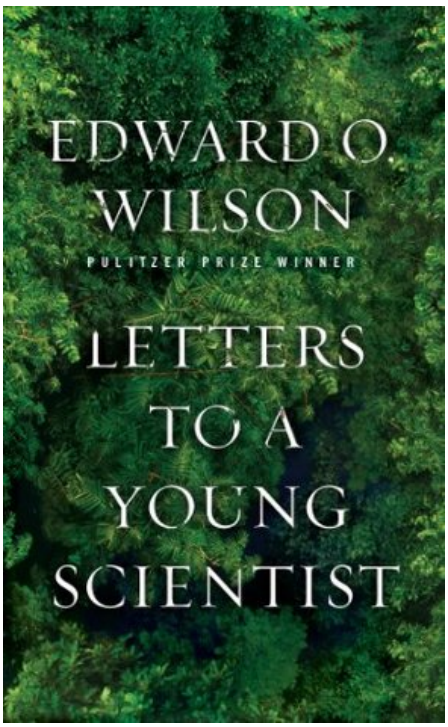

Letters to a Young Scientist

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Pulitzer Prize–winning biologist Edward O. Wilson imparts the wisdom of his storied career to the next generation.

Edward O. Wilson has distilled sixty years of teaching into a book for students, young and old. Reflecting on his coming-of-age in the South as a Boy Scout and a lover of ants and butterflies, Wilson threads these twenty-one letters, each richly illustrated, with autobiographical anecdotes that illuminate his career—both his successes and his failures—and his motivations for becoming a biologist. At a time in human history when our survival is more than ever linked to our understanding of science, Wilson insists that success in the sciences does not depend on mathematical skill, but rather a passion for finding a problem and solving it. From the collapse of stars to the exploration of rain forests and the oceans' depths, Wilson instills a love of the innate creativity of science and a respect for the human being's modest place in the planet's ecosystem in his readers.

Letters to a Young Scientist Details

Date	:	Published April 15th 2013 by Liveright (first published January 1st 2013)
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Author	:	Edward O. Wilson
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From Reader Review Letters to a Young Scientist for online ebook

Nick Black says

should have been called letters to a young biologist really interested in ants. lots of material reused from earlier books, particularly the (great) Consilience. i'll take Rilke's original, please.

Cass says

I was surprisingly disappointed with this book. As an aspiring scientist, ant-lover, and E.O.Wilson admirer, I thought it was all going for me, but I had to force myself through it. This book read as a series of badly strung anecdotes that offered vague guidance for a specific field (but not always entomology). It was unclear who the audience was throughout the whole book- if it was undergrads seeking a future in science like me, grad students hoping to become famous scientists, or young students like my 8th grade cousin who could use a little prompting to focus on science. This book was definitely not worth the $15 I paid for it. I wouldn't even pay $5.

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jeremy says

an inspiring work aimed primarily at those interested in pursuing a career in the sciences, e.o. wilson's *letters to a young scientist* is an autobiographical glimpse into the personal life and background of one of our most eminent biologists. one needn't be a student to find value and richness in wilson's letters, but for a young person trying to a carve out a direction for themselves, this book could well be a catalyst for reassessing their interests and academic pursuits. the wisdom and advice imparted by this octogenarian thinker is humble but serious, practical but possessed of passion. wilson provides some historical and introductory accounts of the sciences in general, what science is, the scientific method, and what one could expect from a career in the sciences. *letters to a young scientist* is a thoughtful, generous offering, and also a plea for a new generation of students to consider a rigorous pursuit of scientific exploration, because, as he says in the prologue, "the world needs you - badly."

> *what is this grand enterprise called* science *that has lit up heaven and earth and empowered humanity? it is organized, testable knowledge of the real world, of everything around us as well as ourselves, as opposed to the endlessly varied beliefs people hold from myth and superstition. it is the combination of physical and mental operations that have become increasingly the habit of educated peoples, a culture of illuminations dedicated to the most effective way ever conceived of acquiring factual knowledge.*
>
> ~
>
> *the ideal scientist thinks like a poet and only later works like a bookkeeper. keep in mind that innovators in both literature and science are basically dreamers and storytellers.*
>
> ~

> *the right question is intellectually superior to finding the right answer... to search for unasked questions, plus questions to put to already acquired but unsought answers, it is vital to give full play to the imagination.*

if you're not already familiar, be sure to check out the encyclopedia of life, a bewilderingly impressive resource and the most comprehensive database of its kind. wilson's 2007 ted prize speech was the catalyst for this vast, wondrous project.

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tonia peckover says

Edward O Wilson brings his substantial experience to this set of letters to young people who are interested in the sciences. Speaking mostly from his experience as an evolutionary biologist specializing in ants, he dispels a lot of myths about who can be a scientist (you don't necessarily need to be good at math!) and shares how the work of science actually gets done. His passion for his own research leads him off into tangents occasionally, but those are also some of the most interesting chapters as he explains how he and his partners discovered rare ants in remote jungles or puzzled out the workings of pheromones. There are moments of tone-deafness, as when he dismisses faith, or all of the humanities, but those moments are brief. I think this book could be highly encouraging for young people in high school or beginning college who want to enter the sciences.

Chrissy says

This books should more accurately be titled "Letters to a very young field biologist," or "Anecdotes from an entomologist that may only be of minimal interest if you have no interest in bugs."

Thankfully, it was a quick read.

E. O. Wilson is clearly a successful and prolific scientist, but success in biology does not good-general-science-advice make. It's always interesting, to me, to hear about how researchers started their careers. Oftentimes it's encouraging to learn that some favourite minds fell into their fields by sheer chance, by randomly uncovered passion or talents, or by circuitous routes through esoteric areas of knowledge or counterculture. Wilson, on the other hand, wanted to be exactly what he become since childhood and followed a very standard route to get there: beginning as a boy scout and camp counsellor and ending up at Harvard. This is as straightforward an origin story as a scientist gets, and, while admirable, the story of a very precocious passion and intelligence followed linearly through to PhD has little to offer any student who *didn't* find their passion early on. Most scientists will not set their life trajectory by age 9, and most certainly will not go to an Ivy League school. Most, moreover, will not study biology. Some of us who consider ourselves scientists do not even study the "natural" sciences (gasp!).

I was disappointed, as a young scientist, to find a book of this title written decidedly not for me.

Robin says

Disappointing.

This is more of a disjointed memoir than "letters" to a scientist. A lot of this advice is either outdated or specific to biology. If I told my advisors I would only do research in a "sparsely inhabited field" as Wilson suggests, they would say, good luck finding one! Not to mention most advisors I know don't let their graduate students choose their own projects. You do work on the projects that are funded, end of story, usually.

But perhaps the part of the book that made me really angry was the unnecessary dig at the humanities. Wilson says, and I quote, "There is only one way to understand the universe and all within it, however imperfectly, and that is through science. ... Granted that many in the humanities, as if in a bunker, fiercely defend their isolation. ... Yet however much the humanities enrich our lives, however definitively they defend what it means to be human, they also limit thought to that which is human, and in this one important sense they are trapped within a box."

Look here, old dude. I don't know any one in the humanities who views their field as isolated from the science and technology in the world around us. If anything, the best parts of the humanities help us make moral, ethical, and spiritual sense of our ever changing reality which is increasingly based on science and technology. There are plenty of books and artworks that are from the perspective of non-humans, so that critique of being trapped in a human box rings hollow. This is the classic mistake of a scientist confusing the practice of science: science is a fact-discovering enterprise, with the value system based on science: science is a rationalist approach to life. The latter is not an integral part of the scientific community, it is a value judgment that society should make all decisions based on science because that is the 'best' approach to being human.

He goes on to obliquely attack science fiction as being not based on science, and then writes his own "science fiction" paragraph about supertermites, which, if it was a book, would be the most terrible science fiction writing I've ever read.

Blech.

Ray says

I've read a few science books lately and you can't get through too many without references to E.O. Wilson, a legend in the field of biology. I finally decided to pick up one of Wilson's own books and "Letters to a Young Scientist" is a pretty good place to start. The best parts of it read like you're listening to a grandfatherly man looking back on his career and imparting whatever lessons he's learned to help the next generation of scientists.

I was honestly surprised that Wilson is still alive and kicking. He just seemed so revered in other books that I figured he was a titan from decades past. He's 88 now.

The first few chapters were a look back at his own start - amateur explorations of nearby fields, stumps, trees and bays of Mobile, AL. This was the grandfatherly part and he seemed to honestly want to encourage the

next generation of young scientists and thinkers to find a passion and stick with it through the inevitable challenges. "First and foremost, I urge you to stay on the path you've chosen, and to travel on it as far as you can. The world needs you - badly" he says right on the cover.

Other parts really dig into the details of his career studying ants, which does make sense as he's the world's leading expert on the subject. Even in the most dense parts, though, you're never too far from a memorable anecdote.

This was a good intro to E.O. Wilson and I may do some additional looking to see what else in his large bibliography may be worth a read. This book, published in 2013, lists 28 other books to chose from. "From So Simple a Beginning: Darwin's Four Great Books" and "The Future of Life" sound particularly interesting.

Judy says

This is best suited for a young adult who has a passion for insects. Others would probably get a sense of what he's talking about, but the examples definitely come from his own experiences.

The first third of the book and the last chapter, I think are the most relevant. If I were to write a similar set of letters, it would read quite differently, mostly because my background is different from Wilson's. (Of course, his opinions are many-fold more credible than mine given that he's a prof at Harvard and earned a Pulitzer.)

p 32: *For two centuries the global human population has been doubling every several generations. Most demographers and economists agree that a global population of more than ten billion would make it very difficult to sustain the planet. We recently shot past seven billion. ... Humanity is racing toward the wall.*
A thought that we all need to keep in mind.

p 92: There is *an introversion in the innovator that keeps him from team sports and social events. He dislikes authority, or at least being told what to do. He is not a leader in high school or college, nor is he likely to be pledged by social clubs. From an early age he is a dreamer, not a does. ...*
I'd like to share this passage with a group of scientists and listen to their reactions.

p 151: ... *The Double Helix, arguably the best memoir ever written by a scientist, a book I recommend to any young person who wants to experience almost personally the thrill of scientific discovery.*
I agree, but I also suggest that every science teacher take the time to read this book.

Daniel McHugh says

"Letters to a Young Scientist" might easily be mistaken as a call for young Americans to take up arms on the scientific battlefield in the fight to conquer the unknown. To be sure, Wilson pushes for a greater understanding of the scientific community by the youth of his homeland. He touches on how misunderstood the sciences have become to both our students and the institutions which teach them.

However, the overarching argument in "Letters to a Young Scientist" is not actually directed at the privileged class of young people lucky enough to enter the wealthy institutions of higher learning in the richest country in the world. Actually, just like his work in biodiversity, Wilson casts a wide net, pleading to any and all who

will listen about the dire need the human species is facing in the realm of science.

Wilson appears to couch his argument in a finely tuned explanation of how science is not solely the realm of the extraordinary. In truth, argues the author, to be successful in science one must simply possess an inquisitive mind, the passion to persist and the discernment to know when to call on others for help. This argument will definitely bolster the courage of any B student to stay in the fight a bit longer, but beneath the facade lies the true genius of Wilson's book. Science is not done yet.

Gazing around our wide world, many a young person might find little to conquer. Our standard of living has reached heights unimaginable to our ancestors. Outside of a few major diseases and the occasional flare up of emergencies, there is little left that a scientist might hope to conquer and leave a mark like Salk, Curie or Edison.

That is where Wilson is his most persuasive. His descriptions of our ignorance concerning our own planet are profound let alone his descriptions of what little we know of the cosmos, particle science or the other major branches in the scientific tree. He cites example after example of mountains to be climbed in the scientific universe. In addition, Wilson heaps the threats of global warming, massive overpopulation, extinction, ecological devastation, and energy dependence on the fires of our need. These threats make our need for advancements in science even greater.

In short, Wilson's "Letters" are a passionate plea for everyone to wake up, step from the numbing comfort of second half of the 20th century and forge ahead into the bright new future of science before the inventions of that comfortable period pull us past the point of no return.

Carolina says

Originally posted at: A Girl that Likes Books

Put passion ahead of training

Why I read this book?

While listening to the *Nature* podcast this April I learned about this book. Needless to say, as a young scientist myself I went to get it immediately. I couldn't read it until know, and boy, was I missing out!

What's the book about?

Edward Wilson is a renowned scientist, particularly in the fields of entomology and sociobiology. He has won several prizes, including a Pulitzer, and in this book he shares his views as how he "made it" in science. From making the decision to work in science through the difficulties of the scientific method, up to that inevitable moment when you doubt yourself, Wilson talks about how he felt, how he confronted different challenges, all while talking directly to the reader

Final thoughts

I took so much from this book. I realised half way through that I was taking a quote from almost every single mini chapter. There were moments when I put the book down and sight deeply because I identified with the struggle he was describing; moments were I felt like tears might be coming because I felt like a sweet grandfather was holding my hand and telling me everything would be ok. The book opens with this line:

You made the right choice [...] the world needs you --badly.

I'm telling you people, some days you really wonder if you did make the right choice, getting into science, because is so easy to get discouraged, with experiments that won't work, people that will doubt the very core of your ideas...but you have to go on, and this book is full of encouragement. I would highly recommend this book to everyone with a career in science, whether they are starting, in the middle or retiring; for these last ones, I'm sure it will bring you fond memories of when you were just beginning in this path.

Jay says

The title is correct, this is a book aimed to convince a young person, probably in high school, to continue their studies as a scientist. The author really puts things in perspective of his own life as an ant researcher at Harvard. A few decades back when I was in high school, I was the target market for this book, a kid interested in science and interested in ants. I even had put together a game of different ant species warring with each other. Ends up I was more interested in building things, like that game, and in technology - I went down the engineering path. Had I read this book then, though, I may well have switched majors. He makes the case that science, and especially biology, can do good in the world. It is his closing argument, and he makes it strong. He pointed out some valuable benefits in science careers, like being able to research in labs or do work in the field, variety that I value more now. And he subtly points out that working for money shouldn't be the main reason to enter any career. So given that I think this could change minds, or at least provide comfort to those deciding to start on a science career, this is a very useful book.

Won in Goodreads First Reads contest.

James Dittmar says

Wilson does an excellent job at summarizing some very important pieces of advice in science. He espouses the importance of the "prepared mind", the necessity of in depth and general knowledge of the subject area, and the benefits of being passionate about your area of interest. He provides some encouraging remarks for students who do not excel at math, and some observations about the importance of IQ in science (he actually argues that a high IQ may be harmful because it does not necessitate that the individual persevere).

But his advice is not broadly applicable to all types of scientists. Wilson is a naturalist--he derives questions about the world based on observations in nature. He then thinks about possible ways in which those phenomena occurred. While this path worked for Wilson, I don't think it is the only possible meaningful path. Molecular biologists, as an example, spend very little time in the "natural" world, and instead focus on phenomena that are difficult to observe with our unaided senses. He also categorizes faculty as fitting into one of two categories: the insiders and the outsiders. He recommends that budding scientists opt for the latter, and eschew, as much as possible, teaching responsibilities and departmental obligations beyond

serving on a thesis committee. He also advocates against so-called think-tanks, and instead recommends a more solitary approach, catering especially to the introvert.

I don't think that his advice is wrong, but I also don't think it is balanced. This book is basically a case study of a successful scientist, and I think it should be viewed as such, rather than a general book of advice. And as a scientist, I wished he would have provided more reasoning as to why he makes specific recommendations or at least provide more examples that support his claims.

Evan Kristiansen says

Letter's to a young scientist should be re-titled as "Letters to a young person considering science". This book has very little in the way of advice for someone who is already in a formational science program, let alone someone already in a PhD program. Wilson spends a lot of time reminiscing about his past, which makes the book very biology focused. Another consequence of his focus on his own career is that this book becomes unhelpful to someone who is unsure about their aspirations in science. I am currently deciding whether I want to pursue a PhD or not, this book seems to suggest that unless I have had a passion for the model system since high school, I will not be successful.

He also includes a few ludicrous lines such as "real scientists do not take vacation" and "a real scientist can talk to their spouse and think about work". People cannot balance their private and work lives and still be successful scientists? But then, he is a very famous individual; he has seen a lot of success in his time.

Overall the book was decently well written, paced well (if abruptly), and engaging. I took away the stars because I don't think it lives up to the promise of the back cover.

Jordan Myers says

Everyone who has taken an ecology class has heard of E.O. Wilson, and as a Zoology major in school I had to learn all about his theory of island biogeography. I saw this book a couple months ago and decided to grab it because I'm attempting to get into graduate school as a lower GPA student. I've been very discouraged thus far and thought this book might give me the encouragement I needed. For the most part, it did. The book does a great job of rousing the inner scientist and dreamer in you. A lot of his advice was very useful, and he has a lot of examples to guide you along. The only thing keeping this from being a 5-star book, in my opinion, is the fact that some of his examples are dated.

Wilson basically stumbled into a field where no one was doing anything and he was able to make great strides, create new departments, and went straight from backwoods Alabama to Harvard. That was fairly plausible in the 40s and 50s, but not anymore. Some of what he says is timeless: there really *are* new areas to stumble into, and there are plenty of opportunities to make novel discoveries, but the way academia is funded and the pure nature of the creature in the 2010s just make it very difficult. You're judged now, more than ever, on how much money you can bring and how good your grades were.

I would love to have the ease of entering academia from the 1940s without all the blatant racism and with modern knowledge, but that's just the dreamer in me again. But that dreamer just finished the book and is going to use its lessons to continue on toward his goals.

ade_reads says

This is my 91th book for my Goodreads 2016 Reading Challenge ;)

Edward. O. Wilson, a biologist himself (in fact, he is the world's leading expert in myrmecology (study of ants)), he writes a "practical" and "realistic" book of advice for anyone considering a career in science.

Some main points include:
1. Contrary to popular belief, you should stay in science because there is a great need for scientists!
2. Do it out of love. Passion is what will get you through your career, not high IQ or math skills.
3. Maximize your marketability by choosing a field that is not overwhelmingly popular (less competition)

So, before ruling out a career in science, read this book. Let an expert and a scientist show you what's "realistic", rather than a materialistic consumer culture.