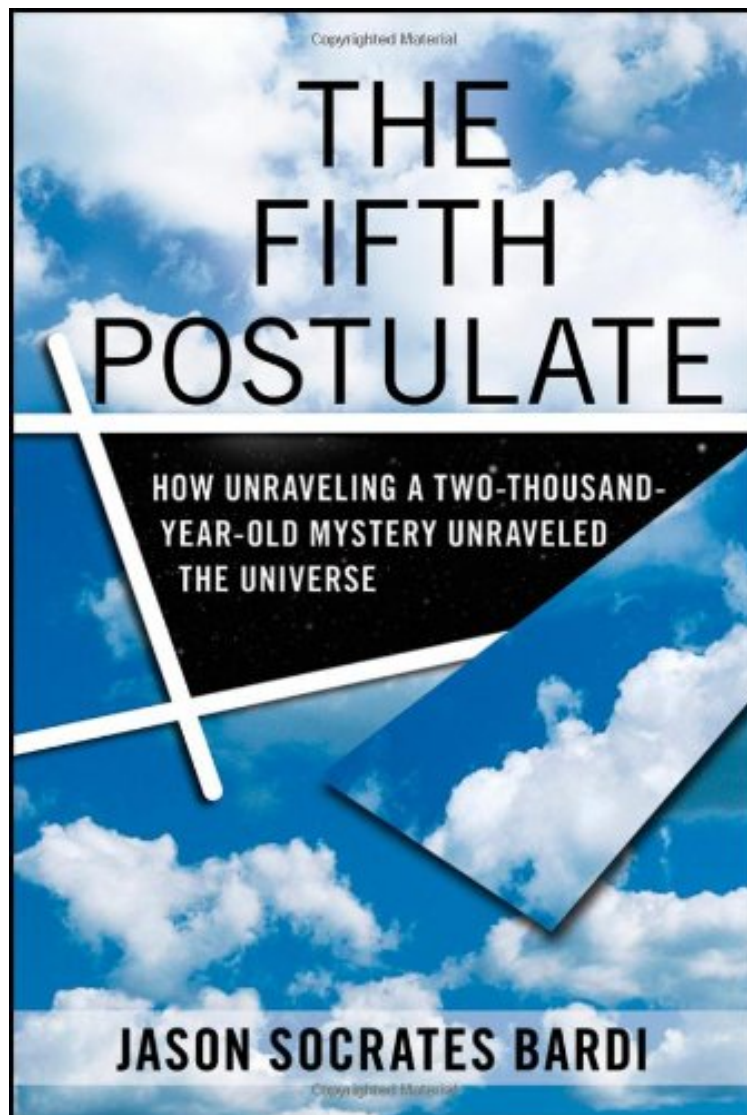


(Library ebook) The Fifth Postulate: How Unraveling A Two Thousand Year Old Mystery Unraveled the Universe

## The Fifth Postulate: How Unraveling A Two Thousand Year Old Mystery Unraveled the Universe

*Jason Socrates Bardi*

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#3064115 in Books Jason Socrates Bardi 2008-12-01 Original language: English PDF # 1 9.30 x 1.20 x 6.101, 1.03 #File Name: 0470149094272 pages Fifth Postulate How Unraveling a Two Thousand Year Old Mystery Unraveled the Universe | File size: 66.Mb

**Jason Socrates Bardi : The Fifth Postulate: How Unraveling A Two Thousand Year Old Mystery Unraveled the Universe** before purchasing it in order to gage whether or not it would be worth my time, and all praised The Fifth Postulate: How Unraveling A Two Thousand Year Old Mystery Unraveled the Universe:

7 of 7 people found the following review helpful. Biography History, Not Math By Timothy Haugh I have taught math and physics in high school for some fifteen years. Of the math classes I have taught, my favorite is probably geometry. I like it because it invites a logical development that is often passed-over in other math classes. Of course, at this level, what we teach is Euclidean geometry, which is based on a number of postulates; most famously, the "fifth postulate" or "parallel postulate," which, essentially, assumes the existence of parallel lines. Even in antiquity, however, this assumption was rather controversial. For millennia, mathematicians tried various, often very clever, ways of proving it. All failed. And yet, it seemed absolutely essential for the soundness of mathematics that it be proved. Ultimately, in the nineteenth century, a trio of mathematicians working independently each came to the conclusion that it was possible to develop a completely consistent geometry without the parallel postulate. These "non-Euclidean" geometries, so called, would have a tremendous impact, not only on mathematics but also on our understanding of the universe. In his new book, *The Fifth Postulate*, Mr. Bardi tells the history of this idea: attempts to prove it and its ultimate rejection, leading to a new mathematics. Primarily, this is a work of biography. The focus of the book is on one of the greatest mathematicians of all time, Carl Friedrich Gauss, with additional background on Nikolai Lobachevsky and Janos Bolyai as well as a number of other mathematicians, both major and minor, who impacted the problem. But it is these three mathematicians who really gave the world non-Euclidean geometry though, as Bardi rightly points out, it would be decades after their deaths before their work would receive the recognition it was due--not so much a problem for Gauss, who was a well-known, world-class mathematician from an early age, but more of an issue for the provincial Russian, Lobachevsky, and the rattled young soldier, Bolyai. They would never know the ultimate importance of their work. It might not matter to some but, if there is a weakness in this book for me, it is that there is simply not much math in it. Granted, I'm already familiar with the math involved; however, I would have liked to have seen some examples that illustrated the importance of the parallel postulate to Euclidean geometry and some examples illustrating the meaning of changing it. I never really got a sense from this book as to what non-Euclidean geometry "looks like." And I don't mean problems to work out. I mean, maybe some diagrams and physical examples. I'm always looking for good readings to bring into the classroom. This one will be great for history but won't help me much with the math. But that is a small quibble. As a history and a biography, it works well. He is also very good at showing how non-Euclidean geometry influenced our understanding of the universe; in particular, we live in a non-Euclidean universe, as Einstein showed us. And, anyway, I'm sure it was not Mr. Bardi's intention to delve deeply into the math; however, I would have liked it more had he done more. As long as the reader understands what's here, there's no reason to complain.

1 of 1 people found the following review helpful. Did not bother to define parallel

By EREuclid's Book I, definition 23 in the Elements: "Parallel straight lines are straight lines which, being in the same plane and being produced indefinitely in both directions, do not meet one another in either direction," So to summarize, by definition, in the plane, two lines are parallel if they do not intersect. This is the most common definition of parallel, as it can be easily extended to other non-Euclidean geometries. On page 2 of his book, Bardi writes that the Fifth postulate states that "two lines that are not parallel will cross if they are in the same plane." This is completely incorrect. By definition, if the lines don't cross, then they are parallel. Thus, by the contrapositive, if they are not parallel, then they must cross. By not carefully explaining either the definition of parallel or what, in fact, the fifth postulate is really saying, the book bumbles the mathematics (which makes it very difficult to read).

1 of 1 people found the following review helpful. Perhaps a little less history and a few diagrams would have helped

By Kindlekids I was disappointed in the book for many of the reasons cited in other reviews -- no diagrams, uneven/disproportionate treatment of major characters (viz., Gauss). If I had known there would be no diagrams, I wouldn't have spent the \$\$ I did for the book. Also, and don't mean to sound churlish, but I should have known, a page or two into the introduction, when the author was recounting how amazing it was that he could finish a book while holding down a prestigious, full-time position in "management", and asked himself rhetorically: "...how do I do it?" Maybe the answer is that he wrote close to 300 pages of largely anecdotal, and entirely non-quantitative history. Maybe I missed it, but I saw nothing on Klein bottles, mobius strips, etc., which is what I kind of thought might be covered.

The great discovery that no one wanted to make It's the dawn of the Industrial Revolution, and Euclidean geometry has been profoundly influential for centuries. One mystery remains, however: Euclid's fifth postulate has eluded for two thousand years all attempts to prove it. What happens when three nineteenth-century mathematicians realize that there is no way to prove the fifth postulate and that it ought to be discarded along with everything they'd come to know about geometry? Jason Socrates Bardi shares the dramatic story of the moment when the tangible and easily understood world we live in gave way to the strange, mind-blowing world of relativity, curved space-time, and more.

"Jason Socrates Bardi tells the story of the discovery of non-Euclidian geometry one of the greatest intellectual advances of all time with tremendous clarity and verve. I loved this book."

John Horgan, author, *The End of Science and Rational Mysticism*

"An accessible and engrossing blend of micro-biography, history and mathematics, woven together to reveal a blockbuster discovery."

David Wolman, author of *Righting the Mother Tongue and A Left-Hand Turn around the World*

From the Inside Flap What do Einstein's theory of relativity, string theory, and lots of other mind-bending and space-bending revelations of modern physics have in common? None of them could have been discovered until scientists and mathematicians recognized an uncomfortable truth that there was a reason the world's greatest mathematical minds had failed to prove Euclid's fifth postulate after more than two thousand years of effort: the postulate, which defines the nature of parallel lines and space, was untrue. In *The Fifth Postulate*, acclaimed science writer Jason Socrates Bardi tells the perplexing tale of what happened when, in the early 1800s, three great mathematicians, working independently, came to the same profound conclusion. Not only was the postulate unprovable, but discarding it opened an entire new universe of non-Euclidian geometry, in which the recognition that space is curved solved scores of previously insolvable problems and laid the groundwork for a host of new discoveries to come. Which of these brilliant thinkers would claim credit for this momentous discovery? None of them. Why would the reigning genius of his day hide his manuscripts and barely mention their conclusions and back away in horror from what was arguably the greatest logical insight in the history of science? Why would the respected head of a European university face confusion and ridicule when trying to publish the same discovery? And why would a promising young army engineer find the secret and then retire, trying not to think about it anymore? This bizarre true story of reluctant discovery recounts the little-known tale of the strangely parallel, triumphant, and tragic lives of Jnos Bolyai, Carl Friedrich Gauss, and Nikolai Lobachevsky. It examines a world of science in which the objective quest for new truth is inhibited by blind adherence to an old, unproven postulate mainly because of fear that, if it were untrue, everything that was known about geometry, nature, and the universe itself would have to change. Even more surprising is the story of an eighteenth-century priest who, in an attempt to illustrate the absurdity of a world without the fifth postulate, stumbled upon and described non-Euclidian geometry without ever having understood the importance of what he had found. You'll also meet the mathematician who spent much of his life searching for a proof to the postulate, only to discover that his close friend Gauss had discarded it years before but had never told him. Packed with fascinating anecdotes and insights, as well as crystal-clear explanations of complex mathematical concepts, *The Fifth Postulate* is compelling reading for anyone interested in the history of science and mathematics and the politics of discovery. It is also a chilling cautionary tale about the fragility of truth whose lessons are as pertinent today as they were two centuries ago.

About the Author Jason Socrates Bardi, author of *The Calculus Wars*, holds master's degrees in both science writing and molecular biophysics from Johns Hopkins University.