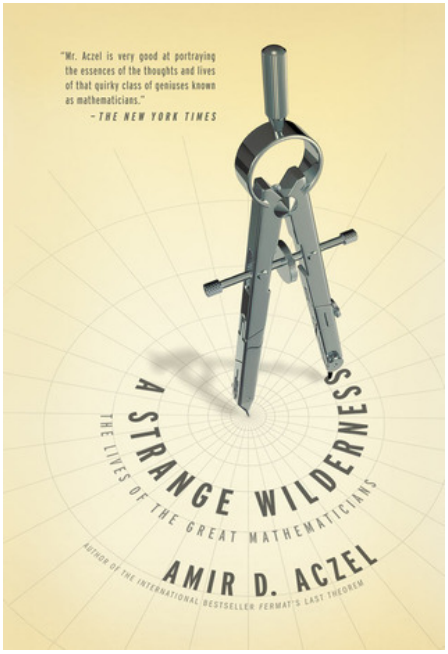

A Strange Wilderness: The Lives of the Great Mathematicians

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Duels, battlefield heroism, secret societies, theft, imprisonment, and feuds fill the pages of *A Strange Wilderness*. As exciting as any action/adventure novel, this is actually the story of incredible individuals and engrossing tales behind the most profound, enduring mathematical theorems.

Archimedes famously ran naked through the streets shouting, “Eureka, eureka!” after finding a method for measuring the volume of an irregular-shaped object. René Descartes was not only a great French mathematician, philosopher, physicist, and natural scientist; he was also an expert swordsman who traveled with European armies from town to town, dressed in green taffeta and accompanied by a valet. Georg Cantor grappled with mental illness as he explored the highly counterintuitive, bizarre properties of infinite sets and numbers. Emmy Noether struggled to find employment as she laid the mathematical groundwork for modern theoretical physics. And Alexander Grothendieck taught himself mathematics while interned in Nazi concentration camps, only to disappear into the Pyrenees at the zenith of his career.

These are just a few stories recounted in this absorbing narrative. In probing the lives of the preeminent mathematicians in history, *a Strange Wilderness* will leave you entertained and enlightened, with a newfound appreciation of the tenacity, complexity, and brilliance of the mathematical genius.

A Strange Wilderness: The Lives of the Great Mathematicians Details

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From Reader Review A Strange Wilderness: The Lives of the Great Mathematicians for online ebook

Jeremy Hui says

Amir D. Aczel's A Strange Wilderness recounts the evolution of mathematics. Azcel depicts the essences of thoughts and eccentric lives of history's foremost mathematicians. The book explores the impact of historical events towards the development of modern mathematics, our art of logical reasoning.
A Strange Wilderness presents a systematic overview of mathematics' advancements. Azcel's chronological organization helps readers retain information in a methodical manner. Unlike standard lectures, A Strange Wilderness probes the fascinating lives of mathematicians. Azcel incorporates memorable stories that entertain and enlighten readers. The book's unique approach to mathematics is absorbing and remarkable.
Azcel's A Strange Wilderness will interest readers who are passionate about mathematics. The book encompasses controversial paradoxes to the extent of differential equations. Readers need a solid foundation in mathematics to understand the proposed material. In general, people captivated by mathematics are recommended to read this book.
A Strange Wilderness holds a rating of 4/5. Although Azcel includes entertaining stories of profound mathematicians, the book tends to overwhelm readers. Countless facts, equations, and postulates are presented. Even with Azcel's unique approach to mathematics, certain readers won't retain large quantities of information. Yet, A Strange Wilderness enlightens its readers with newfound appreciations to the brilliance of mathematics. Enthusiasts of mathematics are "mathematically obligated" to read Amir D. Azcel's A Strange Wilderness.

Mary says

Warning: You need to have a much better math background than mine to really enjoy everything that is in this book. I know you are curious, so 9th grade Algebra (barely), Senior Math Review, Logic, Math for Teachers, and Statistics. I wish I had been a better math student.

Pretty much a brief survey of famous mathematicians from antiquity to the 20th Century. Some biographical information, interesting facts, and description of their contribution.

Janet says

The math was way above my head but I enjoyed learning about all these brilliant mathematicians.

Courtney says

Math and science were my two favorite subjects in school and to this day I love when I'm challenged with a difficult problem at work. I was intrigued with the description of this book, to learn more about the lives of the great mathematicians, to learn more about the men (and women!) behind the equations we all memorized in high school. This book turned out to be more about math than about the mathematicians behind the math.

It was an exciting read at first, learning about the Greeks and Egyptians, the philosophers, the East, and the math that was developed during this time. I was especially excited that I could follow much of the math described! But as the book progressed to more recent history, I was expecting the stories of the mathematicians to have passion, excitement, and details, but the stories were more facts than passion and loaded with math. It's understandable to have the descriptions of the math associated to the particular person, but I was expecting the math to be the side-note to the life story, but I found the stories to be the side-note to the math. Details were left out of stories that would have added intrigue, such as the story about the two young researchers who were looking for Grothendieck's hideout in the final pages of the book. The author says they used clever tricks and laid a trap but does not elaborate anymore on the tricks or trap, only that the mathematician agreed to talk to them. What made this man who was intentionally hiding in the Pyrenees agree to talk to them? I want to know! But no further details were provided.

Ultimately I was disappointed with what could have been a great read. It turned out to be more of a math book than biographical.

Thank you Goodreads First Reads for my copy of this book!

Ben Babcock says

On my last official day with my Grade 8 class, I did not want to teach them more about fractions. Instead I had asked them to submit a question they had about mathematics—anything, from something they'd learned earlier in the year but didn't understand to a question that had been simmering since sixth grade. The cards I got back were all across the scale, from earnest to uninterested. Quite a few were about pi. I decided to take the questions and weave them into a broader narrative about the use, purpose, and history of mathematics. I wanted to talk about *how* we figured out math and discuss some of the milestones in mathematical discovery. Prezi has become a pretty big deal at my university's faculty of education, but until now I had avoided it. I decided that I should probably make at least one before I was finished my undergraduate degree. Plus, my partner student teacher had the Grade 8s make their own prezis for a history project. So I made my first prezi to talk to Grade 8s about math.

Part of my goal as a teacher is to expose my students to the wider world of mathematics, to impress upon them that math is more than just skills and concepts they learn out of a textbook in the fulfilment of curriculum expectations. I want to make the usefulness and purpose of all that math explicit—and I want to go even further and show that math can be beautiful. Finally, it's important to provide a sense of history and context to all this math. Because the history of mathematics—and the lives of those caught up in it—is intensely fascinating. Or at least I find it so. Stories of love, betrayal, comedy, and tragedy pervade story of math. Because doing math is ultimately an act of discovery and of creativity—and those acts are what make us human.

Amir D. Aczel recognizes this in *A Strange Wilderness*, which is a history of mathematics disguised as a biography of mathematicians. He makes it his mission to relate the stories behind the math, such as Pythagoras' travels and interesting diet to Archimedes' famous bathtub epiphany. (Lucky for me, my Grade

8s had not heard the Eureka! story, despite having just concluded their unit on fluids. So I got to tell it to them for the first time!) This is a laudable goal, and one that coincides with my own. Owing to the way it's taught in school, we often treat mathematics like received wisdom, far more than we do even science. Mathematical concepts just exist, passed down to us by the teacher and the textbook. It's difficult, if you don't actually go out and look for it, to realize that someone had to ask the questions and make the leaps that gave us these concepts. These people were all living, breathing individuals at some point in history, with the same mundane concerns as any human being. For reason, though, through a combination of genius and effort and luck, they made a lasting contribution to our wealth of knowledge as a species.

Aczel brings a wealth of knowledge and enthusiasm to this endeavour. I discovered a lot of cool things about names I already knew, and I met a few fresh faces as well. I marvelled at the chain of events that led to people like Isaac Newton becoming the juggernauts of their day. Newton's mother, after abandoning him for a new husband, apparently pulled him out of grammar school to live on a farm. It was only through the intervention of his uncle that he returned to finish his education and end up at Cambridge. I shudder to imagine how history would have played out differently if Newton had stayed on a farm!

Of course, a book this size can't do justice to the history of mathematics or all the mathematicians involved in it. Aczel seems to do his best to hit the high notes. That being said, he makes some curious decisions about who to leave out. In particular, the book seems to start off strong but lose steam, and by the time we reach the twentieth century, great minds like Lebesgue, Zermelo, Russell, Hilbert, and Gödel get cameos if they're mentioned at all. I don't know if this is just a consequence of the rather dense nature of twentieth-century mathematics compared to the previous centuries or if Aczel was worried about the complicated nature of the math. Certainly he focuses less on the math itself and more on the mathematicians, as is the case with the final mathematician, the reclusive Alexander Grothendieck. I guess you can't please everyone, of course, and Aczel does his best while trying to keep the book to a manageable length.

As you might be able to tell, I'm passionate about the history of mathematics. While I'm sure Aczel is too, I have to confess that the stories in this book come across much drier than they should. Maybe it's a result of reading so many short biographies back to back—it's just a steady diet of mathematical dessert. Whatever the reason, as much as I enjoyed *A Strange Wilderness* in small doses, it took me longer to read than I expected. There's something to be said for books with narrower scopes and their ability to take a detailed look at the lives of a select few.

In combination with other resources, for it is certainly not exhaustive, *A Strange Wilderness* is a fine book on the history of mathematics. People who aren't that familiar with (or comfortable) with math shouldn't have a problem reading this book. Aczel will often discuss the details of the mathematics that his featured geniuses discovered. However, he characterizes the most esoteric items (like group theory) in very general terms, and even when he gets a little more specific (such as with his discussion of Leibniz and Newton's calculus), it's never too technical. The math in this math book consists mostly of shout-outs, an understanding of which is far from essential for enjoying this book.

As usual, it comes down to what you want out of your mathematics book. If, like me, your interest in the history of mathematics burns bright and you're familiar with quite a few of these lives already, then there are probably better books dealing with more specific topics. You can certainly discover new things in this book, but it won't blow you away. This is definitely a good starting point, however, for those who know that mathematics has some interesting stories to tell but just aren't sure where to find them.

David says

Not very strange.

Although I did like this:

"There is a little-known story involving [mathematicians Andre] Weil, [Jacques] Hadamard, and the famous French anthropologist Claude Levi-Strauss. With the Nazi conquest of Paris in 1940, these three Jewish men found it extremely dangerous to stay in France (Weil had also deserted the French army), so they traveled to New York. Hadamard had a visiting professorship at Columbia University, and Levi-Strauss was trying to make sense of the complicated marriage laws of the aboriginal Murngin tribe of northern Australia. At some point he came to the realization that the problem was highly mathematical, so he visited Hadamard at Columbia and asked for help. Hadamard listened to him sympathetically, and then replied,

> 'Mathematics has four operations: addition, subtraction, multiplication, and division - marriage is not one of them.'

Levi-Strauss was disappointed by Hadamard's response, but he didn't give up. Some days later he found Weil, Hadamard's former student. Weil studied the Murngin marriage rules the anthropologist showed him, and he found that, indeed, the problem was deeply mathematical and very complicated. (According to Murngin marriage laws, a man must marry one kind of cousin, if she exists, but is absolutely forbidden to marry a woman who happens to be another kind of cousin. Similar rules hold for women. This leads to the existence of sets of people within the tribe who, in turn, are either must-marry or taboo.) Weil was intrigued, and he ended up solving the problem (of determining the long-term structure of a society that follows these intricate marriage laws) using the abstract mathematics of group theory. It was an applied piece of work he remained very proud of throughout his life, even though he was otherwise a pure mathematician." (p. 243-244)

Stephen Hackney says

I am a big fan of Amir Aczel. I have all of his books (I think), and have read several. However, this book, while containing some very fascinating background information on a number of mathematicians through history, leaves much to be desired. I think it is the author's approach, the format used in leading the reader from the ancient, early mathematicians up to the 20th century, that is bothersome. While there are several tantalizing bios of individual characters, such as Galois, or Alexander Grothendieck, I think the author just did not quite reach his peak in providing the level of content that the reader deserves. In retrospect, perhaps it is worth reading this book to get to the final 11 1/2 pages to read about the life of Alexander Grothendieck. What a life's story, overcoming the odds, yet purposely falling back into obscurity . . . I have to know more about this individual mathematician/activist/recluse. Because I've so enjoyed the author's other works, and I have about another eight works of his to read, I will forgive the author for this less-than-fulfilling work, and push on to enjoy his other books.

Jozeee says

Amazing book! I read about some mathematicians I haven’t seen mentioned in other math books and I’ve

read a lot of them! Less about math and more about history.

Daniel says

I enjoyed reading about different mathematicians. It makes me want to know more math so I can solve math problems like the mathematicians profiled in the book.

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dejah_thoris says

After reading most of Aczel's oeuvre, this book a great excerpt of his longer books on specific aspects of math history. Each chapter covers a short time period and the stories behind the major figures in mathematics are well fleshed out compared to their novel-length treatments. There's also many more illustrations compared to the longer works. Although most of the book was review for me, I appreciated the additional sections on early Arab and Chinese mathematicians, which were touched on in other works, but not completely developed. It was also nice to have a whole overarching understanding of the entire history of mathematics at once instead of getting it in little chunks. Would definitely recommend as a source for middle and high-school students tasked with preparing brief biographies or for anyone interested in knowing more about the history behind the field. As always, Aczel's technical writing is fairly accessible for the layperson, so don't be frightened off by learning new concepts!

Bryan Higgs says

Ordinarily, I like such books, and have read quite a few of them. However, I found this one a little on the lifeless side -- too much a short description of facts which left me not much impressed. I've read quite a few books on the history of mathematics (both specific and general) that were much better than this one, so I'm trying to figure out what the difference was. Here are my conclusions:

1) The descriptions were a little too cold and purely informative to me. They didn't have much life to them.

2) Unlike some other reviews of this book I've read, I felt that the book lacked enough detail on the mathematics that the characters were responsible for. (Some of the other reviews said that they couldn't follow the math, which surprised me because what was covered was pretty elementary, and lacked detail.) The other books I'd read had a more balanced approach -- often alternating chapters of history with the math (albeit not in great detail -- these were all laymen's books)

3) There were some odd omissions -- the most obvious to me was Bernhard Riemann, who was mentioned but was not given the same coverage as others. Also, while the relatively recent solution of Fermat's Last Theorem was mentioned, I would have thought that it merited a little more coverage -- although perhaps Andrew Wiles, the major contributor to that solution may not yet be considered one of the great mathematicians.

4) I did like the fact that this book contained images of various kinds (one common shortcoming of such books is that they often rely too much on just text, with minimal visual aids). While there were some pictures of mathematical items, I felt that there were not enough of these -- but that would have required more text

about the math, in order to explain it.

5) This book seems to end rather abruptly. Surely some kind of summary would have been appropriate?

This said, the book is an easy read. The author, Amir Aczel does have a pleasant style.

Jennifer Ware says

hahahahaha! The math was waaaay over my head! I requested this book on a lark because I know someone extremely talented in math. I received the book from Goodreads.com for free. It was fascinating to learn that trigonometry, geometry and algebra came 100's of years before the basic math that I can do. Those mathmaticians led wild lives...duals to the death, scandalous affairs, imprisonment, torture and silver alloy fake noses... The book was well written and held my attention even during the long explanations of the math problems.

Marva Whitaker says

I won this book from the goodreads giveaway, and as an advanced copy it still had some grammatical errors and was missing a few pictures/diagrams. But it was an interesting read and really accessible.

Hyung Mook Kang says

Short book for history of mathematics, but great book for the reason that it's intriguing. A bit disappointing that very short references of Riemann and Godel is being presented.

Sajith Kumar says

Some people among us don’t relish the prospect of studying mathematics. The probable reason for this aversion is mostly improper assimilation of fundamentals caused due to lapses in the method of teachers who taught them in primary schools. Such people opt for the inexact sciences like biology or humanities like history when the time comes to make a choice. However, reading about the development of mathematics and the lives of its pioneers is as exciting and satisfying as any. So, this book will be interesting for both math-philes and math-phobes equally. Man innately possesses the ability to compute with simple numbers. Research states that even birds do retain a basic sense of number! The origins of mathematics was surely associated with counting, as those early settlers on the fertile river valleys of Nile and Euphrates-Tigris used them to keep account of their livestock. Gradually, other applications developed, like keeping track of the seasons by counting elapsed days. Early astronomers used it extensively to predict the sowing time. As time went on, mathematics became more complex and began to be applied to all aspects of life. An amusing example of a peculiar rule of marriage among the aborigines of New Guinea presented in the book shows that mathematics can be extended to human relations as well. Amir D Aczel has produced nearly a dozen books on science and mathematics. He lives in the United States and contributes to newspapers and television also. In this nice book, he tells the story of mathematics developing from humble origins to what it

is today – touching the everyday lives of all civilized societies in numerous ways. Some books on the mechanism of human brain state that the faculty of language and mathematics will not be developed simultaneously in people. However, this book presents several mathematicians who were adept at both. This pleasantly readable work is a must-have for students of mathematics.

The first two parts of the book neatly sums up the work done by ancient scholars in Egypt, Greece, India, China and the Arab world. Contrary to our expectation, intellectuals in the ancient period also traveled far and wide in search of knowledge. We read about Greek scholars visiting Babylon and Egypt to partake of the knowledge amassed in these cradles of civilization. Thales of Miletus was inspired to formulate the first theorem of mathematics on a visit to the Great Pyramid of Cheops in the 6th century BCE. Anxious to find the height of the pyramid, he devised an ingenious way by measuring the length of the shadow cast by the structure, which is still intriguing. Restriction of knowledge to the initiates alone had begun in those times in the case of Pythagoras and his disciples, who were very particular in keeping the word to themselves and even going as far as to kill some of their brethren who wanted to spread the message on the existence of irrational numbers which challenged their own intellectual foundations. Aczel gives a fitting representation of Indian thought guided by Aryabhata and Vishnugupta. Though he remarks that the contributions of these masters may have been guided by assimilation of Greek thought diffused through increased trade between the two countries, he has been straightforward in assigning the invention of algebraic and trigonometric ideas to India. Greece excelled in geometry. When the classical age ended in Greece and Alexandria, the beacon of learning passed to the Arabs who kept it lit till Renaissance, when it was handed over to Europe. Combining elements from Greece and India and producing original thought of their own, Arab mathematicians founded the roots of some of the branches of modern mathematics. The term algebra derives its etymology from a treatise called ‘Al Gabr Wa’l Muqabala’ by Muhammad ibn Musa al-Khwarizmi who lived in the court of caliph al-Mamun. Signs of influence of Brahmagupta’s work ‘Brahmasphuta Siddhanta’ are said to be unmistakable in al-Khwarizmi’s work (p.46). With Jamshid al-Kashi (1380 – 1429), Arab scholarship faded into oblivion. Arabs translated ancient Greek manuscripts and Indian numerical notation to Arabic, which was translated to Latin in the Middle Ages, which helped Renaissance science to flourish. The book also sets aside a chapter on Chinese origins of mathematical concepts.

The seventeenth century CE may be credited with the honour of the origin and development of modern mathematics. Descartes, Newton and Leibniz shone with meridian splendour in this period, among an impressive array of scholars. The sharp disparity between England and continental countries like Germany are seen here. While in England it was possible for a talented man to find avenues for further study and research such as Cambridge and Oxford, without worrying too much about the financial circumstances of leading their daily lives, in Germany and other countries, the scholar had had to apply for patronage to a feudal lord or leading members of the clergy. Naturally, such a system was vulnerable to the fortunes of the patron in a battle or to the loss of favour of the patron himself with the king. Wherever there was a stable government, scholarship flourished. France led the field till the beginning of the nineteenth century on account of this, while Germany was splintered among a plethora of weak city states. After the downfall of Napoleon and amid the unsettled political turmoil which followed it, France lost its position it had enjoyed with the work of Laplace, Legendre, Galois, d’Alembert and Lagrange. Germany, consolidated in this century on the political front, and its repercussions were seen in mathematics as well, with the advent of notable personalities like Cantor, Dedekind, Weierstrass and others. We note another noteworthy fact in this regard. Many mathematicians in the Renaissance era were devout Christians, Newton being the most prominent. Mathematicians’ personal beliefs inevitably seeped into their work too. Newton studied the solar system in light of gravitational forces exerted by the bodies in orbit and reached the conclusion that it is stable in the long term due to God’s intervention. Laplace, an atheist who studied the same problem in a Europe conditioned by Enlightenment, declared boastfully that the stability of the solar system is not in need of the god hypothesis. As can be expected, he also reached the conclusion that the solar system is stable.

When we reach the modern period, mathematics has grown complex and out of reach of common people. No fundamental advance has taken place in the last 150 years, except perhaps the impetus made in non-Euclidean geometry by the development of Einstein's theory of relativity. Researchers studied some of the highly specialized attributes of a theory, aloof from the buzzle of the street and away from any concern to find an application for the theory. Practitioners of pure mathematics take pride in the fact that the extreme abstractness of their field precludes the necessity to look for a practical way to employ the theory. When no path breaking advances were forthcoming, mediocrity set in. Even though Aczel praises the effort of Nicolaus Bourbaki, a group of maverick mathematicians posing as an individual, and Alexander Grothendieck, readers get a feel that instead of pioneering new ways, they have gone in search of cheap popularity tricks and pranks. Grothendieck was a researcher who suddenly turned to politics and environmentalism and effaced himself from public view by hiding somewhere in the Pyrenees. In an act of sheer irresponsibility, he burnt all his contributions to mathematics in addition to taking all electronic content off the Internet. Aczel revers this man, but readers believe that he is an impostor.

The text is very easy to read through, presented in a concise but effective way. All the usual anecdotes and events are included, but the book doesn't advance any original ideas except the flawed one on the greatness of Grothendieck. There are no exclusive information available in this book, which is unattainable from others. Lot of photographs and paintings are included, along with a good index. The bibliography is extensive. However, the narration abruptly ends, without a proper epilogue or musing about the future course of mathematics. In this vein, it may be thought of as a description without insight or any contribution from the author apart from compiling data about various mathematicians. However, the author gives a respectable mention of Indian masters of old and new, and wholeheartedly acknowledges their pioneering roles. A number of sidebars are provided, but they blend confusingly with the text as the layout doesn't neatly separate them from the main text.

The book is recommended.
