

# The Scientists A History Of Science Told Through The Lives Of Its Greatest Inventors

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*The Knowledge Machine: How Irrationality Created Modern Science* - Michael Strevens 2020-10-13

"The Knowledge Machine is the most stunningly illuminating book of the last several decades regarding the all-important scientific enterprise." —Rebecca Newberger Goldstein, author of *Plato at the Googleplex* A paradigm-shifting work, *The Knowledge Machine* revolutionizes our understanding of the origins and structure of science. • Why is science so powerful? • Why did it take so long—two thousand years after the invention of philosophy and mathematics—for the human race to start using science to learn the secrets of the universe? In a groundbreaking work that blends science, philosophy, and history, leading philosopher of science Michael Strevens answers these challenging questions, showing how science came about only once thinkers stumbled upon the astonishing idea that scientific breakthroughs could be accomplished by breaking the rules of logical argument. Like such classic works as Karl Popper's *The Logic of Scientific Discovery* and Thomas Kuhn's *The Structure of Scientific Revolutions*, *The Knowledge Machine* grapples with the meaning and origins of science, using a plethora of vivid historical examples to demonstrate that scientists willfully ignore religion, theoretical beauty, and even philosophy to embrace a constricted code of argument whose very narrowness channels unprecedented energy into empirical observation and experimentation. Strevens calls this scientific code the iron rule of explanation, and reveals the way in which the rule, precisely because it is unreasonably close-minded, overcomes individual prejudices to lead humanity inexorably toward the secrets of nature. "With a mixture of philosophical and historical argument, and written in an engrossing style" (Alan Ryan), *The Knowledge Machine* provides captivating portraits of some of the greatest luminaries in science's history, including Isaac Newton, the chief architect of modern science and its foundational theories of motion and gravitation; William Whewell, perhaps the greatest philosopher-scientist of the early nineteenth century; and Murray Gell-Mann, discoverer of the quark. Today, Strevens argues, in the face of threats from a changing climate and global pandemics, the idiosyncratic but highly effective scientific knowledge machine must be protected from politicians, commercial interests, and even scientists themselves who seek to open it up, to make it less narrow and more rational—and thus to undermine its devotedly empirical search for truth. Rich with illuminating and often delightfully quirky illustrations, *The Knowledge Machine*, written in a winningly accessible style that belies the import of its revisionist and groundbreaking concepts, radically reframes much of what we thought we knew about the origins of the modern world.

**The Cat in the Box** - John Gribbin 2017-09-01

This book distills the history of science into 100 epic experiments that have fueled our understanding of Earth and the Universe beyond. Everything in the scientific world view is based on experiment, including observations of phenomena predicted by theories and hypotheses, such as the bending of light as it goes past the Sun. As the Nobel Prize-winning physicist Richard Feynman said, "If it disagrees with experiment, it is wrong." From the discovery of microscopic worlds and gravitational waves, to the weighing the Earth, to making electricity, this stunning book by renowned science writers John and Mary Gribbin tells the enlightening, fascinating, and somewhat oddball story of scientific innovation.

**Waters of the World** - Sarah Dry 2019-11-15

The compelling and adventurous stories of seven pioneering scientists who were at the forefront of what we now call climate science. From the glaciers of the Alps to the towering cumulonimbus clouds of the Caribbean and the unexpectedly chaotic flows of the North Atlantic, *Waters of the World* is a tour through 150 years of the history of a significant but underappreciated idea: that the Earth has a global climate system made up of interconnected parts, constantly changing on all

scales of both time and space. A prerequisite for the discovery of global warming and climate change, this idea was forged by scientists studying water in its myriad forms. This is their story. Linking the history of the planet with the lives of those who studied it, Sarah Dry follows the remarkable scientists who summited volcanic peaks to peer through an atmosphere's worth of water vapor, cored mile-thick ice sheets to uncover the Earth's ancient climate history, and flew inside storm clouds to understand how small changes in energy can produce both massive storms and the general circulation of the Earth's atmosphere. Each toiled on his or her own corner of the planetary puzzle. Gradually, their cumulative discoveries coalesced into a unified working theory of our planet's climate. We now call this field climate science, and in recent years it has provoked great passions, anxieties, and warnings. But no less than the object of its study, the science of water and climate is—and always has been—evolving. By revealing the complexity of this history, *Waters of the World* delivers a better understanding of our planet's climate at a time when we need it the most.

*The Invention of Science* - David Wootton 2015-12-08

"Captures the excitement of the scientific revolution and makes a point of celebrating the advances it ushered in." —Financial Times A companion to such acclaimed works as *The Age of Wonder*, *A Clockwork Universe*, and *Darwin's Ghosts*—a groundbreaking examination of the greatest event in history, the Scientific Revolution, and how it came to change the way we understand ourselves and our world. We live in a world transformed by scientific discovery. Yet today, science and its practitioners have come under political attack. In this fascinating history spanning continents and centuries, historian David Wootton offers a lively defense of science, revealing why the Scientific Revolution was truly the greatest event in our history. *The Invention of Science* goes back five hundred years in time to chronicle this crucial transformation, exploring the factors that led to its birth and the people who made it happen. Wootton argues that the Scientific Revolution was actually five separate yet concurrent events that developed independently, but came to intersect and create a new worldview. Here are the brilliant iconoclasts—Galileo, Copernicus, Brahe, Newton, and many more curious minds from across Europe—whose studies of the natural world challenged centuries of religious orthodoxy and ingrained superstition. From gunpowder technology, the discovery of the new world, movable type printing, perspective painting, and the telescope to the practice of conducting experiments, the laws of nature, and the concept of the fact, Wootton shows how these discoveries codified into a social construct and a system of knowledge. Ultimately, he makes clear the link between scientific discovery and the rise of industrialization—and the birth of the modern world we know.

*Science: A History* - John Gribbin 2009-08-27

In this book, John Gribbin tells the story of the people who made science and the turbulent times they lived in. As well as famous figures such as Copernicus, Darwin and Einstein, there are also the obscure, the eccentric, even the mad. This diverse cast includes, among others, Andreas Vesalius, landmark 16th-century anatomist and secret grave-robber; the flamboyant Galileo, accused of heresy for his ideas; the obsessive, competitive Newton, who wrote his rivals out of the history books; Gregor Mendel, the Moravian monk who founded modern genetics; and Louis Agassiz, so determined to prove the existence of ice ages that he marched his colleagues up a mountain to show them the evidence.

**Unsettled** - Steven E. Koonin 2021-04-27

"Unsettled is a remarkable book—probably the best book on climate change for the intelligent layperson—that achieves the feat of conveying complex information clearly and in depth." —Claremont Review of Books "Surging sea levels are inundating the coasts." "Hurricanes and tornadoes are becoming fiercer and more frequent." "Climate change will

be an economic disaster." You've heard all this presented as fact. But according to science, all of these statements are profoundly misleading. When it comes to climate change, the media, politicians, and other prominent voices have declared that "the science is settled." In reality, the long game of telephone from research to reports to the popular media is corrupted by misunderstanding and misinformation. Core questions—about the way the climate is responding to our influence, and what the impacts will be—remain largely unanswered. The climate is changing, but the why and how aren't as clear as you've probably been led to believe. Now, one of America's most distinguished scientists is clearing away the fog to explain what science really says (and doesn't say) about our changing climate. In *Unsettled: What Climate Science Tells Us, What It Doesn't, and Why It Matters*, Steven Koonin draws upon his decades of experience—including as a top science advisor to the Obama administration—to provide up-to-date insights and expert perspective free from political agendas. Fascinating, clear-headed, and full of surprises, this book gives readers the tools to both understand the climate issue and be savvier consumers of science media in general. Koonin takes readers behind the headlines to the more nuanced science itself, showing us where it comes from and guiding us through the implications of the evidence. He dispels popular myths and unveils little-known truths: despite a dramatic rise in greenhouse gas emissions, global temperatures actually decreased from 1940 to 1970. What's more, the models we use to predict the future aren't able to accurately describe the climate of the past, suggesting they are deeply flawed. Koonin also tackles society's response to a changing climate, using data-driven analysis to explain why many proposed "solutions" would be ineffective, and discussing how alternatives like adaptation and, if necessary, geoengineering will ensure humanity continues to prosper. *Unsettled* is a reality check buoyed by hope, offering the truth about climate science that you aren't getting elsewhere—what we know, what we don't, and what it all means for our future.

**Science: a History, 1543-2001** - John Gribbin 2002

This title begins with Galileo and takes the reader through to the scientific developments of string theory. It is an accessible narrative history, focusing on the way in which science has progressed by building on what went before, and also on the very close relationship between the progress of science and improved technology.

*The Meaning of It All* - Richard P. Feynman 2009-04-29

Many appreciate Richard P. Feynman's contributions to twentieth-century physics, but few realize how engaged he was with the world around him—how deeply and thoughtfully he considered the religious, political, and social issues of his day. Now, a wonderful book—based on a previously unpublished, three-part public lecture he gave at the University of Washington in 1963—shows us this other side of Feynman, as he expounds on the inherent conflict between science and religion, people's distrust of politicians, and our universal fascination with flying saucers, faith healing, and mental telepathy. Here we see Feynman in top form: nearly bursting into a Navajo war chant, then pressing for an overhaul of the English language (if you want to know why Johnny can't read, just look at the spelling of "friend"); and, finally, ruminating on the death of his first wife from tuberculosis. This is quintessential Feynman—reflective, amusing, and ever enlightening.

*Obsessive Genius* - Barbara Goldsmith 2005

Draws on diaries, letters, and family interviews to discuss the lesser-known achievements and scientific insights of the Nobel Prize-winning scientist and producer of radium, documenting how she was compromised by the prejudices of a male-dominated society in spite of her accomplishments. 30,000 first printing.

*Nonsense on Stilts* - Massimo Pigliucci 2018-10-05

Recent polls suggest that fewer than 40 percent of Americans believe in Darwin's theory of evolution, despite it being one of science's best-established findings. Parents still refuse to vaccinate their children for fear it causes autism, though this link has been consistently disproved. And about 40 percent of Americans believe that the threat of global warming is exaggerated, including many political leaders. In this era of fake news and alternative facts, there is more bunk than ever. But why do people believe in it? And what causes them to embrace such pseudoscientific beliefs and practices? In this fully revised second edition, noted skeptic Massimo Pigliucci sets out to separate the fact from the fantasy in an entertaining exploration of the nature of science, the borderlands of fringe science, and—borrowing a famous phrase from philosopher Jeremy Bentham—the nonsense on stilts. Presenting case studies on a number of controversial topics, Pigliucci cuts through the ambiguity surrounding science to look more closely at how science is

conducted, how it is disseminated, how it is interpreted, and what it means to our society. The result is in many ways a "taxonomy of bunk" that explores the intersection of science and culture at large. No one—neither the public intellectuals in the culture wars between defenders and detractors of science nor the believers of pseudoscience themselves—is spared Pigliucci's incisive analysis in this timely reminder of the need to maintain a line between expertise and assumption. Broad in scope and implication, *Nonsense on Stilts* is a captivating guide for the intelligent citizen who wishes to make up her own mind while navigating the perilous debates that will shape the future of our planet.

*A Troublesome Inheritance* - Nicholas Wade 2014-05-06

Drawing on startling new evidence from the mapping of the genome, an explosive new account of the genetic basis of race and its role in the human story. Fewer ideas have been more toxic or harmful than the idea of the biological reality of race, and with it the idea that humans of different races are biologically different from one another. For this understandable reason, the idea has been banished from polite academic conversation. Arguing that race is more than just a social construct can get a scholar run out of town, or at least off campus, on a rail. Human evolution, the consensus view insists, ended in prehistory.

Inconveniently, as Nicholas Wade argues in *A Troublesome Inheritance*, the consensus view cannot be right. And in fact, we know that populations have changed in the past few thousand years—to be lactose tolerant, for example, and to survive at high altitudes. Race is not a bright-line distinction; by definition it means that the more human populations are kept apart, the more they evolve their own distinct traits under the selective pressure known as Darwinian evolution. For many thousands of years, most human populations stayed where they were and grew distinct, not just in outward appearance but in deeper senses as well. Wade, the longtime journalist covering genetic advances for *The New York Times*, draws widely on the work of scientists who have made crucial breakthroughs in establishing the reality of recent human evolution. The most provocative claims in this book involve the genetic basis of human social habits. What we might call middle-class social traits—thrift, docility, nonviolence—have been slowly but surely inculcated genetically within agrarian societies, Wade argues. These "values" obviously had a strong cultural component, but Wade points to evidence that agrarian societies evolved away from hunter-gatherer societies in some crucial respects. Also controversial are his findings regarding the genetic basis of traits we associate with intelligence, such as literacy and numeracy, in certain ethnic populations, including the Chinese and Ashkenazi Jews. Wade believes deeply in the fundamental equality of all human peoples. He also believes that science is best served by pursuing the truth without fear, and if his mission to arrive at a coherent summa of what the new genetic science does and does not tell us about race and human history leads straight into a minefield, then so be it. This will not be the last word on the subject, but it will begin a powerful and overdue conversation.

**The Two Cultures** - C. P. Snow 2012-03-26

The importance of science and technology and future of education and research are just some of the subjects discussed here.

*The Scientist as Rebel* - Freeman Dyson 2014-08-26

From Galileo to today's amateur astronomers, scientists have been rebels, writes Freeman Dyson. Like artists and poets, they are free spirits who resist the restrictions their cultures impose on them. In their pursuit of nature's truths, they are guided as much by imagination as by reason, and their greatest theories have the uniqueness and beauty of great works of art. Dyson argues that the best way to understand science is by understanding those who practice it. He tells stories of scientists at work, ranging from Isaac Newton's absorption in physics, alchemy, theology, and politics, to Ernest Rutherford's discovery of the structure of the atom, to Albert Einstein's stubborn hostility to the idea of black holes. His descriptions of brilliant physicists like Edward Teller and Richard Feynman are enlivened by his own reminiscences of them. He looks with a skeptical eye at fashionable scientific fads and fantasies, and speculates on the future of climate prediction, genetic engineering, the colonization of space, and the possibility that paranormal phenomena may exist yet not be scientifically verifiable. Dyson also looks beyond particular scientific questions to reflect on broader philosophical issues, such as the limits of reductionism, the morality of strategic bombing and nuclear weapons, the preservation of the environment, and the relationship between science and religion. These essays, by a distinguished physicist who is also a prolific writer, offer informed insights into the history of science and fresh perspectives on contentious current debates about science, ethics, and faith.

## **The End Of Science** - John Horgan 2015-04-14

As staff writer for Scientific American, John Horgan has a window on contemporary science unsurpassed in all the world. Who else routinely interviews the likes of Lynn Margulis, Roger Penrose, Francis Crick, Richard Dawkins, Freeman Dyson, Murray Gell-Mann, Stephen Jay Gould, Stephen Hawking, Thomas Kuhn, Chris Langton, Karl Popper, Stephen Weinberg, and E.O. Wilson, with the freedom to probe their innermost thoughts? In *The End Of Science*, Horgan displays his genius for getting these larger-than-life figures to be simply human, and scientists, he writes, "are rarely so human . . . so at their mercy of their fears and desires, as when they are confronting the limits of knowledge." This is the secret fear that Horgan pursues throughout this remarkable book: Have the big questions all been answered? Has all the knowledge worth pursuing become known? Will there be a final "theory of everything" that signals the end? Is the age of great discoverers behind us? Is science today reduced to mere puzzle solving and adding details to existing theories? Horgan extracts surprisingly candid answers to these and other delicate questions as he discusses God, Star Trek, superstrings, quarks, plectics, consciousness, Neural Darwinism, Marx's view of progress, Kuhn's view of revolutions, cellular automata, robots, and the Omega Point, with Fred Hoyle, Noam Chomsky, John Wheeler, Clifford Geertz, and dozens of other eminent scholars. The resulting narrative will both infuriate and delight as it mindlessly Horgan's smart, contrarian argument for "endism" with a witty, thoughtful, even profound overview of the entire scientific enterprise. Scientists have always set themselves apart from other scholars in the belief that they do not construct the truth, they discover it. Their work is not interpretation but simple revelation of what exists in the empirical universe. But science itself keeps imposing limits on its own power. Special relativity prohibits the transmission of matter or information as speeds faster than that of light; quantum mechanics dictates uncertainty; and chaos theory confirms the impossibility of complete prediction. Meanwhile, the very idea of scientific rationality is under fire from Neo-Luddites, animal-rights activists, religious fundamentalists, and New Agers alike. As Horgan makes clear, perhaps the greatest threat to science may come from losing its special place in the hierarchy of disciplines, being reduced to something more akin to literary criticism as more and more theoreticians engage in the theory twiddling he calls "ironic science." Still, while Horgan offers his critique, grounded in the thinking of the world's leading researchers, he offers homage too. If science is ending, he maintains, it is only because it has done its work so well.

## Project Hail Mary - Andy Weir 2021-05-04

**#1 NEW YORK TIMES BESTSELLER** • From the author of *The Martian*, a lone astronaut must save the earth from disaster in this "propulsive" (Entertainment Weekly), cinematic thriller full of suspense, humor, and fascinating science—in development as a major motion picture starring Ryan Gosling. **HUGO AWARD FINALIST** • **ONE OF THE YEAR'S BEST BOOKS**: Bill Gates, GatesNotes, New York Public Library, Parade, Newsweek, Polygon, Shelf Awareness, She Reads, Kirkus Reviews, Library Journal • "An epic story of redemption, discovery and cool speculative sci-fi."—USA Today "If you loved *The Martian*, you'll go crazy for Weir's latest."—The Washington Post Ryland Grace is the sole survivor on a desperate, last-chance mission—and if he fails, humanity and the earth itself will perish. Except that right now, he doesn't know that. He can't even remember his own name, let alone the nature of his assignment or how to complete it. All he knows is that he's been asleep for a very, very long time. And he's just been awakened to find himself millions of miles from home, with nothing but two corpses for company. His crewmates dead, his memories fuzzily returning, Ryland realizes that an impossible task now confronts him. Hurling through space on this tiny ship, it's up to him to puzzle out an impossible scientific mystery—and conquer an extinction-level threat to our species. And with the clock ticking down and the nearest human being light-years away, he's got to do it all alone. Or does he? An irresistible interstellar adventure as only Andy Weir could deliver, *Project Hail Mary* is a tale of discovery, speculation, and survival to rival *The Martian*—while taking us to places it never dreamed of going.

## *The Scientists* - John Gribbin 2006

"John Gribbin tells the stories of the people who have made science, and of the times in which they lived and worked. He begins with Copernicus, during the Renaissance, when science replaced mysticism as a means of explaining the workings of the world, and he continues through the centuries, creating an unbroken genealogy of not only the greatest but also the more obscure names of Western science, a dot-to-dot line linking amateur to genius, and accidental discovery to brilliant deduction. By

focusing on the scientists themselves, Gribbin has written an anecdotal narrative enlivened with stories of personal drama, success and failure... *The Scientists* breathes new life into such venerable icons as Galileo, Isaac Newton, Albert Einstein and Linus Pauling, as well as lesser lights whose stories have been undeservedly neglected. Filled with pioneers, visionaries, eccentrics and madmen, this is the history of science as it has never been told before."--Publisher description.

## **100 Scientists Who Made History** - Andrea Mills 2018-02-06

From brainy biologists and clever chemists, to magnificent mathematicians and phenomenal physicists. Discover 100 remarkable scientists who shaped our world. Containing a universe of knowledge, this amazing kids' educational ebook tells the story of the extraordinary people who revolutionised our understanding of the world. A stunning way for children to meet science's most important people. Read through information-included mini-biographies of 100 brilliant scientists and innovators who have shaped our society and how we see the world around us. A perfect "everything you want to know in one place" about the history of science for children aged 8-12. Readers learn about discoveries that laid the groundwork for some of the most impressive innovations in history. Biologists, chemists, physicists, doctors, coders and astronauts are all featured including Hippocrates, Da Vinci, Alan Turing, Stephen Hawking, Neil deGrasse Tyson, and more. An attractive and engaging kids ebook that may inspire the next Einstein or Curie! Made for those always curious children and those who need encouragement to aspire to greatness and see the marvels of science. Put children inside the minds of scientific heroes through clever speech bubbles alongside portraits with first-person fun facts about their lives. It's a cool way to personalise these incredible people and engage children while giving them a solid base in science. Did you know that Marie Curie's notebooks are still radioactive? They're too dangerous to touch and even glow! And Louis Pasteur, who furthered the development of vaccinations and more, liked to paint in his spare time? Who knew! Learn About The Minds Who Shaped The World! Dive into the world of theories and experiments, reactions and equations, as we meet the figures who have helped us understand our universe and our place in it. Find out why Copernicus shook the world, what elements Marie Curie discovered, and how Franklin, Crick and Watson unlocked the secrets of our DNA. It's divided into Pioneers, Biologists, Chemists, Physicists, and Innovators, whose innovations have changed the world and continue to change it now. Discover amazing facts about the world and the people behind some of humanity's most impressive advancements. Some of the amazing trailblazers you'll meet: - Alan Turing - Marie Curie - Barbara McClintock - Leonardo da Vinci - And so many more! This fabulous title is one of five children's ebooks in the 100 In History series. Add 100 Women Who Made History, 100 People Who Made History, 100 Events That Made History, and 100 Inventions That Made History to your bookshelf and learn more about the significant people, events and inventions that shaped the world we live in today.

## Kid Scientists - David Stabler 2018-10-09

Funny and totally true childhood biographies and full-color illustrations tell tales from the challenging yet defining growing-up years of Albert Einstein, Jane Goodall, Marie Curie, and 12 other brilliant scientists. Every great scientist started out as a kid. Before their experiments, inventions, and discoveries that changed the world, the world's most celebrated scientists had regular-kid problems just like you. Stephen Hawking hated school, and preferred to spend his free time building model airplanes, inventing board games, and even building his own computer. Jane Goodall got in trouble for bringing worms and snails into her house. And Neil deGrasse Tyson had to start a dog-walking business to save up money to buy a telescope. *Kid Scientists* tells the stories of a diverse and inclusive group—also including Temple Grandin, Nikola Tesla, Ada Lovelace, Benjamin Franklin, Isaac Newton, Rosalind Franklin, Sally Ride, Rachel Carson, George Washington Carver, and Vera Rubin—through kid-friendly texts and full-color cartoon illustrations on nearly every page.

## **The Scientists** - John Gribbin 2019-07-30

A wonderfully readable account of scientific development over the past five hundred years, focusing on the lives and achievements of individual scientists, by the bestselling author of *In Search of Schrödinger's Cat* In this ambitious new book, John Gribbin tells the stories of the people who have made science, and of the times in which they lived and worked. He begins with Copernicus, during the Renaissance, when science replaced mysticism as a means of explaining the workings of the world, and he continues through the centuries, creating an unbroken genealogy of not only the greatest but also the more obscure names of Western science, a

dot-to-dot line linking amateur to genius, and accidental discovery to brilliant deduction. By focusing on the scientists themselves, Gribbin has written an anecdotal narrative enlivened with stories of personal drama, success and failure. A bestselling science writer with an international reputation, Gribbin is among the few authors who could even attempt a work of this magnitude. Praised as “a sequence of witty, information-packed tales” and “a terrific read” by The Times upon its recent British publication, *The Scientists* breathes new life into such venerable icons as Galileo, Isaac Newton, Albert Einstein and Linus Pauling, as well as lesser lights whose stories have been undeservedly neglected. Filled with pioneers, visionaries, eccentrics and madmen, this is the history of science as it has never been told before.

**The Birth of Time** - John Gribbin 1999-01-01

"Gribbin takes us through the history of cosmological discoveries, focusing in particular on the seventy years since the Big Bang model of the origin of the universe. He explains how conflicting views of the age of the universe and stars converged in the 1990s because scientists (including Gribbin) were able to use data from the Hubble Space Telescope that measured distances across the universe."--BOOK JACKET. Title Summary field provided by Blackwell North America, Inc. All Rights Reserved

*The Seeds of Life* - Edward Dolnick 2017-06-06

Why cracking the code of human conception took centuries of wild theories, misogynist blunders, and ludicrous mistakes Throughout most of human history, babies were surprises. People knew the basics: men and women had sex, and sometimes babies followed. But beyond that the origins of life were a colossal mystery. *The Seeds of Life* is the remarkable and rollicking story of how a series of blundering geniuses and brilliant amateurs struggled for two centuries to discover where, exactly, babies come from. Taking a page from investigative thrillers, acclaimed science writer Edward Dolnick looks to these early scientists as if they were detectives hot on the trail of a bedeviling and urgent mystery. These strange searchers included an Italian surgeon using shark teeth to prove that female reproductive organs were not 'failed' male genitalia, and a Catholic priest who designed ingenious miniature pants to prove that frogs required semen to fertilize their eggs. A witty and rousing history of science, *The Seeds of Life* presents our greatest scientists struggling-against their perceptions, their religious beliefs, and their deep-seated prejudices-to uncover how and where we come from.

*Creation* - Adam Rutherford 2013-04-04

'You will not find a better, more balanced or up-to-date take on either the origin of life or synthetic biology. Essential reading' Observer *Creation* by Adam Rutherford tells the entire spellbinding story of life in two gripping narratives. 'Prepare to be astounded. There are moments when this book is so gripping it reads like a thriller' Mail on Sunday *The Origin of Life* is a four-billion-year detective story that uses the latest science to explain what life is and where it first came from, dealing with life's biggest questions and arriving at a thrilling answer. 'A superbly written explanation' Brian Cox *The Future of Life* introduces an extraordinary technological revolution: 'synthetic biology', the ability to create entirely new life forms within the lab. Adam Rutherford explains how this remarkable innovation works and presents a powerful argument for its benefit to humankind. 'The reader's sense of awe at the well-nigh inconceivable nature of nature is suitably awakened. The extraordinary science and Rutherford's argument are worth every reader's scrutiny. Fascinating' Sunday Telegraph 'One of the most eloquent and genuinely thoughtful books on science over the past decade. You will not find a better, more balanced or up-to-date take on the origin of life or synthetic biology. Essential reading for anyone interested in the coming revolution, which could indeed rival the Industrial Revolution or the internet' Observer 'The perfect primer on the past and future of DNA' Guardian 'Sensible, erudite and thrilling' Prospect 'A witty, engaging and eye-opening explanation of the basic units of life, right back to our common ancestors and on to their incredible synthetic future. The mark of a really good science book, it shows that the questions we still have are just as exciting as the answers we already know' Dara O Briain 'This is a quite delightful two-books-in-one. Rutherford's lightness of touch in describing the dizzying complexity of life at the cellular level in *The Origin of Life* only serves to emphasise the sheer scale and ambition of the emerging field of synthetic biology' Jim Al Khalili 'A fascinating glimpse into our past and future. Rutherford's illuminating book is full of optimism about what we might be able to achieve' Sunday Times 'Fresh, original and excellent. An eye-opening look at how we are modifying and constructing life. Totally fascinating' PopularScience.co.uk 'In this book of two halves, Rutherford tells the epic history of life on earth, and eloquently argues

the case for embracing technology which allows us to become biological designers' Alice Roberts 'An engaging account of both the mystery of life's origin and its impending resolution as well as a fascinating glimpse of the impending birth of a new, synthetic biology' Matt Ridley, author of *Genome* 'I warmly recommend *Creation*. Rutherford's academic background in genetics gives him a firm grasp of the intricacies of biochemistry - and he translates these superbly into clear English' Financial Times Dr Adam Rutherford is a geneticist, writer and broadcaster. He presents BBC Radio 4's weekly programme *Inside Science* and his documentaries include the award-winning series *The Cell* (BBC4), *The Gene Code* (BBC4), *Horizon: 'Playing God'* (BBC2) as well as numerous other programmes for BBC Radio 4. This is his first book.

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*To Explain the World* - Steven Weinberg 2015-02-17

A masterful commentary on the history of science from the Greeks to modern times, by Nobel Prize-winning physicist Steven Weinberg—a thought-provoking and important book by one of the most distinguished scientists and intellectuals of our time. In this rich, irreverent, and compelling history, Nobel Prize-winning physicist Steven Weinberg takes us across centuries from ancient Miletus to medieval Baghdad and Oxford, from Plato's Academy and the Museum of Alexandria to the cathedral school of Chartres and the Royal Society of London. He shows that the scientists of ancient and medieval times not only did not understand what we understand about the world—they did not understand what there is to understand, or how to understand it. Yet over the centuries, through the struggle to solve such mysteries as the curious backward movement of the planets and the rise and fall of the tides, the modern discipline of science eventually emerged. Along the way, Weinberg examines historic clashes and collaborations between science and the competing spheres of religion, technology, poetry, mathematics, and philosophy. An illuminating exploration of the way we consider and analyze the world around us, *To Explain the World* is a sweeping, ambitious account of how difficult it was to discover the goals and methods of modern science, and the impact of this discovery on human knowledge and development.

*The Scientists* - John Gribbin 2004-08-10

A wonderfully readable account of scientific development over the past five hundred years, focusing on the lives and achievements of individual scientists, by the bestselling author of *In Search of Schrödinger's Cat* In this ambitious new book, John Gribbin tells the stories of the people who have made science, and of the times in which they lived and worked. He begins with Copernicus, during the Renaissance, when science replaced mysticism as a means of explaining the workings of the world, and he continues through the centuries, creating an unbroken genealogy of not only the greatest but also the more obscure names of Western science, a dot-to-dot line linking amateur to genius, and accidental discovery to brilliant deduction. By focusing on the scientists themselves, Gribbin has written an anecdotal narrative enlivened with stories of personal drama, success and failure. A bestselling science writer with an international reputation, Gribbin is among the few authors who could even attempt a work of this magnitude. Praised as “a sequence of witty, information-packed tales” and “a terrific read” by The Times upon its recent British publication, *The Scientists* breathes new life into such venerable icons as Galileo, Isaac Newton, Albert Einstein and Linus Pauling, as well as lesser lights whose stories have been undeservedly neglected. Filled with pioneers, visionaries, eccentrics and madmen, this is the history of science as it has never been told before.

**The History of Scientific Discovery** - Arthur Jack Meadows 1987

*The Genesis of Science* - James Hannam 2011-03-22

The Not-So-Dark Dark Ages What they forgot to teach you in school: People in the Middle Ages did not think the world was flat The Inquisition never executed anyone because of their scientific ideologies It was medieval scientific discoveries, including various methods, that made possible Western civilization's "Scientific Revolution" As a physicist and historian of science James Hannam debunks myths of the Middle Ages in his brilliant book *The Genesis of Science: How the Christian Middle Ages Launched the Scientific Revolution*. Without the medieval scholars, there would be no modern science. Discover the Dark Ages and their inventions, research methods, and what conclusions they actually made about the shape of the world.

**The Idea of History** - R. G. Collingwood 2020-07-14

Robin George Collingwood, FBA (1889 - 1943) was an English historian,

philosopher, and archaeologist most famous his philosophical works. Along with "The Principles of Art" (1938), Collingwood's "The Idea of History" was his best-known work, originally collated from numerous sources following his death by a student of his, T. M. Knox. It became a major inspiration for philosophy of history in the western world and is extensively cited to his day. This fascinating volume on history and its relationship to philosophy will appeal to students and collectors of vintage philosophical works alike. Contents include: "The Philosophy of History", "History's Nature", "Object", "Method", "Greco-Roman Histography", "The Influence of Christianity", "The Threshold of Scientific History", "Scientific History", "England", "Germany", "France", "Italy", etc. Many vintage books such as this are increasingly scarce and expensive. It is with this in mind that we are republishing this volume today in an affordable, high-quality, modern edition complete with a specially-commissioned new biography of the author.

*Scientists Who Believe* - Eric C. Barrett 1984-04-08

Here are the stories of scientists, both men and women, who have achieved career fulfillment in the sciences, yet found further fulfillment through faith in Jesus Christ.

**In Search of Schrodinger's Cat** - John Gribbin 1984-08-01

Quantum theory is so shocking that Einstein could not bring himself to accept it. It is so important that it provides the fundamental underpinning of all modern sciences. Without it, we'd have no nuclear power or nuclear weapons, no TV, no computers, no science of molecular biology, no understanding of DNA, no genetic engineering. In Search of Schrodinger's Cat tells the complete story of quantum mechanics, a truth stranger than any fiction. John Gribbin takes us step by step into an ever more bizarre and fascinating place, requiring only that we approach it with an open mind. He introduces the scientists who developed quantum theory. He investigates the atom, radiation, time travel, the birth of the universe, superconductors and life itself. And in a world full of its own delights, mysteries and surprises, he searches for Schrodinger's Cat - a search for quantum reality - as he brings every reader to a clear understanding of the most important area of scientific study today - quantum physics. In Search of Schrodinger's Cat is a fascinating and delightful introduction to the strange world of the quantum - an essential element in understanding today's world.

**Broader Impacts of Science on Society** - Bruce J. MacFadden 2019-10-03

Invaluable guidance on how scientists can communicate the societal benefits of their work to the public and funding agencies. This will help scientists submit proposals to the US National Science Foundation and other funding agencies with a 'Broader Impacts' section, as well as helping to develop successful wider outreach activities.

Science under Fire - Andrew Jewett 2020-12-08

Americans have long been suspicious of experts and elites. This new history explains why so many have believed that science has the power to corrupt American culture. Americans today are often skeptical of scientific authority. Many conservatives dismiss climate change and Darwinism as liberal fictions, arguing that "tenured radicals" have coopted the sciences and other disciplines. Some progressives, especially in the universities, worry that science's celebration of objectivity and neutrality masks its attachment to Eurocentric and patriarchal values. As we grapple with the implications of climate change and revolutions in fields from biotechnology to robotics to computing, it is crucial to understand how scientific authority functions—and where it has run up against political and cultural barriers. Science under Fire reconstructs a century of battles over the cultural implications of science in the United States. Andrew Jewett reveals a persistent current of criticism which maintains that scientists have injected faulty social philosophies into the nation's bloodstream under the cover of neutrality. This charge of corruption has taken many forms and appeared among critics with a wide range of social, political, and theological views, but common to all is the argument that an ideologically compromised science has produced an array of social ills. Jewett shows that this suspicion of science has been a major force in American politics and culture by tracking its development, varied expressions, and potent consequences since the 1920s. Looking at today's battles over science, Jewett argues that citizens and leaders must steer a course between, on the one hand, the naïve image of science as a pristine, value-neutral form of knowledge, and, on the other, the assumption that scientists' claims are merely ideologies masquerading as truths.

**Why Trust Science?** - Naomi Oreskes 2021-04-06

Why the social character of scientific knowledge makes it trustworthy Are doctors right when they tell us vaccines are safe? Should we take

climate experts at their word when they warn us about the perils of global warming? Why should we trust science when so many of our political leaders don't? Naomi Oreskes offers a bold and compelling defense of science, revealing why the social character of scientific knowledge is its greatest strength—and the greatest reason we can trust it. Tracing the history and philosophy of science from the late nineteenth century to today, this timely and provocative book features a new preface by Oreskes and critical responses by climate experts Ottmar Edenhofer and Martin Kowarsch, political scientist Jon Krosnick, philosopher of science Marc Lange, and science historian Susan Lindee, as well as a foreword by political theorist Stephen Macedo.

Science on a Mission - Naomi Oreskes 2021-04-19

A vivid portrait of how Naval oversight shaped American oceanography, revealing what difference it makes who pays for science. What difference does it make who pays for science? Some might say none. If scientists seek to discover fundamental truths about the world, and they do so in an objective manner using well-established methods, then how could it matter who's footing the bill? History, however, suggests otherwise. In science, as elsewhere, money is power. Tracing the recent history of oceanography, Naomi Oreskes discloses dramatic changes in American ocean science since the Cold War, uncovering how and why it changed. Much of it has to do with who pays. After World War II, the US military turned to a new, uncharted theater of warfare: the deep sea. The earth sciences—particularly physical oceanography and marine geophysics—became essential to the US Navy, which poured unprecedented money and logistical support into their study. Science on a Mission brings to light how this influx of military funding was both enabling and constricting: it resulted in the creation of important domains of knowledge but also significant, lasting, and consequential domains of ignorance. As Oreskes delves into the role of patronage in the history of science, what emerges is a vivid portrait of how naval oversight transformed what we know about the sea. It is a detailed, sweeping history that illuminates the ways funding shapes the subject, scope, and tenor of scientific work, and it raises profound questions about the purpose and character of American science. What difference does it make who pays? The short answer is: a lot.

*Icons of Evolution* - Jonathan Wells 2002-01-01

Everything you were taught about evolution is wrong.

The Greatest Science Stories Never Told - Rick Beyer 2009-11-03

100 tales of invention and discovery to astonish, bewilder, & stupefy Meet the angry undertaker who gave us the push-button phone. Discover how modesty led to the invention of the stethoscope. Find out why Albert Einstein patented a refrigerator. Learn how a train full of trumpeters made science history. Did you know about: The frustrated fashion designer who created the space suit? The gun-toting newspaperman who invented the parking meter? The midnight dreams that led to a Nobel Prize? They're so good, you can't read just one!

**Timelines of Science** - DK 2013-10-01

From the wheel to the worldwide web, our planet has been transformed by science. Now you can travel through time to experience centuries of invention and innovation on this spectacular visual voyage of discovery. Starting in ancient times and ending up in the modern world, you'll explore scientific history showcased in stunning images and captivating text. An easy-to-follow illustrated timeline runs throughout the ebook, keeping you informed of big breakthroughs and key developments. Get to grips with revolutionary ideas like measuring time or check out amazing artifacts like flying machines. Great geniuses, including Marie Curie, Albert Einstein, and Charles Darwin are introduced alongside their most important ideas and inventions, all shown in glorious detail. Hundreds of pages of history are covered in Timelines of Science, with global coverage of scientific advances. Whether you're joining in with eureka moments, inspecting engines, or learning about evolution, all aspects of science are covered from the past, present, and future.

Stalin and the Scientists - Simon Ings 2017-02-21

Scientists throughout history, from Galileo to today's experts on climate change, have often had to contend with politics in their pursuit of knowledge. But in the Soviet Union, where the ruling elites embraced, patronized, and even fetishized science like never before, scientists lived their lives on a knife edge. The Soviet Union had the best-funded scientific establishment in history. Scientists were elevated as popular heroes and lavished with awards and privileges. But if their ideas or their field of study lost favor with the elites, they could be exiled, imprisoned, or murdered. And yet they persisted, making major contributions to 20th century science. Stalin and the Scientists tells the story of the many gifted scientists who worked in Russia from the years leading up to the

Revolution through the death of the "Great Scientist" himself, Joseph Stalin. It weaves together the stories of scientists, politicians, and ideologues into an intimate and sometimes horrifying portrait of a state determined to remake the world. They often wreaked great harm. Stalin was himself an amateur botanist, and by falling under the sway of dangerous charlatans like Trofim Lysenko (who denied the existence of genes), and by relying on antiquated ideas of biology, he not only destroyed the lives of hundreds of brilliant scientists, he caused the death of millions through famine. But from atomic physics to management theory, and from radiation biology to neuroscience and psychology, these Soviet experts also made breakthroughs that forever changed agriculture, education, and medicine. A masterful book that deepens our understanding of Russian history, Stalin and the Scientists is a great achievement of research and storytelling, and a gripping look at what happens when science falls prey to politics.

*Existential Physics* - Sabine Hossenfelder 2022-08-09

A NEW YORK TIMES BESTSELLER "An informed and entertaining guide to what science can and cannot tell us." —The Wall Street Journal

"Stimulating . . . encourage[s] readers to push past well-trod assumptions [...] and have fun doing so." —Science Magazine From renowned physicist and creator of the YouTube series "Science without the Gobbledygook," a book that takes a no-nonsense approach to life's biggest questions, and wrestles with what physics really says about the human condition Not only can we not currently explain the origin of the universe, it is questionable we will ever be able to explain it. The notion that there are universes within particles, or that particles are conscious, is ascientific, as is the hypothesis that our universe is a computer simulation. On the other hand, the idea that the universe itself is conscious is difficult to rule out entirely. According to Sabine Hossenfelder, it is not a coincidence that quantum entanglement and vacuum energy have become the go-to explanations of alternative healers, or that people believe their deceased grandmother is still alive because of quantum mechanics. Science and religion have the same roots, and they still tackle some of the same questions: Where do we come from? Where do we go to? How much can we know? The area of science that is closest to answering these questions is physics. Over the last century, physicists have learned a lot about which spiritual ideas are still compatible with the laws of nature. Not always, though, have they stayed on the scientific side of the debate. In this lively, thought-provoking book, Hossenfelder takes on the biggest questions in physics: Does the past still exist? Do particles think? Was the universe made for us? Has physics ruled out free will? Will we ever have a theory of everything? She lays out how far physicists are on the way to answering these questions, where the current limits are, and what questions might well remain unanswerable forever. Her book offers a no-nonsense yet entertaining take on some of the toughest riddles in existence, and will give the reader a solid grasp on what we know—and what we don't know.

*Survival of the Friendliest* - Brian Hare 2020

"For most of the approximately 200,000 years that our species has existed, we shared the planet with at least four other types of humans. They were smart, they were strong, and they were inventive. Neanderthals even had the capacity for spoken language. But, one by one, our hominid relatives went extinct. Why did we thrive? In

delightfully conversational prose and based on years of his own original research, Brian Hare, professor in the department of evolutionary anthropology and the Center for Cognitive Neuroscience at Duke University, and his wife Vanessa Woods, a research scientist and award-winning journalist, offer a powerful, elegant new theory called "self-domestication" which suggests that we have succeeded not because we were the smartest or strongest but because we are the friendliest. This explanation flies in the face of conventional wisdom. Since Charles Darwin wrote about "evolutionary fitness," scientists have confused fitness with strength, tactical brilliance, and aggression. But what helped us innovate where other primates did not is our knack for coordinating with and listening to others. We can find common cause and identity with both neighbors and strangers if we see them as "one of us." This ability makes us geniuses at cooperation and innovation and is responsible for all the glories of culture and technology in human history. But this gift for friendliness comes at cost. If we perceive that someone is not "one of us," we are capable of unplugging them from our mental network. Where there would have been empathy and compassion, there is nothing, making us both the most tolerant and the most merciless species on the planet. To counteract the rise of tribalism in all aspects of modern life, Hare and Woods argue, we need to expand our empathy and friendliness to include people who aren't obviously like ourselves. need to expand our empathy and friendliness to include people who aren't obviously like ourselves. Brian Hare's groundbreaking research was developed in close collaboration with Richard Wrangham and Michael Tomasello, giants in the field of cognitive evolution. Survival of the Friendliest explains both our evolutionary success and our potential for cruelty in one stroke and sheds new light onto everything from genocide and structural inequality to art and innovation"--

*The Origins of Modern Science* - Ofer Gal 2021-02-04

"This book attempts to introduce to its readers major chapters in the history of science. It tries to present science as a human endeavor - a great achievement, and all the more human for it. In place of the story of progress and its obstacles or a parade of truths revealed, this book stresses the contingent and historical nature of scientific knowledge. Knowledge, science included, is always developed by real people, within communities, answering immediate needs and challenges shaped by place, culture, and historical events with resources drawn from their present and past. Chronologically, this book spans from Pythagorean mathematics to Newton's Principle. The book starts in the high Middle Ages and proceeds to introduce the readers to the historian's way of inquiry. At the center of this introduction is the Gothic Cathedral - a grand achievement of human knowledge, rooted in a complex cultural context, and a powerful metaphor for science. The book alternates thematic chapters with chapters concentrating on an era. Yet it attempts to integrate discussion of all different aspects of the making of knowledge: social and cultural settings, challenges and opportunities; intellectual motivations and worries; epistemological assumptions and technical ideas; instruments and procedures. The cathedral metaphor is evoked intermittently throughout, to tie the many themes discussed to the main lesson: that the complex set of beliefs, practices, and institutions we call science is a particular, contingent human phenomenon"--