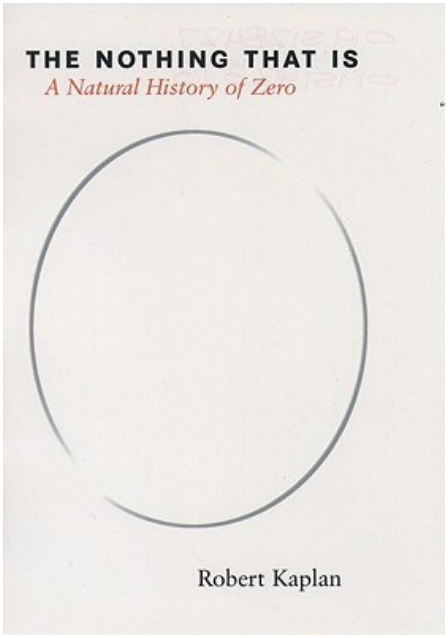

The Nothing That Is: A Natural History of Zero

Robert M. Kaplan , Ellen Kaplan (Illustrator)

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A symbol for what is not there, an emptiness that increases any number it's added to, an inexhaustible and indispensable paradox. As we enter the year 2000, zero is once again making its presence felt. Nothing itself, it makes possible a myriad of calculations. Indeed, without zero mathematics as we know it would not exist. And without mathematics our understanding of the universe would be vastly impoverished. But where did this nothing, this hollow circle, come from? Who created it? And what, exactly, does it mean?
Robert Kaplan's The Nothing That Is: A Natural History of Zero begins as a mystery story, taking us back to Sumerian times, and then to Greece and India, piecing together the way the idea of a symbol for nothing evolved. Kaplan shows us just how handicapped our ancestors were in trying to figure large sums without the aid of the zero. (Try multiplying CLXIV by XXIV). Remarkably, even the Greeks, mathematically brilliant as they were, didn't have a zero--or did they? We follow the trail to the East where, a millennium or two ago, Indian mathematicians took another crucial step. By treating zero for the first time like any other number, instead of a unique symbol, they allowed huge new leaps forward in computation, and also in our understanding of how mathematics itself works.
In the Middle Ages, this mathematical knowledge swept across western Europe via Arab traders. At first it was called "dangerous Saracen magic" and considered the Devil's work, but it wasn't long before merchants and bankers saw how handy this magic was, and used it to develop tools like double-entry bookkeeping. Zero quickly became an essential part of increasingly sophisticated equations, and with the invention of calculus, one could say it was a linchpin of the scientific revolution. And now even deeper layers of this thing that is nothing are coming to light: our computers speak only in zeros and ones, and modern mathematics shows that zero alone can be made to generate everything.
Robert Kaplan serves up all this history with immense zest and humor; his writing is full of anecdotes and asides, and quotations from Shakespeare to Wallace Stevens extend the book's context far beyond the scope of scientific specialists. For Kaplan, the history of zero is a lens for looking not only into the evolution of mathematics but into very nature of human thought. He points out how the history of mathematics is a process of recursive abstraction: how once a symbol is created to represent an idea, that symbol itself gives rise to new operations that in turn lead to new ideas. The beauty of mathematics is that even though we invent it, we seem to be discovering something that already exists.
The joy of that discovery shines from Kaplan's pages, as he ranges from Archimedes to Einstein, making fascinating connections between mathematical insights from every age and culture. A tour de force of science history, The Nothing That Is takes us through the hollow circle that leads to infinity.

The Nothing That Is: A Natural History of Zero Details

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Genre	:	Science, Mathematics, Nonfiction, History, Philosophy

From Reader Review The Nothing That Is: A Natural History of Zero for online ebook

Megan Baxter says

Kaplan never met a literary allusion he didn't like.

At times this works, as it adds depth and surprising insight into some of the mathematical concepts he's talking about. At other times, it feels remarkably scattershot, and adds little to the material.

Note: The rest of this review has been withdrawn due to the changes in Goodreads policy and enforcement. You can read why I came to this decision here.

In the meantime, you can read the entire review at Smorgasbook

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Batgrl (Book Data Kept Elsewhere) says

This is a book that, a few years ago, made the perfect gift for my father, who has told me that he's read it several times. And so it's the perfect book to try and polish off while I'm visiting. (Because he'll miss it if I try to sneak off with it.) (My father does this too when visiting me. We both have more books than we can keep track of.)

However it was also a book which I didn't give myself enough time to read. While the book is not entirely made up of them, every now and then there would be - I have no better way to describe it - story problems. No no, don't run away in horror if you are somewhat math-phobic - you don't have to actually solve anything, and could actually just hop over those bits. But in and around those story problems were also ideas that really made me want to sit back, rethink the statements, and actually read parts over again. This is also the point at which I wanted footnotes - but I'll rant on that in a bit. But the main point here is that Kaplan is telling the history of something I'd never put much thought into, and made me rethink the way math was taught to me. Looking back I really with we'd had history of math along with math itself, but I can see why that rarely happens - there is only so much class time to get through everything.

One of the things that's still causing me amazement is the idea that when the Greeks memorized complicated mathematical computations they were doing them mentally with words - because there weren't numerals in the sense we knew them, numbers to them were represented by words. (Remember the old fashioned written checks? That line where you'd write the entire amount out in word form? Think of that. Now think of using that format with all forms of mathematics.) That's a vast amount to juggle in your memory, especially if you include the fact that they also didn't use zero as a placeholder for the larger numbers.

Also the book made me realize how many mathematicians from other cultures I never was introduced to, and curious to read more of their histories.

I should add here that this book would have easily rated four stars (Kaplan tells history in a delightful way) if not for the citation issue. It was also a problem in that I was reading the book in paper and stopping to go online to read cites every time I was interested in one wasn't easily done - if I'd read this in ebook form with cites it wouldn't have been an issue.

Citations and Sources

In a book like this citations are a big deal - well, for me-the-reader that is, and for anyone using this as part of a paper or secondary research material. The book gives you a url to check (and seems somewhat long in this day of "we can create shortened urls") which then refers you to this page: Oxford University Press, The Nothing That Is, which provides another link to the PDF of the citations (and a link to a quiz). Which makes me wonder - were the citations not ready at the time of publication? Did Kaplan just want them in a form he could easily update? Did the publisher quibble at the length of the citations? (The book is only 225 pages, so I doubt the later.) Is a PDF really the best format for this? (That PDF of footnotes is **170 pages long** - and yes, I'll read them all. I'd rather have them with the rest of the text though.) It's kinda irritating to have to check this document just to see if there's a citation somewhere, because the book gives no indication whether or not there'll be a cite, footnote, or anything. (To be fair, it's not the first to use this style of endnotes. It's just divorcing them from the paper text that seems a bit odd to me.)

Easily accessible footnotes are a somewhat critical point when the author is citing multiple ancient sources in his text, and notes that there are multiple ancients who disagree on which culture came up with the concept of zero (apparently Greek, Hindu, Syrian, Chaldean - all were working on various aspects of sciences that were in the neighborhood of the idea of zero.) In this kind of situation it's helpful to know what translation an author used (whether the same translator was used for multiple sources, or whether the author translated texts himself, etc.), how easily the text is to refer to (ex, I can find it on Amazon vs. it's long out of print), etc. People who write about math are usually very adamant about exact citations - and that's not a gross generalization when these are the same folk that love their proofs.

Here's a specific example that happens multiple times in the book, p. 97:

> "Even for those immune to superstition, zero as a number '*donnant ombre et encombre*,' as a fifteenth-century French writer put it: a shadowy, obstructive number."

Writers or scholars are vaguely referred to like this - if only once I'd think it might be someone nameless due to the age of the text. Without an immediate citation, I'm at sea. [If you look this up in the notes, this is referred to as "vdW 59; M 422." I'm still working out what vdW refers to - there's not a separate bibliography. The first reference to vdW in that PDF is from page 7 - but I don't see anything prior to that that could be a "acronymic reference" - **feel free to help me out on this, anyone**.]

Source info, SHORT version: Book has an index, but no bibliography. If you want to know the texts used you must cull through the online citations - there's no stand-alone bibliography, all information is within the notes. If you use this text as a reference do make note that the paper version has cites online (your professor will thank you). I'm assuming that the ebook version has them included, since that would be logical.

Mentioned in book, so interesting that it sent me googling (not in any order): Karl Lang-Kirnberg, Gerbert/Pope Sylvester II (Gerbert's aspices), Bhaskara, Diophantus, Heron, Pappus, Thymaridas, Plato's Timaeus, Petrus of Dacia, Adelard of Bath, psephos (counting stone), Al-Khowarizmi, Mahavira, Brahmagupta, James Ussher/Archibishop of Armagh, Ruth Benedict, Avicenna (autobiography of), Mancala or Kalaha (game), Manichaeism, Alexander de Villa Dei, John Sacrobosco, Filius Bonacci (Fibonacci), Nicolas Chuquet (Lyons 1484), Tally-stick, Counting board, Italy and double entry bookkeeping, Mattaus Schwartz and Jakob Fuller the Rich, Lucas Pacioli, Ulrich Wagner, Adam Riese, John Palegrave, Gregor Reisch, Nicole Oresme Bishop of Normandy, Michael Stifel, Pierre de Fermat, jeroboam, Kurt Godel, John Napier baron of Merchiston, Flann O'Brien and The Third Policeman, Gottfried Wilhelm Leibniz, Johann Bernoulli

Normally I'd link all of those to wikipedia - but you can see how many there are. That all of these made me want to read more history? A positive thing.

[*An aside - I wasn't able to find anyone discussing these books of Kaplan in light of his other work. So I'm still unsure how I feel about this. Also assuming that Dr. Robert-Michael Kaplan is the same Kaplan who wrote the book I'm reviewing.*]
I was at first somewhat concerned with buying this book for my father because I noticed that Kaplan has written books on eyesight like Seeing Without Glasses. This immediately worried me that it might be along the lines of the Bates System of Eye Exercises which came out in the 1940s, but which was still kicking about in the 1970s, and apparently still around today. I have vision such that I can't see much of anything without glasses, so this sort of thing annoys me in that there are a large amount of eye conditions where the vision can't be improved. (Personal bias here: I was placed in contacts at an early age to reduce the speed at which my vision was worsening. It's somewhat inconclusive as to how much this helped or whether the amount my vision was worsening naturally slowed down - but since I now have peripheral vision with contacts I'm not complaining!) Most of us wearing glasses aren't going to be able to cure the problem with exercise. Why would it matter what other books Kaplan wrote? Well, perhaps this is my bias, but if someone was promoting something that's not proven by science in another field, I'd worry about the rigor of their research and theory in other fields. Perhaps somewhat unfair on my part to judge other books by the subject of another, but I'm skeptical that way.

Quotes I enjoyed/pondered:

p 31:

> "...The fact remains that Archimedes worked with number names rather than digits, and the largest of the Greek names was 'myriad,' for 10,000."

p 37:

> "...Names belong to things, but zero belongs to nothing. It counts the totality of what isn't there. By this reasoning it must be everywhere with regard to this and that: with regard, for instance, to the number of humming-birds that that bowl with seven - or now six - apples. Then what does zero name? It looks like a smaller version of Gertrude Stein's Oakland, having no there there."

p 38, where I miss an easy to look up citation while reading, as the Marlow reference makes me curious:

> "...Even an early edition of the Surya Siddhanta - the first important Indian book on astronomy - claimed the work to be some 2,163,500 years older than it has since been shown to be (though this revising wasn't made in time to excuse Christopher Marlowe, accused of atheism partly for pointing out that Indian texts predated Adam)."

p 39:

> "...the fulfillment of every schoolboy's dream: the examiner prostrates himself before the youth and exclaims: 'You, not I, are the master mathematician!' "

p. 45:

> "...Or was it that the Indians, like the Greeks, tended to equate wisdom, knowledge and memory, so that important matters such as mathematics were written in the memorable form of verse."

p 52:

> "...The counting board sprinkled with green sand and blue sand that Remigius of Auxerre described in 900 AD sounds like something one would dearly love to own - but since he says that figures were drawn on it with a pointer (radius), it belongs to the same tradition, which also produced the wax tablets that Horace's schoolboy hung over his arm, and the slates that long after screeched in village schoolrooms."

p 66, about Adelard of Bath, returning from many travels:

> "...And he brought back with him precious manuscripts, the real treasures of the East: a treatise on alchemy thinly disguised as a text on mixing pigments (though it also contained a recipe for making toffee), works on how to build foundations under water and how rightly to spring vaulted structures. He wrote a book of his own on falconry, in the form of a dialogue with his nephew."

Am I the only one who wonders if that **recipe for toffee** was any good, and who the researcher was that bumped into it years later?!!!

p 68:

> "...One of our commonest words for zero, 'null,' comes from the medieval Latin *nulla figura*, 'no number,' and a Frenchman, writing in the fifteenth century, expressed the popular view well: 'Just as the rag doll wanted to be an eagle, the donkey a lion and the monkey a queen, the zero put on airs and pretended to be a digit.' "

p 70:

> "...Think of the situation with words and with ideas. New words are always frisking about us like puppies - one month people go 'ballistic' and the next 'postal' - but few settle in companionably over the years and fewer still reach that venerable state where we can't imagine never having been able to whistle them up, there at our bidding. ...
>
> ...But the Republic of Numbers is vastly more conservative than those of language or ideas: Swiss in its reluctance to accept new members, Mafiesque in never letting them go, once sworn in. Think of irrational numbers, the guilty secret of the Pythagoreans, whose exposure shook Greek confidence to the core. Twenty-five hundred years later we can't do without them, though the sense in which they exist is debated still. And imaginaries? Mathematicians, who love high-wire acts, began thinking about the square roots of numbers as far back as Heron and Diophantus, but whenever these came up as solutions of equations they were called fictitious

> and the equations judged insoluble. Then in the Renaissance people began to calculate them, fictitious though they were."

p 85, compulsive counting:

> "...Some have reached accommodation with their monster: Sir Francis Galton, cousin of Darwin and the father of Eugenics, counted everything in sight and even had gloves made up for him with pistons that drove ten separate counters, so that he could unobtrusively keep track of the percentage of beautiful women in Macedonian villages while tallying up the average price of goods in their shop windows. Others have just given themselves up, like the otherwise lumpish farm-hand Jedediah Buxton, who in the eighteenth century couldn't help calculating how many hair-breadths wide was every object in his path; and who, when taken to London as a treat to see the great Garrick in a play, announced at its end precisely how many words each actor had spoken, and how many steps they had taken in their dances."

p 88, Mayans and zero:

> "...I mentioned that the gods of the underworld, the nine Lords of the Night, were ruled by the Death God - but I didn't tell you who this death-god was: he was Zero. His was the day of the Haab when time might stop. His was the end of each lesser and greater cycle, fearful pause. Now if a human were found who could take on Zero's personna - and if he could be put to a ritualistic death - then Death would die! And this, it seems, is just what the Maya did. They had a ritual ballgame between a player dressed as one of their hero twins, and one dressed as the God of Zero. The ball was an important hostage, such as a defeated king, who had been kept for many years and was now trussed up for the occasion. The two players skillfully passed and kicked and beat him to death, or killed him in the end by rolling him down a long flight of stairs; and it was the hero twin who always won by outwitting Zero. In other such games, the loser was sacrificed. But outwitting death wasn't enough. A human would be dressed in the regalia of the God of Zero, and then sacrificed by having his lower jaw torn off. As with most religions, the failure of ritual to achieve its aim didn't alter it, since even the barbarous live in hope."

Deb says

I enjoyed this. It does have a lot of literary allusion, but I found this added to the book for me - especially the reference to the Third Policeman - one of my favourite books - in the chapter on disappearing quantities in the calculus.

Patrick Hewlett says

It's interesting when you realize how difficult it must've been for ancient cultures to assign a name and an idea to a concept that doesn't physically exist. 1, 5, or 60 apples are tangible (and often part of everyday life),

but what's the point of discussing zero apples? In a deeper context, surpassing this hurdle was the first step towards more developed number theory ideas such as infinity, countability/uncountability, irrationality, and imaginary numbers.

Joseph says

this book kinda blew my mind. ill probably forget what happened in the book like two months from now, but seriously this book was totally interesting. personally, i was totally going to use this book for my ncsm thingiemaproject, but it totally came late so i couldnt use it,,,,besides it wasnt due yet, so i thought to myself hey why dont i just read it. and i did. this guy, robert kaplan is like ttoally amazing. he gives so much information on the number zero. he even kind of redefines it as basically a complex concept. its also has a lot of depth, im soooo dissappointed i want able to use this for my project because this had a lot of things that i could have used...anyways the book was rally informative, it gave detail into the times when there were sumerians and babylonians. kaplan really graced mathematics by writing this book. even so, he graced my mind on the wonders of zero. see my thing was on how you could have used zero to solve zenos paradox,...the big idea was that zenos paradox said that you couldntgo to zero, when in fact when you were thinking about it in reality and you put the concepts of zero and infinity and motion and spped and physics, you could have totally solved zenos paradox.btw it was a great book...=)

Kenneth Millington says

The history of the concept of zero is really intriguing. Certain ideas are so common place for us we never actually investigate where they came from or how they came to be. We accept them without question. Robert Kaplan accomplishes an impressive feat retracing the path of a this shadowy enigma through its appearances across cultures and history. His book is at its best, for this reader, when he mixes the lineage of the symbol as it marries with concept. Reading of the ancient clay tablets, accounting methods and the learned sand allowed for a more contextual understanding of a world without zero. Following the development of the mark for zero as it passed to successive cultures, mutated, and developed illustrates the evolution of an idea as it grows in tandem with human enlightenment. Concurrently, the philosophy that parallels this emergence is equally rich and fundamental to all our present trajectories.

My only disappointment with the book was minor and involved the written explanation of mathematics and logic. This is very subjective however. A more accomplished understanding of this math would give a more appreciative response. It became a bit if a chore to follow but I believe necessary to fully embrace the importance of Zero.

Overall a compelling book that draws forth much of the background of zero and its significance to the development of thought . Definitely worth a read if you have "nothing" on your mind!

Jenny says

I much prefer the style of Zero: The Biography of a Dangerous Idea. However, this book is thought-provoking and insightful. The style is a little headier than I expected or wanted. I thought it would be more

of a history, which it sort of was but in a very abstract way. That's the key word for this book: abstract! That's okay; it's just not what I was hoping for, which isn't Kaplan's fault, of course. It's a good book. It's well written. It's well researched. I wish Kaplan's explanations were clearer, though, and the timeless complaint about math and science books written supposedly for the everyday reader--it's not exactly as simple as Kaplan claims it is in the opening disclaimer. But I still recommend it. Not for a casual reader but for a philosophy major or someone who loves math and wants a more ontological approach to the concept of zero (rather than to the number). In fact, I've been sending pictures of pages to my friend who's writing a paper for a graduate level English course about a crisis of signification and the dialogic relationship between good and evil because this book about zero actually makes a lot of good points on the topics of language and Being.
That being said, it's a good book but not a great one.

Domhnall says

There are different ways to use and think about mathematical concepts and they do not all leave a historical record in a form that can be interpreted with certainty. The gap between people engaged in trade and those indulging in philosophy has been especially important, notably for the ancient Greeks, whose philosophers used geometry to think mathematically and despised the mere counting required for trade. Others have used sand or beads or counting boards or diverse tools in which the technique for even complex calculations did not necessarily entail a corresponding grasp of the theory or the concepts at work. In such cases, zero might arise and vanish repeatedly without making an impression on the way people thought about numbers. The key fact is that we do not know what they were thinking unless we can find a record.

Although we can find written number systems as old as the Sumerians, 5,000 years ago, in which we see zero at work, it is used in unexpected ways. They appear to require a form of zero to indicate “nothing in this column” - for which there is a record at Kush dated to 700BC - but it is used only in the middle and never at the end of numbers. So they cannot distinguish between 2, 20 and 200. The ancient Greeks - from the Fifth Century BC - used their letters as symbols first for numbers 1 to 9, then tens up to 90, then hundreds up to 900, but had no letter as a symbol for zero. They seem to have incorporated zero first after invading the Babylonian Empire in 331 BC. There is good evidence, which Kaplan reviews, that the Greeks in turn passed the concept to India. Kaplan spends some time debunking claims that the Indians invented zero, insisting that their valid claims are already remarkable and do not need the additional support of being exaggerated. Why deprive Zero of its much longer history?

Kaplan says very early on that “we count by giving different number names to different sized heaps of things.” In places this is as much a history of 1 as a history of zero, discussing the different ways people group stuff into units. The Sumerians used units, tens and sixties for example. Archimides named vast large numbers by working with myriads and myriad -myriads, which could be of the first order or the second order. Until 1971, England worked with units of 12 pennies to one shilling, twenty shillings to one pound. We still have sixty seconds to a minute, sixty minutes to an hour, twenty four hours to a day, seven days to a week and so on .. Kaplan devotes a chapter also to Mayan number systems, with a range of cyclical calendars all seeking to defer the end of time. They took their obsession with counting to extremes.

Kaplan argues that up to this point in the history of numbers, the principle remained valid that there was a correspondence between numbers and things, such that there would be no consideration given to the notion that zero / nothing / void / empty was a thing in need of a name in the way other numbers were. But Indian mathematics achieved a “paradigm shift” which focused on how numbers behaved instead of what numbers were. Such behaviour took place in equations, where the solution (the number which made the equation balance) was as likely to be zero as any other number. The names of numbers were contracted to written

symbols, including symbols for operations (plus, minus, equals, squared), which could be used yet often not visualised (what would x squared look like?). Indeed, for the first time it became reasonable to deal with negative numbers as well as positive ones. Numbers no longer named or described objects but became objects themselves to which adjectives could be attached: positive, negative, natural, rational, real. “The change in mathematics we’ve been following, where the names for numbers narrow down to signs of them and the numbers themselves are subordinated to the laws they obey, began when someone first counted and evolved through the ongoing project of deriving these laws from as thrifty a set of axioms as mathematicians could manage.”

It was through Islam and the Arabic language that Indian mathematics was transmitted to China, Russia and Western Europe, the latter by 970 AD. Kaplan gives credit for this but does not suggest that the Arabs transformed Indian maths in any fundamental way. Perhaps this impression arises through the specific focus of this book on Zero. In any case, Europeans struggled with many aspects of the new approach to mathematics. For all the crushing difficulty of using existing methods, there were a lot of new concepts to absorb in Arabic (or “Saracen”) methods, and for counting itself Europeans could make good use of the abacus to meet their practical needs. Kaplan suggests that the major breakthrough for Zero was after 1340, when Pacioli introduced the novelty of double entry book-keeping, in which Zero held the essential balance between credits and debits, positive and negative.

Yet it was not in counting that Zero had its crucial impact. It remained the case that counting with an abacus was much faster and more efficient that using the quill to apply the Saracen techniques. Kaplan writes: “Wordless manipulation will carry you with dash and glory to the outermost edges of arithmetic - but it will leave you stranded once you cross the border into algebra and all the lands of mathematics that lie beyond. There thought travels by signs laced into a language that can speak even about itself…. This language came into its own when zero entered it as the sign for an operation: the operation of changing a digit’s value by shifting its place.”

Kaplan proceeds in the remainder of his book to explore diverse ways in which the role of zero has been significant in the development of mathematical ideas. This is not material to read with a passive attitude - it requires effort and patience from the reader. His explanations unfold very logically to give insights into the power - but also the confusing nature - of this surprising number.

The book does not demand a knowledge of difficult mathematics but it sadly does demand a willingness to read difficult prose that is sometimes too dense and to wade through his laboured humour and philosophising in places where that just confuses things. The result for me was that I literally nodded off to sleep on occasion. In the end, I also found it necessary to speed read through the book for a second time, just to clarify what it was about. It made more sense in retrospect than it had done at the time of first reading. Maybe that suggests that the book had a great idea which called for more editing before it was released into the wild. It could have been a lot better. A heavy read and a struggle but all the same, interesting stuff and filled with unexpected gems.

Mike says

A difficult book to read which I thought would be strictly about math but lurched more into the field of philosophy and metaphysics. I liked this but I had difficulty following it. Surprisingly I found the sections on math rather easy to follow but was stymied by the density of the writing. I want to read it again but I'll

probably wait some time to let the ideas soak in

Dave says

“The Nothing That Is: A Natural History of Zero” by Robert Kaplan is a look at what is perhaps the most significant creations and advances ever made in mathematics. Imagine trying to calculate using Roman Numerals or any system that did not have columns, and its significance doesn’t end there as it is critical in dealing with negative numbers and calculus. Zero took a journey from indicating nothing, to being a number of value which then forced the creation of the idea of null to once again indicate nothing.

Kaplan’s book looks at all the aspects of Zero, from what it meant, to the symbols used for it and where they might have come from, to its importance in mathematics and for that matter in philosophy. His note at the front of the book suggests that the reader need only have had high-school algebra and geometry, but to get the most out of this book it would be better to have had some higher math, as well as a full and well-rounded education as Kaplan makes references which hit on a number of areas.

The book itself almost defies being placed into a category. There are elements of history, philosophy, psychology, and of course math contained in its seventeen chapters (appropriately starting with chapter Zero). The first nine chapters have a great deal to do with the history of the number and the symbol used for it, and how it impacted Mesopotamia, Greece, India, and even a chapter on how it was perceived in Mayan culture.

The book then transitions from more of a history to more about how Zero is used in mathematics, covering issues such as what is the a number to the power of 0, and then by extension what is 0 to the power of 0. It also touches on Zero’s important relative Infinity. Note that the chapters almost always offer a blend of history, math, and other subjects, and I am merely offering my perspective on where the greater focus is in each of these sections.

Later in the book, the focus becomes much wider, looking at Zero’s impact on different areas of society, including everything from literature to technology with the coming of binary systems such as computers. Kaplan somehow manages to contain all this in a book of fewer than 220 pages, so the pages and chapters are packed with a lot to think about.

The weakness of the book is that it doesn’t easily fit into any category. It is not a scholarly treatment of the subject, and in fact Kaplan admits that some of what he writes is based on weak evidence, or in his words he has “tried to bridge a chasm on the slenderest threads of evidence”. At the same time, I would not think this is a good book for a novice to math, or history, or many other subjects. As a result, there is probably a rather limited audience for this type of book.

As much as I love the subject, I am going to round down to three stars overall, partially due to the issues with finding an audience for the book as it is written, and partially due to the huge number of references he makes, without providing notes and a bibliography. To be fair he does provide a link to these in his “Note to the Reader” at the front of the book, but one can only hope that the link remains there for as long as this book is available.

Alan Grieveson says

I was disappointed with this book in many ways. Being a reader of mainly non-fiction I expected a book, having heard a radio interview some years ago, that was informative.
I found the authors style rambling and tedious, connecting anything with even the vaguest connect to nothing or zero into a somewhat difficult narrative. As someone who has actually read 'A Brief History of Time' in less time than it took to read this book, I cannot say I learned much.
Sidelines into Mayan calendars and astronomy only distracted from the supposed subject area.
The first sixty odd pages were about the origination of the zero symbol, after which the author says this is of course only supposition or words to the effect. It would have been better to start with the comment that nothing is known for certain about the history of the symbol but it is thought etc etc.
Having five to six line sentences didn't help, nor did the amount of quotations which did little if anything to help the work along. I give one star just because there was the odd piece of information amongst the chaff.
It suggested mathematics is an art form, I would add also a philosophy because like this book and magicians something is conjured out of nothing.

Brendan Coster says

This book is insightful, it's goes leaps and bound beyond just 0, it's a history, a very very very quick pre-calc primer, a thought exercise, it's philosophical treatise, it's a world view, and much more. It was as my favorite definition of education states, education is the systematic linking of thoughts, idea's, and knowledge. You learn a lot in life, you go to school (or read and 'educational' book to have those idea's connected).

But it's also racist, it's futurist (not the exact word... but it'll do), it paints thick brushtrokes across societies and ideas, and all the while he "tried to bridge a chasm on the slenderest threads of evidence." There is a lot here that is grounded in reality, but there is a lot of it with Kaplans head in the sky where he writes as an armchair historian of old, brushing away entire societies and their "barbarous" natures. Honestly, he needs to go across the grounds at Harvard and revisit the Humanities at a base level or maybe take up some Anthropology to with the Greek German, and Sanskrit he knows to bolster up his... math?

The Author speaks a lot in this... he comes out fairly strong, and I find it's no one I'd ever want to sit down for drinks with. He's crude in his heights of philosophy. You can find the math explanations in this book just about anywhere online, the proofs as well as the philosophy. This is probably a 3 star book, and I had first marked it as such. But after thinking it through, from last night until today, it's left a bad taste in my mouth. Kaplan is the professor you dreaded in class, not because they were hard, not because of the work load, but because their world view was just so skewed, old, and retired as to make them dinosaurs, he's Professor Bins with a louder mouth.

Also, the Professor didn't put ANY bibliography, foot notes, citations, sources, etc. outside of a 6 page index. No, no, the professor leaves you to go find them via a PDF online, a PDF that is a different date then the book. Now, I'm all for the future, and putting stuff online... but the reaosn I have a physical book is because I DON'T want to look at a screen any more. No screen time, I'm looking to unplug. The professor, here, needed to put SOME of his sources, the bibliography at least, in the back.

But, when you are trying "to bridge a chasm on the slenderest threads of evidence." I guess it's best to leave those threads as scattered to the wind as you can... Maybe I'll revisit this as an completely bitter old man and appreciate it then, but god, I hope not.

Shayna says

Just like The Art of the Infinite, this is one of my nerdy books. It is really cool to view the authors way of explaining how zero is nothing, but most certainly exists and has a purpose.

Ajitabh Pandey says

I bought this book from Berkley during one of my visits to San Fransisco. Robert Kaplan has done some good amount of research and have tracked the evolution of some of the fundamental concepts on which modern science and mathematics is based. Zero, a number which itself does not means anything but together with other numbers means a lot. The history of zero has been tracked to ancient Indian number systems where it was called as "shoonya". It is unfortunate that the invention of zero in India could not be effectively proved since ancient Indians believed in passing knowledge by means of oral lectures and through very concise and crisp Sanskrit versus across generations. The concept of written manuscripts in India came much later and that too most of it is now lost. However, Kaplan has proved that a very advanced level of mathematics existed in India much before all that was rediscovered by the west by quoting various references from the Budhist era which is few centuries BCE.

The best part about this book is that any high school level student can easily read and understand it as it does not use any advanced mathematical concepts.

Robert Run says

Kaplan is a mathematician who knows how to communicate to right-brainers.. YAY.

This is a really nice book that describes all the ways that the zero, and therefore math, is integrated into the rest of life and shows it throughout history in a wide range of disciplines and contexts.

It is a conceptual book, written by a mathematician, for the rest of us.

Swell.