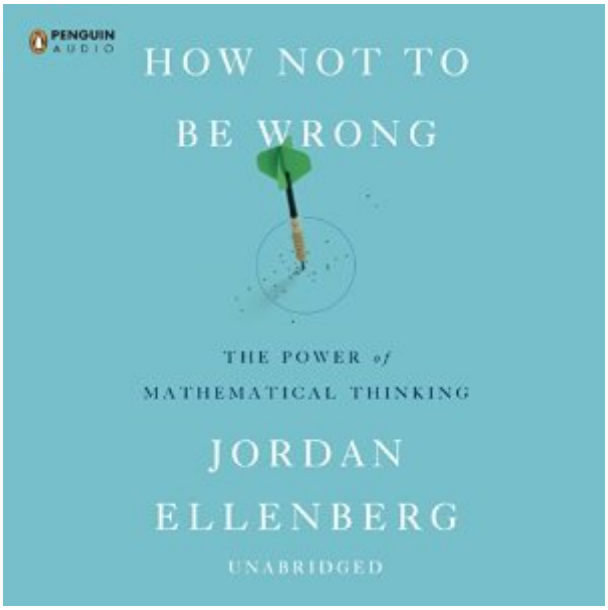
How Not To Be Wrong: The Power Of Mathematical Thinking



Synopsis

The Freakonomics of math - a math-world superstar unveils the hidden beauty and logic of the world and puts its power in our hands.The math we learn in school can seem like a dull set of rules, laid down by the ancients and not to be questioned. In How Not to Be Wrong, Jordan Ellenberg shows us how terribly limiting this view is: Math isn't confined to abstract incidents that never occur in real life, but rather touches everything we do-the whole world is shot through with it. Math allows us to see the hidden structures underneath the messy and chaotic surface of our world. It's a science of not being wrong, hammered out by centuries of hard work and argument. Armed with the tools of mathematics, we can see through to the true meaning of information we take for granted: How early should you get to the airport? What does "public opinion" really represent? Why do tall parents have shorter children? Who really won Florida in 2000? And how likely are you, really, to develop cancer? How Not to Be Wrong presents the surprising revelations behind all of these questions and many more, using the mathematician's method of analyzing life and exposing the hard-won insights of the academic community to the layman-minus the jargon. Ellenberg chases mathematical threads through a vast range of time and space, from the everyday to the cosmic, encountering, among other things, baseball, Reaganomics, daring lottery schemes, Voltaire, the replicability crisis in psychology, Italian Renaissance painting, artificial languages, the development of non-Euclidean geometry, the coming obesity apocalypse, Antonin Scalia's views on crime and punishment, the psychology of slime molds, what Facebook can and can't figure out about you, and the existence of God. Ellenberg pulls from history as well as from the latest theoretical developments to provide those not trained in math with the knowledge they need. Math, as Ellenberg says, is "an atomic-powered prosthesis that you attach to your common sense, vastly multiplying its reach and strength." With the tools of mathematics in hand, you can understand the world in a deeper, more meaningful way. How Not to Be Wrong will show you how.

Book Information

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Customer Reviews

I run across a lot of books that I add to my to-be-read list and then forget about until after their publication dates or I stumble upon the book in the library or bookstore. How Not to Be Wrong was initially one of those books, but it sounded so good that I found myself obsessively thinking about it and started a search for a pre-publication copy. Since I'm not a librarian, didn't win a copy via First Reads, and don't have friends at Penguin Press, it took some time and effort, but having procured a copy and read it, I can say that it was well worth my time and $6.00. How Not to Be Wrong is a catchy title, but for me, this book is really about the subtitle, The Power of Mathematical Thinking.Ellenberg deftly explains why mathematics is important, gives the reader myriad examples applicable to our own lives, and also tells us what math can't do. He writes, Ã¢Â ÂœMathematics is the extension of common sense by other meansÃ¢Â Â•, and proceeds to expound upon an incredible number of interesting subjects and how mathematics can help us better understand these topics, such as obesity, economics, reproducibility, the lottery, error-correcting codes, and the existence (or not) of God. He writes in a compelling, explanatory way that I think anyone with an interest in mathematics and/or simply understanding things more completely will be able to grasp. Ellenberg writes Ã¢Â ÂœDo the MathÃ¢Â Â• for Slate, and it's evident in his column and this book that he knows how to explain mathematical ideas to non-mathematicians, and even more so, seems to enjoy doing so with great enthusiasm. I won't pretend that I understood everything discussed in this book, but it's such an excellent book that I also bought the hardcover (so I have an index which my pre-pub copy does not), and reread the book so I do have a much more thorough understanding. I've wished for a book like this for a long time, and I'd like to thank Jordan Ellenberg for writing it for me!

Review edited: 3/15/2015Let me save you your money and give you the two best pieces of advice in this book: instead of looking for reasons why you could be right, look for reasons why you could be wrong. Humans are prone to confirmation bias--trying to confirm what we want to be true. Determine where your biases are and attempt to remove them. If you don't want to be wrong, constantly look for reasons why you could be wrong. Second, always evaluate the assumptions that you are making

and determine whether or not those assumptions are true. The best part of the book was at the very beginning with the chapter on Abraham Wald, which explains this lesson beautifully. If you want to read that story, check this book out from the library and save yourself the money...the rest of the book was largely a waste of my time and money.Unfortunately, I made both those mistakes when purchasing this book. I assumed that this would be a highly logical book with mathematical reasoning....wrong. It amazes me that an author, writing about how to not be wrong showed so many examples of biased and illogical thinking. Other reviewers have gone into the political bias but there were other claims that I found to be a bit more troubling. Everything you do either prevents or causes cancer? You've got to be kidding me.....so, which end of this false dichotomy does reading "how to not be wrong" get me? ....."The null hypothesis is almost always false".....nope, wrong again. Unfounded, illogical, and biased claims abound in this book.The irony here is that you likely can't take my review seriously because my review is likely just as biased as all the others. In order for you to determine whether or not "how to not be wrong" is in fact a book worth your time and money is for you to buy it and evaluate it for yourself. Simply taking my word for it would be wrong. So, given this fact, I highly recommend you rent this from your local library rather than believing the 5 star reviews (wanting it to be as good as they say it is and as good as I hoped it would be) or reviews like mine that simply were unimpressed. And that, my friends, is how to not waste your money!*Let me be clear in that I do think that this book does have value. I think it does teach the importance of mathematical reasoning and each chapter does have value in that regard. The question you have to ask is whether you can get past the authors biased claims (he really does have a political bias, though who doesn't?) and whether you can recognize instances when he is making assumptions that aren't verifiable (cancer, stocks, etc.). This book can be a very good exercise in mathematical reasoning if you bring the knowledge that not everything the author states is going to be absolutely correct and question his claims. Certainly no one is going to be perfect when it comes to logical/mathematical reasoning, even mathematicians can exhibit flaws in logical reasoning. However, the purpose of my review is that if you are looking for books to teach you this and teach you well, there are better sources. Such as the one I mentioned previously.If you are truly interested in improving your logic and using mathematical thinking to "not be wrong" then a much much better way to invest your money is in "Your deceptive mind" by Professor Steven Novella. Yes, its more expensive but absolutely fantastic.

I've already been recommending this book to family and friends, so I thought I'd take a few moments to recommend it to strangers on the internet, too.This book, as anyone who is familiar with

Jordan Ellenberg’s writing (or speaking!) would expect, is written in an entertaining, witty, and engaging style. Each chapter of the book is framed by one or two major, motivating questions, such as:- What parts of military aircraft should get the most armor?- Is it ever a good idea to play the lottery?- How should votes be counted in a democracy?The answers that mathematical thinking asks you to accept are often surprising and unintuitive, but Jordan guides the reader through the fog of potentially-complicated arguments with a conversational style rife with clear, succinct examples and amusing historical anecdotes. In the hands of other writers, the mathematics in this book may be dull, or technical and complicated, or all of these things; but with How Not To Be Wrong, Jordan has instead created a book that you will eagerly and (mostly) effortlessly consume.To put it another way: Steven Pinker said that "assumption of equality between writer and reader makes the reader feel like a genius, [while] bad writing makes the reader feel like a dunce." Jordan Ellenberg makes the reader feel like a genius.Finally, regarding another reviewer’s comments about the author’s "liberal bias", I’d like to point out that I had the exact opposite impression while reading this book. Whenever politics were considered, I thought Jordan was even-handed and stuck to the mathematics at hand without wading into any political commentary. While I have liberal political ideals, and I avoid talking about politics with the more conservative members of my family, I would not feel uncomfortable recommending or gifting this book to any of them. This simply is not a book about politics, and I’m surprised that anyone would would have their political feathers ruffled when reading it.

Kids’™ Math Analogies, Grade 3 (Thinking Kids (Carson-Dellosa)) Thinker's Guide to Analytic Thinking: How to Take Thinking Apart and What to Look for When You Do Curriculum and Aims, Fifth Edition (Thinking about Education) (Thinking About Education Series) Computational Design Thinking: Computation Design Thinking Thinking about Hinduism (Thinking about Religion) Strategies, Techniques, & Approaches to Critical Thinking: A Clinical Reasoning Workbook for Nurses, 5e (Strategies, Techniques, & Approaches to Thinking) Design Thinking Workshop: The 12 Indispensable Elements for a Design Thinking Workshop