Who’s Counting?

With John Allen Paulos

Social Media Handles

John Allen Paulos (@JohnAllenPaulos) / Twitter

Associated Websites

- John Allen Paulos
- Amazon.com: John Allen Paulos
- John Allen Paulos - Wikiquote

Profile

John Allen Paulos (born July 4, 1945) is an American professor of mathematics at Temple University in Philadelphia, Pennsylvania. He has gained fame as a writer and speaker on mathematics and the importance of mathematical literacy. Paulos writes about many subjects, especially of the dangers of mathematical innumeracy; that is, the layperson's misconceptions about numbers, probability, and logic.

Paulos was born in Denver, Colorado and grew up in Chicago, Illinois and Milwaukee, Wisconsin, where he attended high school. After his Bachelor of Mathematics at University of Wisconsin (1967) and his Master of Science at University of Washington (1968), he received his Ph.D. in mathematics from the University of Wisconsin–Madison (1974).

Career

His academic work is mainly in mathematical logic and probability theory.

His book *Innumeracy: Mathematical Illiteracy and its Consequences* (1988) was a bestseller and *A Mathematician Reads the Newspaper* (1995) extended the critique. In his books Paulos discusses innumeracy with quirky anecdotes, scenarios and facts, encouraging readers in the end to look at their world in a more quantitative way.

He has also written on other subjects often "combining disparate disciplines", such as the mathematical and philosophical basis of humor in *Mathematics and Humor* and *I Think, Therefore I Laugh*, the stock market in *A Mathematician Plays the Stock Market*, quantitative aspects of narrative in *Once Upon a Number*, the arguments for God in

Irreligion, and most recently "bringing mathematics to bear on...biography" in *A Numerate Life*.

Paulos also wrote a mathematics-tinged column for the UK newspaper *The Guardian* and is a Committee for Skeptical Inquiry fellow.

Paulos has appeared frequently on radio and television, including a four-part BBC adaptation of *A Mathematician Reads the Newspaper* and appearances on the Lehrer News Hour, 20/20, Larry King, and David Letterman.

In 2001 Paulos taught a course on quantitative literacy for journalists at the Columbia University School of Journalism. The course stimulated further programs at Columbia and elsewhere in precision and data-driven journalism.

His long-running "ABCNews.com" monthly column *Who's Counting* deals with mathematical aspects of stories in the news. All the columns over a 10- year period are archived here.

He is married, father of two, grandfather of four.

Paulos tweets frequently at @JohnAllenPaulos

Awards

Paulos received the 2013 JPBM (Joint Policy Board for Mathematics) Award for Communicating Mathematics on a Sustained Basis to Large Audiences.[9]

Paulos received the 2003 AAAS (American Association for the Advancement of Science) Award for Promoting the Public Understanding of Science and Technology.[10]

In 2002 he received the University Creativity Award at Temple University[11]

Paulos' article "Counting on Dyscalculia," which appeared in Discover Magazine in 1994, won a Folio Award that year[1]

Publications

Current

Who's Counting? Uniting Numbers and Narratives with Stories from Pop Culture, Puzzles, Politics, and More

For decades, New York Times best-selling author John Allen Paulos has enlightened readers by showing how to make sense of the numbers and probabilities behind real-world events, political calculations, and everyday personal decisions. *Who's Counting?* features dozens of his insightful essays—original writings on contemporary issues like the COVID-19 pandemic, online conspiracy theories, "fake news," and climate change, as well as a selection of enduring columns from his popular ABC News column of the same name.

With an abiding respect for reason, a penchant for puzzles with societal implications, and a disarming sense of humor, Paulos does in this collection what he's famous for: clarifies mathematical ideas for everyone and shows how they play a role in government, media, popular culture, and life. He argues that if we can't critically interpret numbers and statistics, we lose one of our most basic and reliable guides to reality.

Additional Publications

- *Mathematics & Humor: A Study of the Logic of Humor*. University Of Chicago. 1980. ISBN 978-0-226-65024-1.
- *I Think Therefore I Laugh: The Flip Side of Philosophy*. Columbia University Press. 1985. ISBN 978-0-231-06031-8.
- *Innumeracy: Mathematical Illiteracy and its Consequences*. Hill and Wang. 1988. ISBN 978-0-670-83008-4.
- *Beyond Numeracy: Ruminations of a Numbers Man*. Knopf. 1991. ISBN 978-0-394-58640-3.
- *A Mathematician Reads the Newspaper*. Basic Books. 1995. ISBN 978-0-465-04362-0.
- *Once Upon a Number: The Hidden Mathematical Logic of Stories*. Basic Books. 1998. ISBN 978-0-465-05158-8.
- *A Mathematician Plays the Stock Market*. Basic Books. 2003. ISBN 978-0-465-05480-0. (British edition titled *A Mathematician Plays the Market*)
- *Irreligion: A Mathematician Explains Why the Arguments for God Just Don't Add Up*. Hill and Wang. 2007. ISBN 978-0-8090-5919-5.
- *A Numerate Life - A Mathematician Explores the Vagaries of Life, His Own and probably Yours*. Prometheus Books. 2015. ISBN 978-1-63388-118-1.
- Potpourri of Writings
- "He Conquered the Conjecture", essay by Paulos on Grigory Perelman from *The New York Review of Books*
- Metric Mania

- Measuring Bacteria With a Yardstick
- Romantic Crushes and Bayes Theorem
- Stories vs. Statistics, NYT Opinionator piece
- How Much Oil Is Spilling?

More on Paulos' Publications

Recognized as a talented interpreter of mathematical concepts, math professor John Allen Paulos is author of several books on the subject. Paulos became the focus of national attention with the publication of his *Innumeracy: Mathematical Illiteracy and Its Consequences*, which aimed to dispel the myth that math is a dull and impersonal discipline as well as prove that the subject is relevant to the lives of non-mathematicians. Paulos, according to *Washington Post Book World* contributor Curt Suplee, is a "humane and enthusiastic mentor … who does for mathematics what *The Joy of Sex* did for the boudoir interface."

In his first book, *Mathematics and Humor*, Paulos uses principles of mathematics, logic, linguistics, and philosophy to illuminate the relationship between humor and math. Though the essence of humor defies analysis, reviewers praised Paulos for his amusing and perceptive attempt. In chapters such as "Self-reference and Paradox," "Humor, Grammar, and Philosophy," and "A Catastrophe Theory Model of Jokes and Humor," the author, according to *New York Times Book Review* contributor Douglas Hofstadter, "offers a set of metaphors and ways of thinking about humor (and life in general) that, although not new to the mathematically inclined, will be novel and appealing to a wide

audience of nonmathematical readers." Hofstadter continued, "[Paulos's] writing is unpretentious, and his approach is unorthodox and fresh."

Paulos also uses an innovative approach to address the problem of mathematical ignorance in *Innumeracy*. According to the author, innumeracy—the inability to understand basic mathematical concepts—impacts society in a way similar to functional illiteracy. The ability to understand math, however, is often not considered as essential as the ability to read. "I am pained," Paulos remarked in an interview with *Time* contributor Stefan Kanfer, "at the belief that mathematics is an esoteric discipline with little relation or connection to the 'real' world."

Maintaining in *Innumeracy* that the nation's math anxiety results from poor education as well as cultural attitudes and misconceptions about the subject, Paulos, as he noted in a *New York Times Book Review* article, attempts to debunk the idea that "mathematics is … mechanical, the work of low-level technicians who will report to the rest of us anything we absolutely must know." Rather than preach to those afflicted with innumeracy, however, Paulos uses humor and a variety of entertaining examples to illustrate how math and logic can be used in the daily experience of the average person. The reader learns in *Innumeracy* the statistical chances of being a victim of a terrorist attack as opposed to a car crash, the odds of winning the lottery, the difference between a million and a billion and a trillion, how to spot numerically fallacious arguments, and the probability that two strangers will share an acquaintance. Other calculations appeal to the reader's curiosity, including the rate that hair grows in miles per hour and the number of grains of sand that would fill up the earth.

Serendipitously published soon after several studies trumpeted America's mathematical ignorance, *Innumeracy* earned high marks for timeliness and became a best-seller. Reviewers found the book a functional yet engaging guide to applied mathematics. In a *Chicago Tribune* review, Jon Van declared that Paulos "makes numbers, probability and statistics perform like so many trained seals for the reader's entertainment and enlightenment. The big bad wolf of mathematics anxiety is blown away by breezy writing."

Continuing to discuss mathematics in an accessible, inviting fashion, Paulos wrote *Beyond Numeracy: Ruminations of a Numbers Man*. Containing seventy brief, alphabetically arranged chapters, the book explores concepts beyond the realm of the basic mathematics examined in *Innumeracy*. Topics such as game theory, vectors, logarithms, voting systems, chaos, and fractals are deftly explained. "Even the fearsome integral calculus is made downright docile," declared Suplee. Though some reviewers opined that Paulos deals with certain subjects too briefly, *Beyond Numeracy* was well received. Suplee professed that "Paulos's principal genius lies in the recognition that many … humans are 'unknowing mathophiles' who 'have been thinking math all their lives without realizing it.' For those, for anyone, who ever sat rapt at the austere beauty of a [mathematical] proof and later wondered where the wonder went, it's here."

In *A Mathematician Reads the Newspapers* Paulos once again reveals that mathematics is all around us, in ways we may not suspect. "Paulos' method is to latch onto various kinds of news items and use them as springboards into small mathematical discussions," explained *Scientific American* contributor Rudy Rucker. "As Paulos warns

in his introduction, he also like to 'digress, amplify, wax curmudgeonly, and muse.'" Like a newspaper, the book does indeed cover a wide spectrum, and Paulos offers mathematical perspectives on political and local news reporting, business and the arts, sports, and even obituaries. Each chapter title is taken from an actual headline, such as "Rodent Population Patterns Difficult to Fathom" or "Computers, Faxes, Copiers Still Rare in Russia," which Paulos uses as a starting point for discussions on the misuse of statistics, confusion about imprecision (such as the difference between statistical averages and actual values), and the many other ways that numbers can be made to lie, or at least mislead.

In a number of chapters, Paulos leaves the realm of pure mathematics to pursue more general failures in logic, such as the "halo effect" that makes us overvalue the opinions of people from prestigious institutions and the "availability bias" that can draw us toward false analogies based on their emotional power. Some of this inevitably gets subjective: Is a professor from Harvard more likely to know his subject than a community college instructor? Is Iraq analogous to Vietnam in any way, or is that a case of availability bias? Some critics felt that Paulos blurred the lines between proof and conjecture. *Technology Review* contributor Arnold Barnett faulted the book for "incomplete arguments, and statements that are not supported if not intrinsically unsupportable." Others appreciated Paulos' excursions into so many intriguing areas. *Reason* reviewer Brian Doherty commended "Paulos' quiet good sense and wide-ranging mind." For Doherty, Paulos' book "is simply nifty, larded with clever and informative tidbits."

Paulos crosses boundaries again in *Once Upon a Number: The Hidden Mathematical Logic of Stories*. Paulos' goal is to bridge a longstanding gap. As he explains, "Describing the world may be thought of as an Olympic contest between simplifiers-scientists in general, statisticians in particular-and complicators-humanists in general, storytellers in particular. It is a contest both should win." By looking at the statistical assumptions in certain stories, and the surrounding context of certain statistics, Paulos seeks to show the way to a fuller understanding of reality. The Bible Code, for example, is based on a misconception about how easy it is to find different words in a lengthy document. (And Paulos has fun finding "Bill" and "Monica" in the U.S. Constitution.) At the same time, Paulos believes that "applying probability and statistics is much more a matter of comprehending the situation, of creating informal arguments, and of building comprehensive narratives than of substituting numbers into formulas," as *Skeptical Inquirer* contributor Mark Durm reported. "Paulos is both an amusing, enchanting raconteur and a mathematician. He draws on both skills in this book," noted *Booklist* reviewer Patricia Monaghan. A *Publishers Weekly* reviewer concluded, his "insightful and amusing observations on how the truths discovered through mathematics should be applied to our everyday lives will appeal to an audience beyond math and science enthusiasts."

In *A Mathematician Plays the Stock Market* Paulos puts his money where his math is—and uses his own misfortune to provide a valuable lesson for other investors. Drawing on quantitative economics and a series of mathematical models, Paulos concluded that high-flying telecommunications company WorldCom was the place to invest in 2000. After two years of investing, reinvesting, and luring friends and relatives

to invest in WorldCom, Paulos finally sold his stock at a huge loss, just months before the share price collapsed completely in the wake of an SEC investigation. His book "provides an entertaining and instructive account of his plunge into maniacal investing," according to Hal Lux in the *Institutional Investor*.

In other hands, this might be a simple tale of woe or another cautionary tale about overconfidence and stock market bubbles. With Paulos, of course, it is instead "a first-rate exploration into the math of the market: heuristic numeracy at its best," as a *Kirkus Reviews* contributor put it. Starting with the simple mathematical concepts behind investing, such as compound interest and price/earnings ratios, Paulos moves on to the more complicated mathematics of wave theory, moving averages, and regression to the mean that underlie, and sometimes confound, sophisticated investment models. "The math he introduces is easily understood … and Paulos gives copious examples," noted *Library Journal* contributor Lawrence Maxsted. He also takes a look at psychological variables, such as the influence of herd mentality, and other factors that are difficult, if not impossible, to quantify. In the end, Paulos finds that the many schemes and techniques available to investors just aren't terribly reliable, a lesson he learned the hard way-but can pass on to readers willing to make a considerably more modest investment of time and money. "Playful and informative, Paulos's book will be appreciated by investors with a sense of humor," concluded a *Publishers Weekly* reviewer.

- Innumeracy Summary, Review PDF