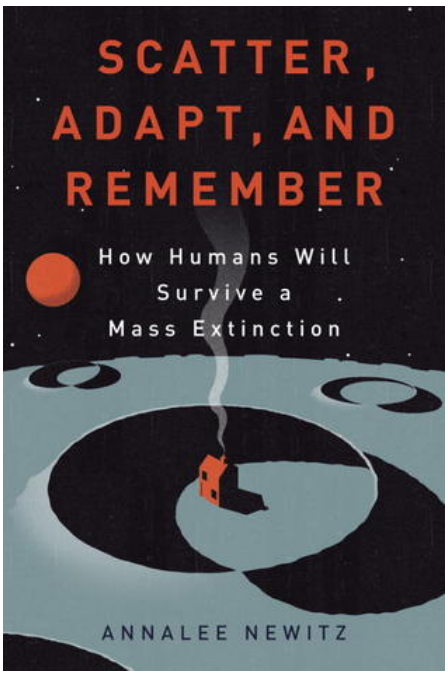

Scatter, Adapt, and Remember: How Humans Will Survive a Mass Extinction

Annalee Newitz

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In its 4.5 billion–year history, life on Earth has been almost erased at least half a dozen times: shattered by asteroid impacts, entombed in ice, smothered by methane, and torn apart by unfathomably powerful megavolcanoes. And we know that another global disaster is eventually headed our way. Can we survive it? How?

As a species, *Homo sapiens* is at a crossroads. Study of our planet's turbulent past suggests that we are overdue for a catastrophic disaster, whether caused by nature or by human interference.
It's a frightening prospect, as each of the Earth's past major disasters—from meteor strikes to bombardment by cosmic radiation—resulted in a mass extinction, where more than 75 percent of the planet's species died out. But in *Scatter, Adapt, and Remember*, Annalee Newitz, science journalist and editor of the science Web site io9.com explains that although global disaster is all but inevitable, our chances of long-term species survival are better than ever. Life on Earth has come close to annihilation—humans have, more than once, narrowly avoided extinction just
during the last million years—but every single time a few creatures survived, evolving to adapt to the harshest of conditions.

This brilliantly speculative work of popular science focuses on humanity's long history of dodging the bullet, as well as on new threats that we may face in years to come. Most important, it explores how scientific breakthroughs today will help us avoid disasters tomorrow. From simulating tsunamis to studying central Turkey's ancient underground cities; from cultivating cyanobacteria for "living cities" to designing space elevators to make space colonies cost-effective; from using math to stop pandemics to studying the remarkable survival strategies of gray whales, scientists and researchers the world over are discovering the keys to long-term resilience and learning how humans can choose life over death.

Newitz's remarkable and fascinating journey through the science of mass extinctions is a powerful argument about human ingenuity and our ability to change. In a world populated by doomsday preppers and media commentators obsessively forecasting our demise, *Scatter, Adapt, and Remember* is a compelling voice of hope. It leads us away from apocalyptic thinking into a future where we live to build a better world—on this planet and perhaps on others. Readers of this book will be equipped scientifically, intellectually, and emotionally to face whatever the future holds.

Scatter, Adapt, and Remember: How Humans Will Survive a Mass Extinction Details

Date	:	Published May 14th 2013 by Doubleday (first published January 1st 2013)
ISBN	:	9780385535915
Author	:	Annalee Newitz
Format	:	Hardcover 305 pages
Genre	:	Nonfiction, Science, History, Audiobook, Anthropology

From Reader Review Scatter, Adapt, and Remember: How Humans Will Survive a Mass Extinction for online ebook

Mike says

Even though not all topics are fully developed (why is the vision of only one science fiction writer discussed in any depth?) or directly relevant (what exactly does the migration of the grey whale have to do with survival of mankind again?), this book is a worthwhile read for no other reason than the sense of scale and scope that it imparts. We're talking the Big Picture here, the planetary picture, and, for many, many reasons, that picture is always changing, always evolving. Some of these changes have lead to six mass extinctions. But change is also what might, just might, enable our continued existence of our species into the far distant future. The author points out, for example, that birds evolved feathers millions of years before they started flying, and animals had limbs long before they started walking. I love the implication. We already possess the means to survive this technological adolescence of ours. We already possess the means to save ourselves.

Brian Clegg says

I'm not a natural audience for books about surviving disasters (even though I wrote the Global Warming Survival Kit). I can't stand disaster movies, because I can't take the pragmatic 'Oh well, some survive,' viewpoint as I watch millions perish. So I thought that I would find this book, with its subtitle How Humans will survive a mass extinction somewhat unappetising – but I was wrong.

The Earth has gone through a number of mass extinctions, where a fair percentage of living species have been killed off. The most famous is the one that mostly took out the dinosaurs around 65 million years ago, but there have been others and, Annalee Newitz points out, if we want to see the long term survival of the human race, we need to be able to make it through one, should it turn up, whether caused by climate change, pandemics, a supervolcano or an asteroid.

What Newitz does surprisingly well here is weave together what are really around four different books, all in one compact volume. We start of with palaeontology, looking back over previous mass extinctions, getting a better understanding of what happened, what survived and how it survived. From here we segue into human pre-history and history, drawing lessons from the plight of the Neanderthal and the impact of plague and other pandemics. After this, in a transitional section we see the examples of the three techniques in the book's title – scattering in the Jewish disaspora, adaptation in cyanobacteria (and how we could use it) and remembering on the part of the gray whale, before taking another transition into a more science-fiction driven view.

Newitz starts by pointing out the potential lessons to be learned from the SF writing of Octavia Butler who is apparently 'one of the 20th century's greatest science fiction writers', which I was a bit surprised by as I read a lot of science fiction and I've never heard of her. The segue here is into the shakiest part of the book where it dabbles in futurology. This broadly divides into relatively short term survival approaches and longer term diaspora into space.

One of the reasons this is the weakest part of the book is that Newitz offers us castle-in-the-air solutions with no obvious way (and certainly no hint) of how to get there from where we are now. So she says we will need underground cities if we need to survive some kinds of impact, while we would be helped by building green

cities that merge biology and construction… but it’s not clear how we would ever get started on such major, long term projects. She doesn’t address the reality that humans are very bad at taking the long view.

I was, though, pleasantly surprised by this book, particularly the first half. This is genuinely interesting and thought provoking, up to and including the Octavia Butler section. And though it goes a little downhill after that, it never fails to be readable and interesting – just a little far fetched. So congratulations to Newitz on taking the rare long view – and in having optimism for our ability to survive what the universe can throw at us.

Review first published on www.popularscience.co.uk and reproduced with permission

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First Second Books says

All the most fun parts of mass extinctions throughout history – dinosaurs! volcanos! Neanderthals! – combined with the fun parts of what we can do to survive them in the future (the living biological cities are a favorite of mine).

Nonfiction doesn’t get much better than this.

Wendy says

When U.S. science journalist Annalee Newitz, founding editor of the science website io9.com, set out to write a book about the future of humanity, she expected to find the end was nigh.

Instead, her research led her to believe the opposite: that "humanity has a lot more than a fighting chance at making it for another million years."

The optimistic result is Scatter, Adapt, and Remember, a refreshing pop-science book that examines ways humans could prevail at Armageddon.

What does humanity's future look like? You might be surprised: Newitz, who is based in California, thinks it looks like Saskatoon.

The Saskatchewan city "has survived despite its hard climate, and people there have found ways to incorporate the latest scientific advances into their agriculture and urban design without overspending," she writes in the introduction to the book's Canadian edition.

Scatter, Adapt and Remember is not a manual; it will not help you duck and cover or stock your survival shelter.

Rather, Newitz takes a page from Alan Weisman's 2010 book, The World Without Us -- which conjured the changes coming to a depopulated world -- and imagines instead how Homo sapiens can survive whatever attempts to depopulate us, be it nuclear war, plague, asteroid, or some other curse we have not imagined or invented.

Newitz begins with a review of the history of mass extinctions on Earth -- from the Proterozoic microbes of 2.5 billion years ago through dinosaurs and whales and Neanderthals. The book is at its driest here, a sort of super-condensed Brief History of Everything, with a special focus on dying.

By the middle of the book we're considering the lessons previous mass extinctions -- and their survivors -- have taught, the lessons of the book's title: scatter, to escape adversity as best you can; adapt as the world around you changes, and remember: pass on the knowledge of how to survive.

It's worth enduring the rather arid history lesson at the beginning to get to Parts 4 and 5, where Newitz is at her most speculative. Here she really leave Weisman far in the dust, imagining how humanity will survive a million years into the future, perhaps as part-robot, or perhaps living on the Moon, on Mars, or beyond.

"Our kids are the last generation who will see no city lights on the Moon," predicts a NASA scientist, one of a hundred fascinating experts Newitz interviews.

Did you know the United Nations has an "action team" on the "Committee on the Peaceful Uses of Outer Space" that would co-ordinate Earth's defences if an asteroid appears to be headed our direction? Scatter, Adapt and Remember will help you rest easy, safe in the knowledge that someone out there is working hard to keep space rocks from killing us all.

By the time you get to the end of the book, you might find yourself downloading CD3WD, a "backup copy of everything history has taught us about creating an early industrial society."

Stored on a few DVDs or (perhaps more practically) printed and secured in your post-apocalypse survival kit, it'll help you rebuild human civilization from scratch -- just in case the future goes a bit sideways.

"Things are going to get weird," Newitz concludes. "But don't worry. As long as we keep exploring, humanity is going to survive."

Review published in Winnipeg Free Press: http://www.winnipegfreepress.com/arts...

John says

How Humanity Will Survive Mass Extinctions and Other Calamities

Humanity has the potential of surviving calamities as dire as the next mass extinction. That is the hopeful message lurking behind science journalist - and founding editor of the science/science fiction website io9 – Annalee Newitz’s book “Scatter, Adapt and Remember: How Humans Will Survive a Mass Extinction”. Hers is a lively, rather engaging, look at mass extinctions and other notorious agents of mass mortality like famines and disease pandemics, on how survivors have coped with them and on the potential of human engineering for preventing humanity’s extinction. However, it is an examination that some may view as superficial with regards to its depth, in stark comparison with, for example, some of the best science writing from the likes of David Quammen, Carl Zimmer, and invertebrate paleobiologist Peter Ward – who was interviewed for this book – that delves deeper into the science behind disease pandemics and mass extinctions. While I admire Newitz’s literary style and the vast scope of topics and issues she discusses, I’ve noted some glaring editorial errors which detract from the book’s overall quality; these include incorrectly referring to synapsid mammal-like reptiles as mammal-reptile hybrids (Page 37), gray whales as among the

oldest cetaceans since they evolved 2.5 million years ago (Page 137) when their phylogenetic (in plain English, genealogical) history probably dates back at least 25 million years ago if not before, or identifying paleobiologists (a newer, more accurate, version of the term paleontologist) Peter Ward and Jessica Whiteside solely as geologists when their primary research specialties are respectively, invertebrate paleobiology (Ward), and vertebrate paleobiology and paleoclimatology (Whiteside).

As much as I enjoyed reading her chapter devoted to the terminal Ordovician mass extinction ("Two Ways To Go Extinct"), as a former invertebrate paleobiologist I wish she had mentioned the Great Ordovician Diversification Event that occurred for much of the Ordovician, yielding substantial - and far more rapid - increases in metazoan (multicellular animal) taxonomic diversity on a scale far greater than the so-called "Cambrian Explosion"; a discussion of this might have emphasized why the terminal Ordovician mass extinction should be viewed, along with the terminal Permian mass extinction, as the worst in the history of life on Earth. Moreover, there is no substantial discussion on how the biosphere recovers from mass extinctions as devastating as the terminal Ordovician, terminal Permian and terminal Cretaceous extinctions - which would have been appropriate for this book - especially when paleobiologists and ecologists have been statistically analyzing the fossil record in studying the timing and severity of mass extinctions and the recovery times for restoring Earth's biodiversity to pre-mass extinction levels for decades. Nor do I concur with her less than favorable assessment of the "Out of Africa" theory for spreading modern Homo sapiens across the globe in favor of the earlier multiregional theory suggesting that Homo sapiens evolved separately - but simultaneously - in Europe and Asia in the chapter "Meeting the Neanderthals", when mitochondrial DNA evidence still strongly supports the "Out of Africa" theory, according to what I have seen at websites like those of the American Museum of Natural History and the University of California, Berkeley's "Understanding Evolution". Relying solely on anthropologist and science blogger John Hawks' genetic evidence in support of the multiregional theory should not have led Newitz to conclude that it may be a better scientific alternative than the currently accepted "Out of Africa" theory. These are not the only instances where Newitz strays from the high journalistic standards practiced consistently by the likes of Natalie Angier, Cornelia Dean, David Quammen, Jonathan Weiner and Carl Zimmer, but they are among the most notable insofar that she tends to voice her own opinions instead of relying upon the words of scientists or in failing to emphasize scientific consensus in support of both the asteroid impact theory for the terminal Cretaceous mass extinction and the "Out of Africa" theory for Homo sapiens' dispersal around the globe.

Newitz is at her best in describing how prior human technology saved some populations from the ravages of disease and conquest in her chapter “Cities That Hide” or in making cities “death-proof” (especially the chapters “The Mutating Metropolis”, “Using Math to Stop a Pandemic”, and “Every Surface a Farm”). She also excels in taking in Part V – the concluding section – “A Million Year View”; her accounts of geoengineering (“Terraforming Earth”), asteroid detection and preventing an asteroid collision with Earth (“Not in Our Planetary Backyard”) and building space elevators (“Take a Ride in the Space Elevator”) are worth the purchase price of this book. I also highly recommend her excellent overview of Jewish history over the millennia as one which resonates strongly with the book’s title in the chapter “Scatter: Footprints of the Diaspora” and her terse, but insightful, look at optimism for humanity’s future that is a reoccurring theme in Octavia Butler’s acclaimed science fiction (“Pragmatic Optimism, or Stories of Survival”). That these are the best sections of Newitz’s book isn’t surprising given her longstanding interest in science fiction as io9’s science editor. Though there are other, better, books which explore in greater depth the themes discussed here, none have the vast scope or the emotional resonance that is displayed abundantly, and for these reasons “Scatter, Adapt, and Remember: How Humans Will Survive a Mass Extinction” is still a work of popular science journalism worthy of a wide readership.

(EDITORIAL NOTE 5/15/13: As a book on mass extinctions, it seems to ignore important research done by

the "Chicago School" of invertebrate paleobiologists - the late Jack Sepkoski, David Raup, David Jablonski and Michael Foote (all of whom were or are currently members of the Department of the Geophysical Sciences, University of Chicago) - in looking at the severity, timing and ecosystems recovery in the aftermath of mass extinctions that they and their colleagues have done since the late 1970s/early 1980s. Nor does the author acknowledge the overwhelming paleobiological and molecular genetic data in support of the "Out of Africa" theory accounting for Homo sapiens' dispersal around the globe. IMHO these are two of several glaring defects in this book which reduces its importance as a good work of popular scientific literature devoted to the themes alluded to in its title.)

Wanda says

Scatter, Adapt, and Remember

I won this book via Goodreads First Reads. Thank you.

I totally enjoyed this book on so many levels. The book is divided into five sections. The first section starts out in ancient earth and covers the diverse ways earth has experienced mass extinctions. Thanks to tiny blue - green algae that knit itself together earth went through an oxygen apocalypse. The amateur geologist in me loved the first part. Besides covering biological and geological changes, part one also talks about the various climate changes earth has gone through over the ages.

The second part covers the history of mankind upon the earth. The amateur paleontologist in me was hooked and I couldn’t stop reading! I could be a Neanderthal descendant. This part talks about extinction from plagues and famine.

Part three is about how people in the past have survived mass extinction threats. Now this is where I’m grateful that this book is NOT just another load of conspiracy theories spouting off that we’re all going to die (except for the rich who can afford to live in fortified underground bunkers and bribe God into not doing them in).

How to build a death-proof city, part four, covers wondrous scientific and engineering feats that have been and are still being developed to make our residences survival havens and more disaster proof. I think the thing I liked most about this section is the doing away with the city mouse vs. country mouse. And melding the two into one location is simply smart by any standard. Being self sufficient should never become a lost art. This section also discusses the underground cities in Turkey, which is what captured my interest in this book in the first place; Fascinating stuff.

And part five is about all the diverse ways we can save our planet and ourselves from mass extinctions. The author did an excellent job discussing scientific and engineering subject so that anybody can understand.

Wendy Wagner says

Full of positivity, this light book is a great comfort read. The information about previous mass extinctions and evolution was deftly handled, and the research always felt thorough and interesting. Sometimes the writing felt a bit forced, but overall, just the thing to ease my existential angst.

Sheehan says

Considering that most of the books I read tend to focus on the very short immediate present and future, the much longer history of the planet Earth and it's multivariate surviving species against all odds was a refreshing change.

Newitz's focus is entirely optimistic investigation of how pre-human species survived the various major planetary upheavals, and how they are relevant and applicable to humanity's future in surviving any number of extinction level events. I learned a great deal about Earth's many major collapses and how as the titles states, some combination of scattering, adapting and retaining workable strategies were instrumental in at least some lifeforms navigating a path to the next vastly different era of Earth's life.

The last third of the book is reminiscent of my favorite science fiction as a youth, a very hopeful examination of modern ideas that could actually get us off Earth, or at least bunker down IN the earth long enough to rise again in whatever evolved format we achieve to persevere the adversity.

Considering how much I obsess about survival prep for the seemingly huge scary lifetime events, this book expands the perspective away from individual life issues and solutions, to much more grand collective survival questions as a species...very successfully.

The book is well-written and researched; a fun read I would recommend it to anyone interested in futurism.

Emma Sea says

Pretty good: a bit light on the science in places, but eminently readable. I found Newitz too optimistic when it came to human nature. We do not make rational decisions. It was surprising that she didn't address rising sea levels at all. Yes, an asteroid is in our planet's future, but coastal flooding is in the immediate future of many of us alive now. Arguably that's not an extinction event, but neither is disease, and she covered that.

Overall, 3.5 stars, rounded down.

Doug says

Covers a wide range of topics...too wide...from extinction history, evolution and early human migration to genetics, space colonization, terraforming, and on and on. Consequently, each of these potentially fascinating subjects is given short shrift and broad-brush generalizations, and I felt short-changed. In addition as a geologist and chemist, there are too many factual errors here with which I can comfortably cope, and way WAY to much emphasis on consensus (real or perceived) when there is none.

Kate says

Full Disclosure: I received a free galley from the Amazon Vine program in exchange for a review.

I want to mention the positive things about *Scatter, Adapt, and Remember* before I get to the problems with it. Here they are:

1. This is an awesome subject, that of future human evolution and radical approaches to sustaining human life on this planet and beyond. I was nominally interested in this type of futurism before reading SAR, but now I'm ready to attack the Canon.

2. Newitz is a great writer: lively and informative.

3. Newitz is also has a very fascinating thesis: humanity survived past catastrophes and will survive future catastrophes by 1) Scattering to distant and more hospitable locales or possibly planets, 2) Adapting to their new environments and 3) Preserving their symbolic culture for future generations.

4. DINOSAURS! PRE=HISTORIC HUMANS! They are covered here

5. For bibliophiles who all of a sudden found themselves VERY interested in mass extinctions and futurism, the notes are a treasure trove of references to books and articles. My to-read list just kept growing and growing.

6. Fascinating discussion of how science fiction might teach us how to survive the apocalypse.

That's done, now here's the bad part. The two-star part:

This book is too damn short.

It's a common complaint I read in reviews on goodreads and amazon: this book could have used a better editor. *This* book might have been better with out one. You can practically see the red ink on the page here. So much is missing, the culprit completely obvious from the perfectly palatable-to-hoi-polloi 300 pages here. The chapters so formulaic, like a sixth grader's book report. Say what you're going to say. Say it. Say what you said. Book profiles come with lots of statistics: page length, date of publication, weight, dimensions. There should be an additional: Optimal page length. This is an 800 page book squeezed into 300 pages. Entire arguments are gutted to fit each chapter section into a neat three paragraphs, leading the reader to have to make the logical leaps necessary to complete them. A subject as complex as the evolutionary advantage of diaspora is given a single example from human history. The chapter on adaptations covers one that is still in R&D - more of a potential future adaptation. On the whole, the subject matter hinted at in the title gets three sections out of six: You had no idea you were reading a book about space elevators, did you?!

I would gladly have read five hundred more pages of this in exchange for more examples and completed arguments. This really could have been a three book trilogy: 1) How mass exticntions have gone down in the past: 2) Ways organisms have survived them 3) space elevators will solve everything. I anticipate with glee wasting hours on io9.com, based on the strength of Newitz's writing. I will read her next book. I just hope that someone will lay off of the red pen next time.

Jaylia3 says

Love post-apocalypse fiction? Here’s apocalyptic science made utterly fascinating and relatively hopeful--

How can humanity survive life-annihilating disasters like global warming, cyclical ice ages, cosmic radiation, mega-volcanoes, rampaging pathogens, and asteroid strikes? After talking with scientists, engineers, philosophers, historians, technicians and--as she puts it--sundry brainiacs, Annalee Newitz has a few suggestions. Since I inexplicably love novels, movies, and TV shows set in post-apocalyptic times I found her book utterly fascinating.

Scatter, Adapt, and Remember covers a vast territory of time, from the earliest days of life on Earth until a million years in the future. The first section, A History of Mass Extinctions, describes times when life was almost snuffed out completely, only to reemerge adapted for new conditions. Often these almost end-times were brought on by external forces, but it turns out we aren’t the first species to pollute our own environment--that would be the oxygen spewing cyanobacteria (or blue-green algae). Oxygen was poisonous to the life forms of early Earth and most of them died off when it began to fill the atmosphere, but the change set our planet on a trajectory that gave rise to the world as we know it.

The second section of the book, We Almost Didn’t Make It, covers times when starvation or plague killed vast numbers of people. Lessons From Survivors draws its conclusions from many different life forms that have survived mass death, not just humans. Sections titled How to Build a Death-Proof City, which suggests possibilities like underground communities, urban agriculture, and bioplastic buildings, and The Million Year View, which has space colonies among its ideas, conclude the book.

Some of the information is necessarily speculative, but science is exciting in Newitz’s hands. It’s a hopeful book, drawing ideas for the future from the many times life forms on Earth have managed to sneak past the ultimate grim reaper.

Scott says

Going on subject matter alone, Annalee Newitz's piece of nonfiction sounds like it would be great, a portrait of Earth's first five mass extinctions, a look at why we're probably in the midst of a sixth, and a guide to how we, humankind, can ultimately survive when other mighty, planet-ruling species could not. (SPOILER: by scattering, adapting, and remembering.) But Newitz, the editor of io9, can't pull it off. In fact, this is one of the very few books I've ever stopped reading once I've gotten this far in (about three-quarters of the way), because I was just getting too annoyed. Life's too short to feel irritated and restless when reading for fun. For example, Newitz spends five pages recapping the narrative and themes of an Octavia Butler science fiction distopian novel in order to prove a point about something that became more and more elusive as she went on. In another section she cites plot points from the movie Contagion to further her ideas about combating infectious. Now, I'm all for breezy treatments of complicated, even harrowing subjects, but Newitz isn't kidding around here. These (and their ilk) are her sole sources, dryly delivered. Plus: she can barely conceal her contempt at the very notion of "the city". Maybe you'll like Scatter, etc. (Amazon sure did, giving it a "Best of May" trophy), but I definitely did not.

Dan Barr says

note: This review is for an advanced, uncorrected proof
Scatter, Adapt, and Remember is a book of both solid strengths and clear weaknesses. On the one hand it is a book about an important, and under-appreciated topic; the various potential apocalypses and how we, as a species, might survive or avoid them. On the other hand, as a book that should offer a wide range of scenarios and solutions, it left me wanting. This is especially true when Newitz broaches the subject of science-fiction, a genre with literally thousands of examples of humans surviving natural and man-made disasters, alien landscapes, and space environments, and yet she restricts her examples to one single author's work, and even that only for a few pages. In other chapters, researchers and experts are introduced, given a paragraph, and then left behind while I was left wanting to hear more about their thoughts and discoveries. Certainly Newitz had more from them; she traveled the world to do research for this book and I'm sure a single quote per interview wouldn't have justified the expenses, it's unfortunate that she couldn't find space for more extensive dialogue.
The book is very effective, however, in its approach to the various apocalyptic scenarios. This (thankfully) is not a book of conspiracies or ethical arguments. You won't find any government cabals or secret organizations working towards the end times in this book. Even the environment question is posed with a clear understanding of just how much humans effect it, one way or the other, and how, in the end, we live on a planet that has been constantly changing for billions of years with little help from humans. The topics Newitz writes about are all presented clearly, and they are all topics that are well-researched, and are definitely possible agents of human extinction. The solutions she does present are well thought out and practical.
In the end, this is not the penultimate book on the survival of humanity, but it is a book that can get you started on a very interesting, and very important topic. If you are looking for a complete exploration of post-apocalyptic humanity, this isn't quite it. But if you just realized today that any day now the big one could hit and you are wondering if other people have realized that, this is a good book for you.

Gendou says

This book reads a little bit like a High School essay. It has lose structure and less of a thesis than a message of hope in the face of calamity, written in an immature, less-than-serious tone. Annalee Newitz makes mass extinction is fun!

Topics range from mass extinctions of the past, to the present anthropogenic (man-made) mass extinction, to the future of humanity on other worlds.

Sometimes, the author's fun-girl tone was inappropriate, like making jokes about the end of human life. Other times, it was condescending to the reader:

* Colony Collapse Disorder is not best described as "the extinction of bees"
* Synapsids are not "mammal/reptile hybrids"
* The Technological Singularity should not be referred to as an "intelligence explosion"

The author also gives wacko theories by fringe nutters like Gerta Keller, Ray Kurzweil, Rachel Armstrong, etc. This vague, magical speculation about a science-fiction future clashes with the science-fact history, and left me feeling uncomfortable. Fantasies like building living cities using synthetic biology, Geo-engineering

to fight climate change, and adapting humans for life in space are far less interesting to me than, say, the realistic goal of detecting and diverting near-Earth asteroids. But even the chapter on near-Earth asteroids left most of the science out.

There is a Sagan-like theme of mankind going into space which is also, sadly lacking. She mentions space elevators but doesn't go into any detail. I really was hoping to read more about that. Also, the cover of the book seems to show a house on the moon. Where was the chapter about moon colonies?! Come on, Annalee!

If you want to listen to a girl with sexy hair ramble about what she read in science news lately, read this book.

If you're looking for real science, look elsewhere.
