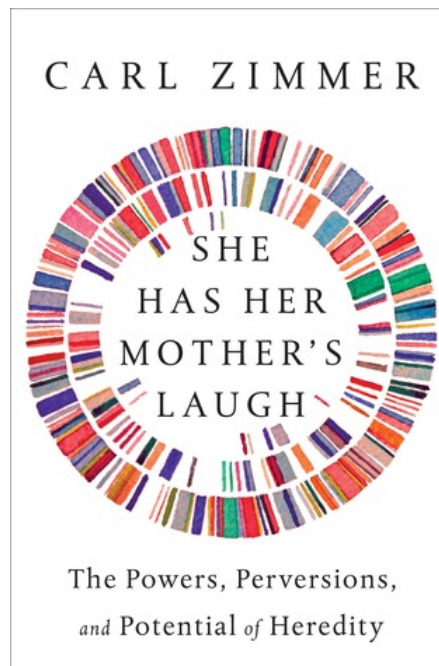




She Has Her Mother's Laugh: The Powers, Perversions, and Potential of Heredity

Carl Zimmer

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Carl Zimmer presents a history of our understanding of heredity in this sweeping, resonating overview of a force that shaped human society--a force set to shape our future even more radically.

She Has Her Mother's Laugh presents a profoundly original perspective on what we pass along from generation to generation. Charles Darwin played a crucial part in turning heredity into a scientific question, and yet he failed spectacularly to answer it. The birth of genetics in the early 1900s seemed to do precisely that. Gradually, people translated their old notions about heredity into a language of genes. As the technology for studying genes became cheaper, millions of people ordered genetic tests to link themselves to missing parents, to distant ancestors, to ethnic identities. . . .

But, Zimmer writes, "Each of us carries an amalgam of fragments of DNA, stitched together from some of our many ancestors. Each piece has its own ancestry, traveling a different path back through human history. A particular fragment may sometimes be cause for worry, but most of our DNA influences who we are--our appearance, our height, our penchants--in inconceivably subtle ways." Heredity isn't just about genes that pass from parent to child. Heredity continues within our own bodies, as a single cell gives rise to trillions of cells that make up our bodies. We say we inherit genes from our ancestors--using a word that once referred to kingdoms and estates--but we inherit other things that matter as much or more to our lives, from microbes to technologies we use to make life more comfortable. We need a new definition of what heredity is and, through Carl Zimmer's lucid exposition and storytelling, this resounding tour de force delivers it.

Weaving historical and current scientific research, his own experience with his two daughters, and the kind of original reporting expected of one of the world's best science journalists, Zimmer ultimately unpacks urgent bioethical quandaries arising from new biomedical technologies, but also long-standing presumptions about who we really are and what we can pass on to future generations.

She Has Her Mother's Laugh: The Powers, Perversions, and Potential of Heredity **Details**

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From Reader Review *She Has Her Mother's Laugh: The Powers, Perversions, and Potential of Heredity* for online ebook

Caitlin says

A truly mammoth book that should have been edited down to a few hundred pages. The interesting tidbits and stories were immersed in unnecessary prose and benign chapters that served no purpose except to increase the word count. Some stories SHINED and AMAZED (especially the chapter on Chimera, which was utterly fascinating), but it's a shame the reader has to wade through all of the weeds to discover the gems.

Jessica Howard says

So fascinating!!

Gerard Villegas says

After reading this, I'm gonna clone myself with my DNA or create a homonculous to help restart humanity. Lord knows we need it

Ernst Hafen says

A fascinating journey through the multi-faceted biological basis, historical and societal impact of heredity; from Aristotle to plant and animal breeders in the 18th and 19th century to Darwin, Mendel, eugenics, pre-implantation diagnostics and CRISPR/Cas. Carl Zimmer tells the story not in a chronological way but in different vignettes of researchers that are careful, struggle with or are too confident about their discoveries. The book reads or is listened to easily. Zimmer reduces scientific jargon to a minimum. We will chose this book for the elective bookclub with our first semester biology students at ETH. It is an excellent alternative the equally fascinating book by Siddhartha Mukherjee *The Gene - An Intimate History* which we used in the previous years.

Paul says

Yes, it's long – about 540 or so actual pages of text, followed by a glossary, bibliography and endnotes – but *She Has Her Mother's Laugh* does not waste a single page. Carl Zimmer has produced a masterpiece of science writing, distilling incredibly complex concepts into understandable and relatable language by using narrative journalism and personal anecdotes to perfect effect. Any questions you've had about DNA, genes, inheritance, and the moral and ethical questions surrounding them will be answered – as will numerous other questions you didn't realize you had.

Zimmer leaves no topic unexplored, from history to the future, from eugenics to in vitro fertilization, from

cancer to evolution. It's all there, and it's all tremendous. I found exactly zero weaknesses in this book, and highly recommend it to anyone wanting to expand their knowledge about how they got here and where we all are going.

Rahul says

The secrets of heredity have always fascinated human beings. Scientific pursuit of the manipulation of the odds of heredity among domestic plants and animals, as well as the works of Lamarck, Darwin others, offering theories behind the rules codified by Mendel, led also to efforts by eugenicists to "elevate" humanity by controlling the ability of humans to reproduce ourselves. Carl Zimmer writes this engaging book about heredity and our enduring interest in it.

With the discovery of DNA, the idea of genetics and Darwinian survival of the fittest seemed to have emerged as the only viable theory of heredity in the mid 20th century. However, Zimmer goes on to chronicle recent findings of the importance of epigenetics- impacts of modifications to gene expression in an organism rather than just the genetic code they are born with, which harken back to ideas of "perfectibility" within an individual rather than based just on affecting the odds of gene selection between generations. Genetic engineering has also advanced to the point where CRISPR, a technique derived from gene-repair, allows genome edits at the levels of individual genes, and "gene drives" artificially engineered into an organism can be designed to pass some genes on to subsequent generations with disproportionate selection and rapidly overwhelm the population. Zimmer also touches on ancient DNA and population genetics, as well as variations in traits like height and "General Intelligence" between human population groups but those sections are less impressive, and better done elsewhere. Overall, this book is entertaining and informative, and also important in a time when genetic engineering is beginning to impact many aspects of human health and reproduction.

Dramatika says

What a brilliant earth shattering book! The stuff good science fiction is made of except happening IRL now as we live. So many amazing new ideas and facts, I was forced to stop reading and just contemplate and share with friends and family what I read. I'm not very good at science, although love reading pop science books and magazines, yet this book was quite accessible even to someone with barely passable grade in biology class. I would love to thank the author for the wonderful experience of reading this great book!

Isaac Larkin says

Beautifully written, tackles important and fascinating areas of heredity. I was surprised to learn that if you go back just a few generations, your odds of sharing *any* DNA with any particular ancestor drops to almost 0 (and if you go back just a few thousand years, then every human being alive then is either every living person's direct ancestor, or no one's).

Zimmer also does a good job of tackling the ways in which the study of inheritance has been misused, from the eugenics movement to scientific racism to general questions of genetics and intelligence.

I found the entire section on embryonic development, mosaicism and chimeras astounding. It's fascinating to

think that somatic cells from children end up populating and contributing to their mother's body.

And finally, the book closes with an excellent survey of the ways in which science and technology are beginning to control and alter inheritance, from genetic engineering and CRISPR to stem cells and preimplantation genetic diagnosis, and finally CRISPR gene drives.

Yaaresse says

4.5, rounding up.

This is the most interesting book I've read this year. Zimmer provides a basic history of genetics, the theories and research, that sets the groundwork for discussing the biotech advances of recent years and all the accompanying ethical and legal challenges. He has a way of explaining complex scientific processes in plain English without being condescending and of adding interest with anecdotes without making it all about himself or succumbing to the melodramatic. While interested and excited about the science, he keeps a healthy skepticism and asks interesting questions.

Pam Mooney says

An amazing and well researched book. Takes us through the history and research of heredity from first works to today. It was so interesting to know where we started and how little we knew about heredity not that long ago. Some scientific researchers got it right and others drew wrong conclusions which may be forgivable for the time period but caused so much harm. There were certainly many ethical dilemmas that came in strong. Although it includes studies and scientific outcomes it is easy to read and understand the works and conclusions presented. This is an all inclusive study in who we are where we come from and how our genes and environment come together to make us who we are. Engaging - as it made me look at my own family and especially siblings to observe what traits we share with each other and our parents. This is the rare book for me that would get 100 out of 10 stars as where else would you get so much information in an easily read storytelling format in one book? I could open this book in any place randomly and follow the topic at hand immediately. A good read.

Mehrsa says

If you haven't been following or reading any news on genetics research, then this is an excellent primer, but if you do follow the science pages, there isn't much that is new in here. It's all interesting, but it's written by a reporter on science so none of it is firsthand research and the book isn't coherent enough to be memorable

Sarah says

A great popular science read for anyone interested in why we are the way we are.

Amy C. says

Carl Zimmer delivers a wonderful tribute to the perplexities and fascinating aspects of our DNA in this remarkably illuminating book.

Gary says

Heredity is the sum of all the previous environments and the current environment we were thrown into. Who we are as a species and as individuals is far more complicated than just our genes. Mendel's law is a suggestion more than a law. This book lays the ground work for each of those assertions and steps the listener through some of the history of our understanding of the subject and reviews some of the current new research that has been transpiring over the last five years or so.

Humans are special: we culturally pass on racism, bigotry, misogyny and superstition mimetically. The racist premises in the 'Bell Curve' or Nicholas Wade's last book are best ignored rather than refuted since they are groundless. The author doesn't mention either book or author but he does spend a lot of time refuting their absurdities inherent in their deterministic genetic fallacies.

Racist and their ilk are going to hate. They will always have their reasons for hating the other just for the sake of making themselves appear superior to themselves and their select cohorts. Science has moved past that trash type thinking and this book lays out the case with fairly familiar concepts and stories.

Most of what was in this book seemed to have been in other books that I've read recently, and the parts that weren't in the other books I've already read about in Science News or Scientific American. For those who are still in a 'nature v. nurture' deterministic paradigm and think biology through genes alone determines destiny this book will give them the background they need to move ahead. For all others, who realize that heredity is dependent on all of our previous environments (both as a species and as individuals and within the genome, the cells, the womb and the polis) and our current environment and experiences this book will be mostly superfluous since that is the main theme for this book.

Polo Lonergan says

Parts of this book are interesting. Parts are excruciatingly dry. It felt like it took me forever to slog through the ending.

Dlmrose says

3+

Nazia Naz says

The given title she has her mothers laugh attracted me I want to read it.

Leo says

Great book with numerous points of insight into modern genetics and heredity. The middle lost some momentum, but the author did a great job of finishing well and tying the whole storyline together by the end giving the read a feeling more akin to a novel rather than a textbook.

Charlene says

Fascinating science book with enough personal histories to keep it all interesting, although I admit those last few chapters on gene splicing & CRISPR got beyond me. I learned a lot . . . didn't realize that hereditary was so variable (we don't get exactly 50% of our genes from each parent, within a few generations we may no longer carry DNA from a particular ancestor, inheritance is a matter of luck . . .). I also had never heard of "mosaics" and "chimeras". Author is a science journalist so has a good writing style.

Ross says

This should be required reading for anyone who uses one of those 23 and Me or AncestryDNA gene sequencing companies. The author does a nice job explaining the limitations of such knowledge - in part by exploring non-Mendelian inheritance (such as epigenetics as well as cultural and ecological inheritance).
