



# Long for This World: The Strange Science of Immortality

*Jonathan Weiner*

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**Long for This World: The Strange Science of Immortality** Jonathan Weiner

“[A] searching and surprisingly witty look at the scientific odds against tomorrow.”

—Timothy Ferris

Jonathan Weiner—winner of the Pulitzer Prize, the National Book Critics Circle Award, and the *Los Angeles Times* Book Prize, and one of the most distinguished popular science writers in America—examines “the strange science of immortality” in *Long for This World*. A fast-paced, sure-to-astonish scientific adventure from “one of our finest science journalists” (Jonah Lehrer), Weiner’s *Long for This World* addresses the ageless question, “Is there a secret to eternal youth?” And has it, at long last, been found?

## Long for This World: The Strange Science of Immortality Details

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## From Reader Review Long for This World: The Strange Science of Immortality for online ebook

### Jenny Brown says

A complete waste of time. There's no real topic, the author darts from one long rumination festooned with literary quotations to another, stopping only to festoon his prose with annoying similes which add nothing to our understanding and come so thickly at times you feel like you should stop to pick them out of you teeth.

What little science has made it into the book is poorly explained in a way that suggests the author doesn't understand it, and the continual focus on de Grey, who comes across as an unpleasant poseur but who the author appears to think is brilliant is mystifying.

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### Megan says

Jonathan Weiner's eloquent and thought-provoking *Long for this World* looks at the historical and contemporary search for the science of immortality.

This book is not actually about the science of aging or anti-aging. It's about the *search* for the science of anti-aging: the myriad of ways we humans have comprehended aging, both inside and outside of science, and on the drive (particularly of one man, Aubrey de Grey) to fight the seemingly inevitable force of aging.

The science itself is presented clearly and elegantly, and Weiner's writing style is immensely readable: he conveys the scientific search for immortality in a manner vital and personal (to him, to us readers) while drawing the connection to the bigger, mythic picture. While de Grey remains the central character in this study (no one is as passionately evangelical as he is), the stories of other scientists and their specific research (Maria Rudzinska and her beloved *Tokophrya*, particularly) remain bright in my mind after having finished this book.

As a social scientist, I enjoy reading popular science to discover the what, how, and why behind our drive for scientific research, and what that says about us and our humanity. *Long for This World* delivered interesting reflections on that very matter. I would have appreciated more in the final chapters, where Weiner discusses the implications of both mortality and immortality, and how these forces shape ourselves and our lives.

Note: I received a review copy from the publisher through the GoodReads First Reads program.

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### K. Lincoln says

3.5 stars, actually. I'm a layperson who came to science via a diagnosis of breast cancer. I love reading mass market science books geared towards explaining medical issues.

I'm fascinated with the ways cells turn themselves on and off, get rid of garbage, and slowly lose function

due to aging. I think I had expectations, however, about this book going in that colored how I read it.

It's very readable. The prose brings in references of all kinds, philosophers, poets, artists, historical figures, etc. At times, the prose, in its own self-congratulatory poetic expression, goes a bit too far out of the bounds of science to make comparisons when explaining a concept. It sometimes just didn't make sense.

Also, I was hoping for a bit more "here are some current scientific experiments having to do with aging" and a bit less "here's Aubrey De Grey and I eating breakfast in Ravenna."

The book is more about Aubrey de Grey and his theories about the 7 deadly ways our bodies kills us and how to stop them juxtaposed with descriptions of his hippiness and his flamboyance rather than a more thorough treatment of the topic, which is what I wanted. Don't get me wrong, Aubrey de Grey and his meeting up with the author provides for an entertaining read.

However, de Grey has some theories that aren't quite practical at the current medical moment. For instance, his idea about using some truly potent chemotherapy to kill off all telomeres on our cells so that they couldn't reproduce and thus mutate/make mistakes and thus cause aging or cancer seems like a horrific solution to this problem.

Anyway, the book flows well, is quite readable, and the voice of the author thought-provoking (if sometimes a bit full of himself as much as Aubrey de Grey). Worth reading for the entertainment value.

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## Corinne says

For this book, I'm going with the literal star rating 'it was ok.' I did learn a thing or two, and found some parts interesting. Overall though it didn't impress me. Most of the book followed Aubrey DeGrey, a controversial scientist who is a supporter that immortality is feasible. While I think he was certainly in place in this book, most of the book centered around him. A few other scientists would pop in and out, as well as some interesting science segments. Perhaps Weiner didn't realize how little information there was to find, or maybe he didn't look hard enough.

If you are interested in a discussion about mortality or DeGrey, I would recommend it. To someone actually interested in the 'science of immortality' then no.

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## David says

While this is an interesting book, it did not engage me fully. The first part of the book is historical--lyrical even--and the middle third of the book is really about the science of lengthening life. The last third returns to a lyrical--well, I wouldn't go that far, I'd say biographical. So much of this book is about a single theoretical scientist, Aubrey DeGrey. DeGrey believes that there are seven types of "junk" that accumulate in the body. The way to achieve immortality is to drain the junk out of the body at regular intervals. Sadly, one of these types of junk is cancer cells, and the cure for all types of cancer is not going to be found in the near future. Unfortunately, so much of the book is not about DeGrey's scientific speculations, but about his idiosyncracies. It just seems like filler, and gets tiring after a while.

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## Cassandra Kay Silva says

I don't know why I thought this was going to be a good one, I should have looked more into the reviews and realized how much more biography this is than a lot of scientific anything. Of course when it comes to the "science of Immortality" I am not sure what I expected to get. I mean its definitely an interesting subject right on the for front of my thoughts actually as I just spent the better half of the year hospitalized and feeling the specter of death. However this really not only didn't give me any answers (didn't expect it too) but it also was just kind of rambling and not as coherent of a piece as it could have been and I don't think it was very well presented. I understand that the science is still a work in progress, but many popular science books today contain a variety of up and coming topics and go much more into depth than this. I don't know I just want to be immortal so anything that didn't make me feel immortal was going to be a miss. I don't care if that's a ridiculous thing to say its how I feel dang it!

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## Raluca says

For a book titled "The strange *science* of immortality", I expected the science part to be much better.

Maybe it's the fact that science written by scientists is always made fun and easy to understand (you can tell they're in love with their subject and want to share it with the world), whereas science written by journalists (albeit science journalists) is just... dull. Difficult to understand. I often found myself rereading entire paragraphs to understand what the author was trying to say. Sometimes, I got the feeling he didn't know it either. He jumped from one notion to another without a clear purpose.

Add to that the fact that a lot of this book was pseudo-intellectual ramblings and pseudo-science. I don't mind speculation (especially speculative biology) as a thought exercise. But I mind arrogance with nothing to back it up in terms of concrete proof. Most of this book was focused on Aubrey de Grey who was presented by the author as a misunderstood visionary who did just that. If I wanted a book about a strange public persona, I would read a book about a strange public persona.

However, this book promised science concerning immortality. Sure, it delivered some of that, but for every page of scientific thought, I had to wade through another two of romanticising Aubrey or the idea of immortality. Don't get me wrong, it would have been really cool if the book was separated into distinct sections, one only about the philosophy and implications of immortality, one only about the personas and theories involved in explaining the path to immortality, and one about the science itself. I get the feeling the author initially tried doing that. Unfortunately, he couldn't execute it well. Each chapter jumps from one notion and style of narration to another in a completely incoherent manner.

All in all, this was another book I read as research for the series I am writing and I am, yet again, disappointed.

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## Jolie Kerenick says

I won this book in a first reads book giveaway. I found it fascinating. The author does a really good job of intertwining his conversations with Aubrey, a staunch proponent of the possibility of achieving immortality, with research of other scientists and references to immortality in literature and religion. He spends a good bit of time describing the science behind the structure and functioning of human cells as well as that of other life

forms. He writes in a manner that engages the non-scientist but does not dumb it down to the point that it would be insulting. He includes research from other scientists related to genetics and cellular biology among other topics. He eloquently juxtaposes the research with philosophical musings related to the pros and cons of living forever. He brings up some very good points on both sides of the coin and I enjoyed the pondering that it inspired in me.

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### **Michael Rushnak says**

Jonathan Weiner does an excellent job of bringing to life in compelling humanistic terms the fascinating scientific work that has already been achieved and a detailed explanation of the present day conflicts that are currently underway to extend the human life span. Long For This World is both a visionary look at dreams for immortality while providing a sobering balanced review of what is believed to be possible. I thoroughly enjoyed the read as Weiner takes us back to the beginnings of life on earth and transports us over the centuries, landing at what the futurists believe may be possible. Bravo!

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### **Greg says**

Jonathan Weiner is one of those stealthily brilliant science writers--he doesn't publish that often, but when he does, it's a big deal. There is a sense of wonder at the heart of a lot of what he writes--with *The Beak of the Finch*, which won the Pulitzer Prize, it was that evolution could be documented in virtual real-time on a small crater island in the Galapagos. With *Long for this World*, it's that a small cross-section of science is actually attempting to elongate the human life span. Of course, the implications are less than simple.

"When we consider the problem of aging," Weiner writes, "and imagine that we might be able to cure it, that alternating current we feel consists of longings and dread. We are afraid of what we wish for; and most of our fears, like our hopes, have always cycled in us." This is the heart of the drama in *Long for this World*: it may be true that with better medicine and technology, our lifespans have evolved exponentially over only a matter of centuries, and that for every day we live now, we add five hours onto our own time on earth--but would we really want to live forever? As it stands, evolution doesn't have much use for us once we've matured and passed our genes on to the next generation.

The main character that Weiner follows is Aubrey de Grey, an exceptionally quirky, long-bearded and gifted gerontologist in Cambridge, England who believes fiercely that humans will--and *should*--eventually be able to live a thousand years and more. In a nutshell, his argument is that if we can just figure out a way to clean up the cellular garbage that metabolism creates, (specifically, the "seven deadly things," which include free radicals that antioxidants fight) we'll be able to clear the path for immortality. Of course, the biggest catch is that we'd need to cure every kind of cancer imaginable. There are plenty of scientists in these "Methuselah wars" who believe that our constantly mutating cells will make this impossible. And there are some who think it's downright baffling that people would actually want to live for 500 years or more. Wouldn't we get incredibly bored if we actually lived forever? Would anyone want to have children? Would we become so aware of the possibility of death that crossing the street or driving in traffic or potentially suffering some other kind of random accident would render us so hypersensitive as to be practically immobile? Says biologist Martin Raff, "I mean, if you ask people, most people are not afraid of death. Most people are afraid of dying--of terrible dying. That's what they're afraid of."

The answer to the question of eventual immortality is pretty clear when Weiner writes that "We are performers of the self, we are playwrights of our lives, and we need death to bring down the curtain, or the

play will go on too long; the story will lose all shape and cease to be a story at all." But we are lucky to have a writer like him show us--intimately, humanely, and always with a sense of wonder--a possibility that concerns every single one of us.

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## Kristen says

I'm rather conflicted on how to rate this book. For sheer entertainment value alone it ranks rather high, unfortunately I expect a bit more from pop science books than just mindless amusement, you know, like actual science and here the book falls flat. Although the early chapters offer brief insights from real scientists, the bulk of the book follows Aubrey De Grey, who's educational background in science is made rather unclear in the book (and even so when I googled him.) This is a man who most reputable scientists have disassociated themselves with, even using the word 'charlatan' to describe him. This wasn't what bothered me about De Grey, what made me hate him from the start is when he yammers on about 'saving' people from old age and comparing the number of deaths from old age to 'X number of 9/11s every day', this had the effect of making me want to beat him into a comma screaming all the while 'do you know how fucking lucky these people are to die of old age? If you want to save people how about taking on juvenile cancer.' Besides this absolutely infuriating arrogance De Grey's ideas are mostly utter bullshit, pseudoscience to say the least. Towards the end of the book, after De Grey declares he's solved the problem of aging (in theory) he then says 'now all I have to do is cure cancer.' Well good luck with that. Arrg, when I think of all the people I know, close friends, who never made it to 30 this all the more just makes me want to do great bodily harm to De Grey. Perhaps this is what the author intended, although it's clear he finds De Grey a fascinating subject he doesn't take him serious either. So then why make him the sole focus of the book?

Ok I could go two ways here, I'd give this book three stars for it's entertainment value (see below) but only if I remove it from my science shelf, Leaving it on the science shelf as it is, two stars.

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What a fun, although far from scholarly, little read.

My main complaint thus far: not enough info on human-monkey testicle transplants. I mean, how do you just casually mention such a thing and then move right on? Now I can think of nothing else.

From Wiki: [http://en.wikipedia.org/wiki/Serge\\_Vo...](http://en.wikipedia.org/wiki/Serge_Vo...)

Voronoff moved on to transplanting the testicles of executed criminals into millionaires, but, when demand outstripped supply, he turned to using monkey testicle tissue instead.

Between 1917 and 1926, Voronoff carried out over five hundred transplantation on sheep and goats, grafting testicles from younger animals to older ones.

His first official transplantation of a monkey gland into a human took place on June 12, 1920. Thin slices (a few millimeters wide) of testicles from chimpanzees and baboons were implanted inside the patient's scrotum, the thinness of the tissue samples allowing the foreign tissue to fuse with the human tissue eventually. By 1923, 700 of the world's leading surgeons at the International Congress of Surgeons in London, England, applauded the success of Voronoff's work in the "rejuvenation" of old men.

Voronoff's monkey-gland treatment was in vogue in the 1920s. The poet E.E. Cummings sang of a "famous doctor who inserts monkey glands in millionaires".

By the early 1930s, over 500 men had been treated in France by his rejuvenation technique, and thousands more around the world, such as in a special clinic set up in Algiers. Noteworthy people who had the surgery included Harold McCormick, and the aging President of Turkey Mustafa Kemal Ataturk. To cope with the demand for the operation, Voronoff set up his own monkey farm, employing a former circus-animal keeper to run it.

Voronoff's later work included transplants of monkey ovaries into women. He also tried the reverse experiment, transplanting a human ovary into a female monkey, and then tried to inseminate the monkey with human sperm.

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### **Sara says**

I won this book from Goodreads and was looking forward to reading about the science of immortality, as the title promises. However, I feel like the book failed to deliver on both the goods promised in the title and on being much of an engaging read overall.

Certainly immortality is something that many, many people have sought after for years. The author makes mention of some such individuals, noting what they have done to contribute to this field - whether in the form of actual scientific advancement or simply forward thinking on the topic - but most of the book is focused on one man who is currently preaching about the inevitability of immortality without actually being a scientist himself (and so cannot conduct experiments on his hypotheses). Because the majority of this book talks about this man's thoughts and theories, it does not feel very deep; the actual heart of the book could probably be condensed into a thesis-like paper and be better for it. There is very little point to reading about one wannabe-scientist's opinions without evidence behind it. On a related note, this man came off as one of those nutjobs who stand on a corner, yelling about his own gospel, while passerbys think him crazy. Why the author of this book thought he'd make a stellar addition - and such a HUGE addition - to what should be a look at the "science" of immortality, I have no idea.

There were a few interesting parts to this book, but they were few and far between; when the author didn't go minimally (but very scientifically) into issues plaguing the reality of immortality, he was describing interactions with the aforementioned wannabe-scientist. Thought provoking questions about why someone would want to become immortal and how immortality might change the way we live were raised, and I liked these parts very much because I think these questions are important to consider when discussing the idea of immortality. There were also a few short descriptions of various scientists who've contributed research to this field.

Overall, this book felt disorganized and not very balanced. I struggled to get through it and can't really recommend it to others.

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### **Will Byrnes says**

The most persistent aspect of this intriguing book is the questions it raises. Why do we age? Can we do anything to halt or at least slow the aging process? What might be the implications of extending our time on

Earth?

Jonathan Weiner builds his look at the science of immortality around Aubrey de Grey, an odd duck of a British theoretician, a sort of Methuselah gadfly. De Grey, who looks like he might either play back up with ZZ Top or live in a moss-covered cabin in the depths of a Middle-Earth forest, has big-picture notions of what it would take to significantly increase the human lifespan. He has written professional papers in the gerontological field, although he was not professionally trained, and his wide knowledge of fields related to aging make him one of the planet's experts on the subject. He has also established an organization, SENS, (Strategies for Engineered Negligible Senescence) to promote research into extending human life.

Using Aubrey as his central trunk, Weiner branches off to a variety of fascinating subjects. He gives us a look at how people have viewed the notion of immortality through our history, in religion, literature and mythology. I was most surprised by a biblical account of a city named "Luz" in which the residents remained immortal. It was news to me. He writes about the history of theories of aging, and interviews several scientists working in diverse aging research projects.

In the last two hundred years the human lifespan has approximately doubled. Who's to say that it might not double again? Improvements in child health were responsible for much of the earlier gains, but lately the focus has shifted to extending life for those who have already achieved maturity. Why are we so plagued today with late onset maladies like cancer and heart disease? What is the role of natural selection in longevity?

Why do our bodies do such a good job of building through our youth, then slow down? Are we really rusting from the inside out? Like a city, our bodies generate considerable quantities of garbage. Thankfully, our bodies also include a sanitation squad that takes care of most of that, but in time the garbage trucks begin to fail and the sort of garbage we leave out on the curb doesn't catch the crew's attention. Clog up, shut down, game over. Why does the clean-up crew fail to keep up? Can the technology that uses designed microbes to detoxify contaminated soil be applied to the human body's difficulties identifying and composting or taking out the internal refuse?

Technical advances over the last century have allowed researchers to see deeper than ever into the operations that go on inside cells and even molecules, giving hope for new understanding and new ways to remain healthy.

Weiner does not look into potential global hindrances to life extension. Things like global warming, resource exhaustion, overpopulation. He does recognize the potential for longevity to be applied to the wrong sort, cautioning that extended lives might produce thousand-year Hitlers, Stalins or Maos. One could certainly see implications for westernized societies, in which those who routinely reward themselves at the expense of everyone else, (think Wall Street and corporate execs) buy themselves onto the beginning of that line. It would not be a huge leap to envision extensions to the existing class divides, with longevity as yet another privilege of wealth, eternal masters and expendable proles. How many Ghandis, Aung San Suu Kyis, or Mandelas would likely gain access to life-lengthening treatments?

In a world of widely available life extension, would we all become risk-averse to the point of stasis?

There are so many questions raised here, that it might take an extended life to consider them all. But I would not wait too long before reading this intriguing book. You don't have forever.

=====EXTRA STUFF

The May 2013 issue of National Geographic featured a cover story on longevity. Definitely worth a look.

But hurry. You know why.

A nice article on longevity researcher Cynthia Kenyon, from Smithsonian Mag.

8/7/13 - Radical Life Extension, an item by NY Times columnist Charles Blow

12/15/16 - Scientists Say the Clock of Aging May Be Reversible - New York Times - by Nicholas Wade

06/16/2017 - Scientists Discover a Key to a Longer Life in Male DNA - New York Times - by Carl Zimmer

June 2017 - Smithsonian magazine - Interesting piece on Aubrey deGrey and Silicon Vally interest and investment in life-prolonging bio-tech - Life Without End - by Elmo Keep

January 25, 2018 - NY Times - The Men Who Want to Live Forever - interesting op ed on guys wanting to *really* have it all - by Dara Horn

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### **Jim says**

Starts off with a couple of chapters on the philosophy of science jammed into the search for immortality. It's a conflation that I don't buy.

Seems to be focusing on Aubrey de Grey. His science is on the edge - might be bullshit, but no one is saying that. Could be just too leading.

<https://www.technologyreview.com/s/40...>

Still, his bio & everything else I'm reading about him & his theories reads like an infomercial. He's got a diet out there & says a lot of pretty things, but it's just not reading like science. This isn't for me.

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### **David (???) says**

3.5 Stars

Written well. Content can get boring at times. A knowledgeable book despite that. Did help me in understanding ageing, why ageing, how to improve longevity for ourselves. The books also discusses quite a lot about immortality through the eyes of philosophers in history.

Interesting read, but at times feels like skipping some paragraphs.

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