Prisoner S Dilemma John Von Neumann Game Theory A

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Game Theory and Strategy Springer Science & Business Media
In 1956, two Bell Labs scientists discovered the scientific formula for getting rich. One was mathematician Claude Shannon, neurotic father of our digital age, whose genius is ranked with Einstein's. The other was John L. Kelly Jr., a Texas-born, gun-toting physicist. Together they applied the science of information theory—the basis of computers and the Internet—to the problem of making as much money as possible, as fast as possible. Shannon and MIT mathematician Edward O. Thorp took the "Kelly formula" to Las Vegas. It worked. They realized that there was even more money to be made in the stock market. Thorp used the Kelly system with his phenomenally successful hedge fund, Princeton-Newport Partners. Shannon became a successful investor, too, topping even Warren Buffett's rate of return. Fortune's Formula traces how the Kelly formula sparked controversy even as it made fortunes at racetracks, casinos, and trading desks. It reveals the dark side of this alluring scheme, which is founded on exploiting an insider's edge. Shannon believed it was possible for a smart investor to beat the market—and William Poundstone's Fortune's Formula will convince you that he was right.
Prisoner's Dilemma CRC Press
What does game theory tell us about rational behavior? Is there such a thing as rational behavior, and if so, is it of any use to us? In this fascinating book, renowned Hungarian economist Laszlo Mero shows how game theory provides insight into such aspects of human psychology as altruism, competition, and politics, as well as its relevance to disparate fields such as physics and evolutionary biology. This ideal guide shows us how mathematics can illuminate the human condition.
Game Theory and Politics Basic Books
Steven J. Brams' Theory of Moves, though based on the classical theory of games, proposes changes in its rules to render it a truly dynamic theory. By postulating that players think ahead not just to the immediate consequences of making moves, but also to the consequences of countermoves to these moves, counter-countermoves, and so on, it extends the strategic analysis of conflicts into the more distant future. It elucidates the role that different kinds of power - moving, order

and threat - may have on conflict outcomes, and it also shows how misinformation affects player choices. Applied to a series of cases drawn from politics, economics, sociology, fiction and the Bible, the theory provides not only a parsimonious explanation of their outcomes, but also shows why they unfolded as they did. This book, which assumes no prior knowledge of game theory or special mathematical background, will be of interest to scholars and students throughout the social sciences.

Theory of Moves Turtleback Books

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.

Introducing Game Theory Springer Science & Business Media

A masterful work of science writing that’s "both a fascinating biography of von Neumann, the Hungarian exile whose mathematical theories were building blocks for the A-bomb and the digital computer, and a brilliant social history of game theory and its role in the Cold War and nuclear arms race" (San Francisco Chronicle). Should you watch public television without pledging?...Exceed the posted speed limit?...Hop a subway turnstile without paying? These questions illustrate the so-called "prisoner's dilemma", a social puzzle that we all face every day. Though the answers may seem simple, their profound implications make the prisoner's dilemma one of the great unifying concepts of science. Watching players bluff in a poker game inspired John von Neumann—father of the modern computer and one of the sharpest minds of the century—to construct game theory, a mathematical study of conflict and deception. Game theory was readily embraced at the RAND Corporation, the archetypical think tank charged with formulating military strategy for the atomic age, and in 1950 two RAND scientists made a momentous discovery. Called the "prisoner's dilemma," it is a disturbing and mind-bending game where two or more people may betray the common good for individual gain. Introduced shortly after the Soviet Union acquired the atomic bomb, the prisoner's dilemma quickly became a popular allegory of the nuclear arms race. Intellectuals such as von Neumann and Bertrand Russell joined military and political leaders in rallying to the "preventive war" movement, which advocated a nuclear first strike against the Soviet Union. Though the Truman administration rejected preventive war the United States entered into an arms race with the Soviets and game theory developed into a controversial tool of public policy—alternately accused of justifying arms races and touted as the only hope of preventing them. Prisoner's Dilemma is the incisive story of a revolutionary idea that has been hailed as a landmark of twentieth-century thought.

Prisoners of Reason Oxford University Press, USA

Using the theory of Prisoner's Dilemma, Prisoners of Reason explores how neoliberalism departs from classic liberalism and how it rests on game theory.

Gaming the Vote Plunkett Lake Press

This is the classic work upon which modern-day game theory is based. What began as a modest proposal that a mathematician and an economist write a short paper together blossomed, when Princeton University Press published Theory of Games and Economic Behavior. In it, 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.

The Logic of Strategy Anchor

At least five U.S. presidential elections have been won by the second most popular candidate, because of "spoilers"--Minor candidates who take enough votes away from the most popular candidate to tip the election. The spoiler effect is a consequence of the "impossibility theorem," discovered by Nobel laureate economist Kenneth Arrow, which asserts that voting is fundamentally unfair--and political strategists are exploiting the mathematical faults of the simple majority vote. This book presents a solution to the spoiler problem: a system called range voting, already widely used on the Internet, which is the fairest voting method of all, according to computer studies. Range voting remains controversial, however, and author Poundstone assesses the obstacles confronting any attempt to change the American electoral system.--From publisher description.

GeNeDis 2018 Hachette+ORM

The 3rd World Congress on Genetics, Geriatrics, and Neurodegenerative Disease Research (GeNeDis 2018), focuses on recent advances in genetics, geriatrics, and neurodegeneration, ranging from basic science to clinical and pharmaceutical developments. It also provides an international forum for the latest scientific discoveries, medical practices, and care initiatives. Advanced information technologies are discussed, including the basic research, implementation of medico-social policies, and the European and global issues in the funding of long-term care for elderly people.

Prisoner's Dilemma Courier Corporation

Can human intelligence thrive in computer hardware? The Silicon Man tells an intensely human, suspenseful story showing how it may be done, sooner rather than later. Five renegade scientists are pursuing secret research to achieve immortality by uploading themselves into silicon. When one relentless investigator threatens everything they have tried to achieve, the outcome will change the world. William Gibson praised this novel as "a plausible, well-crafted narrative exploring cyberspace in a wholly new and

very refeshing way." The Washington Post described it as "a well-plotted, fast-paced, and imaginative look into the future." Science Fiction Review said that it ranks "right up there with Michaelmas and The Demolished Man." And Gregory Benford commented, "In fascinating detail, Platt shows us what it would really be like to live (and breathe!) in cyberspace." Nominated for the John W. Campbell award and the Philip K. Dick award.

How Would You Move Mount Fuji? American Mathematical Society

This fascinating popular science journey explores key concepts in information theory in terms of Conway's "Game of Life" program. The author explains the application of natural law to a random system and demonstrates the necessity of limits. Other topics include the limits of knowledge, paradox of complexity, Maxwell's demon, Big Bang theory, and much more. 1985 edition.

Big Secrets Cambridge University Press

This sharply intelligent, consistently provocative book takes the reader on an astonishing, thought-provoking voyage into the realm of delightful uncertainty--a world of paradox in which logical argument leads to contradiction and common sense is seemingly rendered irrelevant.

Labyrinths of Reason Harper Collins

From the author of Are You Smart Enough to Work at Google?, a fascinating look at how an equation that foretells the future is transforming everything we know about life, business, and the universe. In the 18th century, the British minister and mathematician Thomas Bayes devised a theorem that allowed him to assign probabilities to events that had never happened before. It languished in obscurity for centuries until computers came along and made it easy to crunch the numbers. Now, as the foundation of big data, Bayes' formula has become a linchpin of the digital economy. But here's where things get really interesting: Bayes' theorem can also be used to lay odds on the existence of extraterrestrial intelligence; on whether we live in a Matrix-like counterfeit of reality; on the "many worlds" interpretation of quantum theory being correct; and on the biggest question of all: how long will humanity survive? The Doomsday Calculation tells how Silicon Valley's profitable formula became a controversial pivot of contemporary thought. Drawing on interviews with thought leaders around the globe, it's the story of a group of intellectual mavericks who are challenging what we thought we knew about our place in the universe. The Doomsday Calculation is compelling reading for anyone interested in our culture and its future.

Game Theory and the Law Cambridge University Press

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.

The Complexity of Cooperation Princeton University Press

The Book That Gives the Inside Story on Hundreds of Secrets of American Life --Big Secrets. Are there really secret backward messages in rock music, or is somebody nuts? We tested suspect tunes at a recording studio to find out. What goes on at Freemason initiations? Here's the whole story, including -- yes! -- the electric carpet. Colonel Sanders boasted that Kentucky Fried Chicken's eleven secret herbs and spices "stand on everybody's shelf." We got a sample of the seasoning mix and sent it to a food chemist for analysis. Feverish rumor has it that Walt Disney's body was frozen and now lies in a secret cryonic vault somewhere beneath the Pirates of the Caribbean exhibit at Disneyland. Read the certified stranger-than-fiction truth. Don't bother trying to figure out how Doug Henning, David Copperfield, and Harry Blackstone, Jr., perform their illusions. Big Secrets has complete explanations and diagrams, nothing left to the imagination.

Moral Calculations Little, Brown Spark

A pioneer in evolutionary game theory looks at selfishness and cooperation How does cooperation emerge among selfish individuals? When do people share resources, punish those they consider unfair, and engage in joint enterprises? These questions fascinate philosophers, biologists, and economists alike, for the "invisible hand" that should turn selfish efforts into public benefit is not always at work. The Calculus of Selfishness looks at social dilemmas where cooperative motivations are subverted and self-interest becomes self-defeating. Karl Sigmund, a pioneer in evolutionary game theory, uses simple and well-known game theory models to examine the foundations of collective action and the effects of reciprocity and reputation. Focusing on some of the best-known social and economic experiments, including games such as the Prisoner's Dilemma, Trust, Ultimatum, Snowdrift, and Public Good, Sigmund explores the conditions leading to cooperative strategies. His approach is based on evolutionary game dynamics, applied to deterministic and probabilistic models of economic interactions. Exploring basic strategic interactions among individuals guided by self-interest and caught in social traps, The Calculus of Selfishness analyzes to what extent one key facet of human nature—selfishness—can lead to cooperation.

The Calculus of Selfishness Courier Corporation

This book is the first to apply the tools of game theory and information economics to advance our understanding of how laws work. Organized around the major solution concepts of game theory, it shows how such well known games as the prisoner's dilemma, the battle of the sexes, beer-quiche, and the Rubinstein bargaining game can illuminate many different kinds of legal problems. Game Theory and the Law highlights the basic mechanisms at work and lays out a natural progression in the sophistication of the game concepts and legal problems considered.

Fibonacci’s Liber Abaci Princeton University Press

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

Fortune's Formula Princeton University Press

A famed political scientist's classic argument for a more cooperative world We assume that, in a world ruled by natural selection, selfishness pays. So why cooperate? In The Evolution of Cooperation, political scientist Robert Axelrod seeks to answer this question. In 1980, he organized the famed Computer Prisoners Dilemma Tournament, which sought to find the optimal strategy for survival in a particular game. Over and over, the simplest strategy, a cooperative program called Tit for Tat, shut out the competition. In other words, cooperation, not unfettered competition, turns out to be our best chance for survival. A vital book for leaders and decision makers, The Evolution of Cooperation reveals how cooperative principles help us think better about everything from military strategy, to political elections, to family dynamics.

John von Neumann and the Origins of Modern Computing Yale University Press

The far north coast of Scotland. Spring 1745. It begins with a murder. But is it a murder when someone is forced to kill his brother, so that he might save his own life? The guilty man is a nobody, a poor fisherman. The person who arrogantly and unthinkingly makes him commit this terrible act, simply to see how he behaved, is the richest man in Scotland, the Earl of Dunbeath. Dunbeath invents his game of life the Prisoner s Dilemma. He invites his old friend, David Hume, to Caithness to play the new game with him. But into their planned discussions blow two survivors from a shipwreck - the beautiful and brilliant Sophie Kant and the calm, charismatic captain, Alexis Zweig. What follows is a claustrophobic and fast-moving game of cat and mouse, as the characters drive relentlessly towards their destinies in life and death, love and betrayal and the passion they each have to achieve their different ambitions. Under the game-playing, the deceits and feints, the science and the philosophy, is a simple tale of three utterly determined and ruthless men struggling to the death to succeed in the race for an extraordinary woman. Which of them will win? How? And why? ,