budapest in 1903, John von Neumann grew up in one of the most extraordinary of scientific communities. From his arrival in America in the mid-1930s--with bases in Boston, Princeton, Washington, and Los Alamos--von Neumann pioneered and participated in the major scientific and political dramas of the next three decades, leaving his mark on more fields of scientific endeavor than any other scientist. Von Neumann's work in areas such as game theory, mathematics, physics, and meteorology formed the building blocks for the most important discoveries of the century: the modern computer, game theory, the atom bomb, radar, and artificial intelligence, to name just a few. From the laboratory to the highest levels of government, this definitive biography gives us a behind-the-scenes look at the politics and personalities involved in these world-changing discoveries. Written more than 30 years after von Neumann's untimely death at age 54, it was prepared with the cooperation of his family and includes information gained from interviewing countless sources across Europe and America. Norman Macrae paints a highly readable, humanizing portrait of a man whose legacy still influences and shapes modern science and knowledge. -- Amazon.com

The ideas of John von Neumann have had a profound influence on modern mathematics and science. One of the great thinkers of our century, von Neumann initiated major branches of mathematics--from operator algebras to game theory to scientific computing--and had a fundamental impact on such areas as self-adjoint operators, ergodic theory and the foundations of quantum mechanics, and numerical analysis and the design of the modern computer. This volume contains the proceedings of an AMS Symposium in Pure Mathematics, held at Hofstra University, in May 1988. The symposium brought together some of the foremost researchers in the wide range of areas in which von Neumann worked. These articles illustrate the sweep of von Neumann's ideas and thinking and document their influence on contemporary mathematics. In addition, some of those who knew von Neumann when he was alive have presented here personal reminiscences about him. This book is directed to those interested in operator theory, game theory, ergodic theory, and scientific computing, as well as to historians of mathematics and others having an interest in the contemporary history of the mathematical sciences.This book will give readers an appreciation for the workings of the mind of one of the mathematical giants of our time.

After three decades since the first nearly complete edition of John von Neumann's papers, this book is a valuable selection of those papers and excerpts of his books that are most characteristic of his activity, and reveal that of his continuous influence. The results receiving the 1994 Nobel Prizes in economy deeply rooted in Neumann's game theory are only minor traces of his exceptionally broad spectrum of creativity and stimulation. The book is organized by the specific subjects-quantum mechanics, ergodic theory, operator algebra, hydrodynamics, economics, computers, science and society. In addition, one paper which was written in German will be translated and published in English for the first time. The sections are introduced by short explanatory notes with an emphasis on recent developments based on von Neumann's contributions. An overall picture is provided by Ulam's, one of his most intimate partners in thinking, 1958 memorial lecture. Facsimilae and translations of some of his personal letters and a newly completed bibliography based on von Neumann's own careful compilation are added. Contents:Quantum Mechanics:Mathematical Foundations of Quantum MechanicsThe Logic of Quantum Mechanics (with G Birkhoff)Ergodic Theory:Proof of the Quasi-Ergodic HypothesisOperator Methods in Classical Mechanics, II (with P R Halmos)Operator Algebra:Algebra of Functional Operations and Theory of Normal OperatorsOn Rings of Operators I–IVUse of Variational Methods in HydrodynamicsEconomics:Theory of Games and Economic Behavior (with O Morgenstern)Computers:On the Principles of Large Scale Computing Machines (with H H Goldstine)Science and Society:The MathematicianMethod in the Physical SciencesThe Role of Mathematics in the Sciences and in Societyand other papers Readership: Mathematicians. keywords:Mathematics;Science History;Computer Science;J V Neumann;Science and Society;Game Theory;Quantum Mechanics;Operator Algebra;Hydrodynamics;Ergodic Theory“The collection bears testimony to the lasting influence of John von Neumann's work on the course of modern mathematics.”R Siegmund-Schultze Mathematical Abstracts “This collection is a fascinating introduction to the work of John von Neumann … it has much to offer even to the casual browser and will also be relevant and interesting to those working today in the fields on which von Neumann had such enormous influence.”Mathematical Reviews

Among the founding fathers of modern quantum physics few have contributed to our basic understanding of its concepts as much as E.P. Wigner. His articles on the epistemology of quantum mechanics and the measurement problem, and the basic role of symmetries were of fundamental importance for all subsequent work. He was also the first to discuss the concept of consciousness from the point of view of modern physics. G.G. Emch edited most of those papers and wrote a very helpful introduction into Wigner's contributions to Natural Philosophy. The book should be a gem for all those interested in the history and philosophy of science.

From Mathematics to the Technologies of Life and Death

The Origins of the Digital Universe

Economists at War

Multiple Criteria Decision Analysis: State of the Art Surveys

The Computer from Pascal to von Neumann

John von Neumann: The Scientific Genius Who Pioneered the Modern Computer, Game Theory, Nuclear Deterrence, and Much More ***Plunkett Lake Press***

In his work on rings of operators in Hilbert space, John von Neumann discovered a new mathematical structure that resembled the lattice system Ln. In characterizing its properties, von Neumann founded the field of continuous geometry. This book, based on von Neumann's lecture notes, begins with the development of the axioms of continuous geometry, dimension theory, and--for the irreducible case--the function D(a). The properties of regular rings are then discussed, and a variety of results are presented for lattices that are continuous geometries, for which irreducibility is not assumed. For students and researchers interested in ring theory or projective geometries, this book is required reading.

Wartime is not just about military success. Economists at War tells a different story - about a group of remarkable economists who used their skills to help their countries fight their battles during the Chinese-Japanese War, Second World War, and the Cold War. 1935-55 was a time of conflict, confrontation, and destruction. It was also a time when the skills of economists were called upon to finance the military, to identify economic vulnerabilities, and to help reconstruction. Economists at War: How a Handful of Economists Helped Win and Lose the World Wars focuses on the achievements of seven finance ministers, advisors, and central bankers from Japan, China, Germany, the UK, the USSR, and the US. It is a story of good and bad economic thinking, good and bad policy, and good and bad moral positions. The economists suffered threats, imprisonment, trial, and assassination. They all believed in the power of economics to make a difference, and their contributions had a significant impact on political outcomes and military ends. Economists at War shows the history of this turbulent period through a unique lens. It details the tension between civilian resources and military requirements; the desperate attempts to control economies wracked with inflation, depression, political argument, and fighting; and the clever schemes used to evade sanctions, develop barter trade, and use economic espionage. Politicians and generals cannot win wars if they do not have the resources. This book tells the human stories behind the economics of wartime.

Utility is a key concept in the economics of individual decision-making. However, utility is not measurable in a straightforward way. As a result, from the very beginning there has been debates about the meaning of utility as well as how to measure it. This book is an innovative investigation of how these arguments changed over time. Measuring Utility reconstructs economists' ideas and discussions about utility measurement from 1870 to 1985, as well as their attempts to measure utility empirically. The book brings into focus the interplay between the evolution of utility analysis, economists' ideas about utility measurement, and their conception of what measurement in general means. It also explores the relationships between the history of utility measurement in economics, the history of the measurement of sensations in psychology, and the history of measurement theory in general. Finally, the book discusses some methodological problems related to utility measurement, such as the epistemological status of the utility concept and its measures. The first part covers the period 1870-1910, and discusses the issue of utility measurement in the theories of Jevons, Menger, Walras and other early utility theorists. Part II deals with the emergence of the notions of ordinal and cardinal utility during the period 1900-1945, and discusses two early attempts to give an empirical content to the notion of utility. Part III focuses on the 1945-1955 debate on utility measurement that was originated by von Neumann and Morgenstern's expected utility theory (EUT). Part IV reconstructs the experimental attempts to measure the utility of money between 1950 and 1985 within the framework provided by EUT. This historical and epistemological overview provides keen insights into current debates about rational choice theory and behavioral economics in the theory of individual decision-making and the philosophy of economics.

The Neumann Compendium

John Von Neumann and Norbert Wiener

The Intellectual Migration

Mathematical Foundations of Quantum Mechanics

Prisoner's Dilemma/John Von Neumann, Game Theory and the Puzzle of the Bomb

John Von Neumann

Selected Contributed Papers of the Tenth International Congress of Logic, Methodology and Philosophy of Science, Florence, August 1995

John von Neumann was a Jewish refugee from Hungary — considered a “genius” like fellow Hungarians Leo Szilard, Eugene Wigner and Edward Teller — who played key roles developing the A-bomb at Los Alamos during World War II. As a mathematician at Princeton’s Institute for Advanced Study (where Einstein was also a professor), von Neumann was a leader in the development of early computers. Later, he developed the new field of game theory in economics and became a top nuclear arms policy adviser to the Truman and Eisenhower administrations. “I always thought [von Neumann’s] brain indicated that he belonged to a new species, an evolution beyond man. Macrae shows us in a lively way how this brain was nurtured and then left its great imprint on the world.” — Hans A. Bethe, Cornell University “The book makes for utterly captivating reading. Von Neumann was, of course, one of this century’s geniuses, and it is surprising that we have had to wait so long... for a fully fleshed and sympathetic biography of the man. But now, happily, we have one. Macrae nicely delineates the cultural, familial, and educational environment from which von Neumann sprang and sketches the mathematical and scientific environment in which he flourished. It’s no small task to render a genius like von Neumann in ordinary language, yet Macrae manages the trick, providing more than a glimpse of what von Neumann accomplished intellectually without expecting the reader to have a Ph.D. in mathematics. Beyond that, he captures von Neumann’s qualities of temperament, mind, and personality, including his effortless wit and humor. And [Macrae] frames and accounts for von Neumann’s politics in ways that even critics of them, among whom I include myself, will find provocative and illuminating.” — Daniel J. Kevles, California Institute of Technology “A lively portrait of the hugely consequential nonmathematician-physicist-et al., whose genius has left an enduring impress on our thought, technology, society, and culture. A double salute to Steve White, who started this grand book designed for us avid, nonmathematical readers, and to Norman Macrae, who brought it to a triumphant conclusion.” — Robert K. Merton, Columbia University “The first full-scale biography of this polymath, who was born Jewish in Hungary in 1903 and died Roman Catholic in the United States at the age of 53. And Mr. Macrae has some great stories to tell... Mr. Macrae’s biography has rescued a lot of good science gossip from probable extinction, and has introduced many of us to the life story of a man we ought to know better.” — Ed Regis, The New York Times “A nice and fascinating picture of a genius who was active in so many domains.” —Zentralblatt MATH “Biographer Macrae takes a ‘viewspaperman’ approach which stresses the context and personalities associated with von Neumann’s remarkable life, rather than attempting to give a detailed scholarly analysis of von Neumann’s papers. The resulting book is a highly entertaining account that is difficult to put down.” — Journal of Mathematical Psychology “A full and intimate biography of ‘the man who consciously and deliberately set mankind moving along the road that led us into the Age of Computers.’” — Freeman Dyson, Princeton, NJ “It is good to have a biography of one of the most important mathematicians of the twentieth century, even if it is a biography that focuses much more on the man than on the mathematics.” — Fernando Q. Gouvêa, Mathematical Association of America “Based on much research, his own and that of others (especially of Stephen White), Macrae has written a valuable biography of this remarkable genius of our century, without the opacity of technical (mathematical) dimensions that are part of the hero’s intellectual contributions to humanity. Interesting, informative, illuminating, and insightful.” — Choice Review “Macrae paints a highly readable, humanizing portrait of a man whose legacy still influences and shapes modern science and knowledge.” — Resonance, Journal of Science Education “In this affectionate, humanizing biography, former Economist editor Macrae limns a prescient pragmatist who actively fought against fascism and who advocated a policy of nuclear deterrence because he foresaw that Stalin’s Soviet Union would rapidly acquire the bomb and develop rocketry... Macrae makes [von Neumann’s] contributions accessible to the lay reader, and also discusses von Neumann’s relationships with two long-suffering wives, his political differences with Einstein and the cancer that killed him.” — Publishers Weekly “Macrae’s life of the great mathematician shows dramatically what proper care and feeding can do for an unusually capacious mind.” — John Wilkes, Los Angeles Times

In 1942, Lt. Herman H. Goldstine, a former mathematics professor, was stationed at the Moore School of Electrical Engineering at the University of Pennsylvania. It was there that he assisted in the creation of the ENIAC, the first electronic digital computer. The ENIAC was operational in 1945, but plans for a new computer were already underway. The principal source of ideas for the new computer was John von Neumann, who became Goldstine's chief collaborator. Together they developed EDVAC, successor to ENIAC. After World War II, at the Institute for Advanced Study, they built what was to become the prototype of the present-day computer. Herman Goldstine writes as both historian and scientist in this first examination of the development of computing machinery, from the seventeenth century through the early 1950s. His personal involvement lends a special authenticity to his narrative, as he sprinkles anecdotes and stories liberally through his text.

A classic escape nightmare, Chasing Homer is sped on not only by Krasznahorkai’s signature velocity, but also by a unique musical score and intense illustrations In this thrilling chase narrative, a hunted being escapes certain death at breakneck speed—careening through Europe, heading blindly South. Faster and faster, escaping the assassins, our protagonist flies forward, blending into crowds, adjusting to terrains, hopping on and off ferries, always desperately trying to stay a step ahead of certain death: the past did not exist, only what was current existed—a prisoner of the instant, rushing into this instant, an instant that had no continuation … Krasznahorkai—celebrated for the exhilarating energy of his prose—outdoes himself in Chasing Homer. And this unique collaboration boasts beautiful full-color paintings by Max Neumann and—reaching out of the book proper—the wildly percussive music of Szilveszter Miklós scored for each chapter (to be accessed by the reader via QR codes).

Theory of Self-reproducing Automata

The Legacy of John Von Neumann

Language, Quantum, Music

John von Neumann and the Origins of Modern Computing

In Commemoration of the 100th Anniversary of the Birth of John von Neumann

Prisoner's Dilemma

John von Neumann (1903-1957) was undoubtedly one of the scientific geniuses of the 20th century. The main fields to which he contributed include various disciplines of pure and applied mathematics, mathematical and theoretical physics, logic, theoretical computer science, and computer architecture. Von Neumann was also actively involved in politics and science management and he had a major impact on US government decisions during, and especially after, the Second World War. There exist several popular books on his personality and various collections focusing on his achievements in mathematics, computer science, and economy. Strangely enough, to date no detailed appraisal of his seminal contributions to the mathematical foundations of quantum physics has appeared. Von Neumann's theory of measurement and his critique of hidden variables became the touchstone of most debates in the foundations of quantum mechanics. Today, his name also figures most prominently in the mathematically rigorous branches of contemporary quantum mechanics of large systems and quantum field theory. And finally - as one of his last lectures, published in this volume for the first time, shows - he considered the relation of quantum logic and quantum mechanical probability as his most important problem for the second half of the twentieth century. The present volume embraces both historical and systematic analyses of his methodology of mathematical physics, and of the various aspects of his work in the foundations of quantum physics, such as theory of measurement, quantum logic, and quantum mechanical entropy. The volume is rounded off by previously unpublished letters and lectures documenting von Neumann's thinking about quantum theory after his 1932 Mathematical Foundations of Quantum Mechanics. The general part of the Yearbook contains papers emerging from the Institute's annual lecture series and reviews of important publications of philosophy of science and its history.

John von Neumann and Oskar Morgenstern conceived a groundbreaking mathematical theory of economic and social organization, based on a theory of games of strategy. Not only would this revolutionize economics, but the entirely new field of scientific inquiry it yielded--game theory--has since been widely used to analyze a host of real-world phenomena from arms races to optimal policy choices of presidential candidates, from vaccination policy to major league baseball salary negotiations. And it is today established throughout both the social sciences and a wide range of other sciences.

William Aspray provides the first broad and detailed account of von Neumann's many different contributions to computing. John von Neumann (1903-1957) was unquestionably one of the most brilliant scientists of the twentieth century. He made major contributions to quantum mechanics and mathematical physics and in 1943 began a new and all-too-short career in computer science. William Aspray provides the first broad and detailed account of von Neumann's many different contributions to computing. These, Aspray reveals, extended far beyond his well-known work in the design and construction of computer systems to include important scientific applications, the revival of numerical analysis, and the creation of a theory of computing.Aspray points out that from the beginning von Neumann took a wider and more theoretical view than other computer pioneers. In the now famous EDVAC report of 1945, von Neumann clearly stated the idea of a stored program that resides in the computer's memory along with the data it was to operate on. This stored program computer was described in terms of idealized neurons, highlighting the analogy between the digital computer and the human brain. Aspray describes von Neumann's development during the next decade, and almost entirely alone, of a theory of complicated information processing systems, or automata, and the introduction of themes such as learning, reliability of systems with unreliable components, self-replication, and the importance of memory and storage capacity in biological nervous systems; many of these themes remain at the heart of current investigations in parallel or neurocomputing.Aspray allows the record to speak for itself. He unravels an intricate sequence of stories generated by von Neumann's work and brings into focus the interplay of personalities centered about von Neumann. He documents the complex interactions of science, the military, and business and shows how progress in applied mathematics was intertwined with that in computers. William Aspray is Director of the Center for the History of Electrical Engineering at The Institute of Electrical and Electronics Engineers.

John von Neumann was perhaps the most influential mathematician of the twentieth century, especially if his broad influence outside mathematics is included. The present volume is the first substantial collection of (previously mainly unpublished) letters written by von Neumann to colleagues, friends, government officials, and others. The letters give us a glimpse of the thinking of John von Neumann about mathematics, physics, computer science, science management, education, consulting, politics, and war. Readers of quite diverse backgrounds will find much of interest in this first-hand look at one of the towering figures of twentieth century science.

The Computer and the Brain

Europe and America, 1930-1960

John von Neumann and the Foundations of Quantum Physics

Continuous Geometry

Turing's Cathedral

John von Neumann: Selected Letters

This is Bulletin , Volume 64, Number 3, Part II, May 1958. A memorial to the late John von Neumann edited by J. C. Oxtoby, B. J. Pettis and E. B. Price.

Presents the history of the invention of computers, describing the collaboration of John von Neumann and his colleagues as they worked together to create the first computer, an event which led to the hydrogen bomb and the birth of the digital age.

The magnificent second novel from the Pulitzer Prize–winning author of The Overstory and the forthcoming Bewilderment. “Accomplished . . . mature and assured. . . . A major American novelist.”— New Republic Something is wrong with Eddie Hobson, Sr., father of four, sometime history teacher, quiz master, black humorist, and virtuoso invalid. His recurring fainting spells have worsened, and given his ingrained aversion to doctors, his worried family tries to discover the nature of his sickness. Meanwhile, in private, Eddie puts the finishing touches on a secret project he calls Hobbstown, a place that he promises will save him, the world, and everything that’s in it. A dazzling novel of compassion and imagination, Prisoner’s Dilemma is a story of the power of individual experience.

Multiple Criteria Decision Analysis: State of the Art Surveys provides survey articles and references of the seminal or state-of-the-art research on MCDA. The material covered ranges from the foundations of MCDA, over various MCDA methodologies (outranking methods, multiattribute utility and value theories, non-classical approaches) to multiobjective mathematical programming, MCDA applications, and software. This vast amount of material is organized in 8 parts, with a total of 25 chapters. More than 2000 references are listed.

John Von Neumann, 1903-1957

Von Neumann, Morgenstern, and the Creation of Game Theory

Philosophical Reflections and Syntheses

The World of Mathematics

The Scientific Files of John Von Neumann

John von Neumann and Twentieth Century Science

John von Neuman was perhaps the most influential mathematician of the twentieth century, especially if his broad influence outside mathematics is included. Not only did he contribute to almost all branches of mathematics and created new fields, but he also changed post-World War II history with his work on the design of computers and with being a sought-after technical advisor to many figures in the U.S. military-political establishment in the 1940s and 1950s. The present volume is the first substantial collection of (previously mainly unpublished) letters written by von Neumann to colleagues, friends, government officials, and others. The letters give us a glimpse of the thinking of John von Neumann about mathematics, physics, computer science, science management, education, consulting, politics, and war. Readers of quite diverse backgrounds will find much of interest in this fascinating first-hand look at one of the towering figures of twentieth century science.

If science has the equivalent of a Bloomsbury group, it is the five men born at the turn of the twentieth century in Budapest: Theodore von Karman, Leo Szilard, Eugene Wigner, John von Neumann, and Edward Teller. From Hungary to Germany to the United States, they remained friends and continued to work together and influence each other throughout their lives. As a result, their work was integral to some of the most important scientific and political developments of the twentieth century.Istvan Hargittai tells the story of this remarkable group: Wigner won a Nobel Prize in theoretical physics; Szilard was the first to see that a chain reaction based on neutrons was possible, initiated the Manhattan Project, but left physics to try to restrict nuclear arms; von Neumann could solve difficult problems in his head and developed the modern computer for more complex problems; von Karman became the first director of NASA's Jet Propulsion Laboratory, providing the scientific basis for the U.S. Air Force; and Teller was the father of the hydrogen bomb, whose name is now synonymous with the controversial "Star Wars" initiative of the 1980s. Each was fiercely opinionated, politically active, and fought against all forms of totalitarianism. Hargittai, as a young Hungarian physical chemist, was able to get to know some of these great men in their later years, and the depth of information and human interest in The Martians of Science is the result of his personal relationships with the subjects, their families, and their contemporaries. "This is an important story that needs to be told, and Hargittai tells it well." - Nature "What a story! Hargittai, a Jewish-Hungarian like his heroes, tells the remarkable story of five immigrants, of vastly different politics, without whom American science (and the world) would not be the same." - Roald Hoffmann, Nobel laureate, Cornell University

Galileo and Newton’s work towards the mathematisation of the physical world; Leibniz’s universal logical calculus; the Enlightenment's math é matique sociale. John von Neumann inherited all these aims and philosophical intuitions, together with an idea that grew up around the Vienna Circle of an ethics in the form of an exact science capable of guiding individuals to make correct decisions. With the help of his boundless mathematical capacity, von Neumann developed a conception of the world as a mathematical game, a world globally governed by a universal logic in which individual consciousness moved following different strategies: his vision guided him from set theory to quantum mechanics, to economics and to his theory of automata (anticipating artificial intelligence and cognitive science). This book provides the first comprehensive scientific and intellectual biography of John von Neumann, a man who perhaps more than any other is representative of twentieth century science.

A reconstruction of the creation of game theory in the twentieth century by John von Neumann and Oskar Morgenstern.

A Memoir

Modeling and Computations in Dynamical Systems

From Chess to Social Science, 1900-1960

Theory of Games and Economic Behavior

Measuring Utility

John Von Neumann and Modern Economics

Reprint of the fine biography first published by Doubleday in 1992. Annotation copyright by Book News, Inc., Portland, OR

This book represents the views of one of the greatest mathematicians of the twentieth century on the analogies between computing machines and the living human brain. John von Neumann concludes that the brain operates in part digitally, in part analogically, but uses a peculiar statistical language unlike that employed in the operation of man-made computers. This edition includes a new foreword by two eminent figures in the fields of philosophy, neuroscience, and consciousness.

A double biography compares the lives and careers of two innovative mathematicians and assesses their respective contributions in the areas of quantum mechanics and cybernetics

Centering around von Neumann's 1937 paper on the model of an expanding economy, this collection analyzes his versatility as a mathematician and his contribution to economics. The contributors include Kenneth Arrow, Lionello Punzo, Paul Samuelson, A. Brody, John Harsanyi, Sidney Afriat, Gerald Thompson, and Nicholas Kaldor.

John von Neumann: The Scientific Genius Who Pioneered the Modern Computer, Game Theory, Nuclear Deterrence, and Much More

Chasing Homer

Edited Proceedings of an Interdisciplinary Symposium on Consciousness Held at the University of Cambridge in January 1978

The World as a Mathematical Game

How a Handful of Economists Helped Win and Lose the World Wars

The Scientific Genius who Pioneered the Modern Computer, Game Theory, Nuclear Deterrence, and Much More

This text shows that insights in quantum physics can be obtained by exploring the mathematical structure of quantum mechanics. It presents the theory of Hermitean operators and Hilbert spaces, providing the framework for transformation theory, and using th

The Man from the Future: The Visionary Ideas of John von Neumann

Selected Letters

Selected Contributed Papers of the Tenth International Congress of Logic, Methodology, and Philosophy of Science, Florence, August 1995