

### The End Of Science Facing Limits Knowledge In Twilight Scientific Age John Horgan

*A respected journalist explores the fields of science that try to explain the mysteries of the human mind, arguing that science has done little to plumb the depths of our minds and cannot ever rationally explain all of human behavior. 50,000 first printing. 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? 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 detains to existing theories? Horgan extracts surprisingly candid answers to there 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 mindless 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. 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. "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.*

*Why There Is Something Rather than Nothing*

*The Science and Ethics of Human Extinction*

*The Art of Failure*

*The Seeds of New Earth (the Silent Earth, Book 2)*

*Plan S for Shock*

*Exposing Fraud, Bias, Negligence and Hype in Science*

*Radical Hope*

**A brilliant and courageous doctor reveals, in gripping accounts of true cases, the power and limits of modern medicine. Sometimes in medicine the only way to know what is truly going on in a patient is to operate, to look inside with one's own eyes. This book is exploratory surgery on medicine itself, laying bare a science not in its idealized form but as it actually is -- complicated, perplexing, and profoundly human. Atul Gawande offers an unflinching view from the scalpel's edge, where science is ambiguous, information is limited, the stakes are high, yet decisions must be made. In dramatic and revealing stories of patients and doctors, he explores how deadly mistakes occur and why good surgeons go bad. He also shows us what happens when medicine comes up against the inexplicable: an architect with incapacitating back pain for which there is no physical cause; a young woman with nausea that won't go away; a television newscaster whose blushing is so severe that she cannot do her job. Gawande offers a richly detailed portrait of the people and the science, even as he tackles the paradoxes and imperfections inherent in caring for human lives. At once tough-minded and humane, Complications is a new kind of medical writing, nuanced and lucid, unafraid to confront the conflicts and uncertainties that lie at the heart of modern medicine, yet always alive to the possibilities of wisdom in this extraordinary endeavor. Complications is a 2002 National Book Award Finalist for Nonfiction.**

**A Best Book of the Year by NPR and Christian Science Monitor Called “wholly engrossing” by New York Times bestselling author Kathleen Grissom, this “fully immersive” (Lisa Wingate, #1 bestselling author of Before We Were Yours) story follows an enslaved woman forced to barter love and freedom while living in the most infamous slave jail in Virginia. Born on a plantation in Charles City, Virginia, Pheby Delores Brown has lived a relatively sheltered life. Shielded by her mother's position as the estate's medicine woman and cherished by the Master's sister, she is set apart from the others on the plantation, belonging to neither world. She'd been promised freedom on her eighteenth birthday, but instead of the idyllic life she imagined with her true love, Essex Henry, Pheby is forced to leave the only home she has ever known. She unexpectedly finds herself thrust into the bowels of slavery at the infamous Devil's Half Acre, a jail in Richmond, Virginia, where the enslaved are broken, tortured, and sold every day. There, Pheby is exposed not just to her Jailer's cruelty but also to his contradictions. To survive, Pheby will have to outwit him, and she soon faces the ultimate sacrifice. Draws on interviews with many of the worlds leading scientists to discuss the possibility that humankind has reached the limits of scientific knowledge**

**The actor and founder of the Alan Alda Center for Communicating Science traces his personal quest to understand how to relate and communicate better, from practicing empathy and using improv games to storytelling and developing better intuitive skills.**

**A Universe from Nothing**

**Unsettled**

**The Skeptic's Guide to Sports Science**

**How the New Science of Resilience Is Changing How We Think About PTSD**

**White Fragility**

**The Astounding Interconnectedness of the Universe**

**An Essay on the Pain of Playing Video Games**

Think you need a degree in science to contribute to important scientific discoveries? Think again. All around the world, in fields ranging from astronomy to zoology, millions of everyday people are choosing to participate in the scientific process. Working in cooperation with scientists in pursuit of information, innovation, and discovery, these volunteers are following protocols, collecting and reviewing data, and sharing their observations. They are our neighbors, our in-laws, and people in the office down the hall. Their story, along with the story of the social good that can result from citizen science, has largely been untold, until now. Citizen scientists are challenging old notions about who can conduct research, where knowledge can be acquired, and even how solutions to some of our biggest societal problems might emerge. In telling their story, Cooper will inspire readers to rethink their own assumptions about the role that individuals can play in gaining scientific understanding and putting that understanding to use as stewards of our world. Citizen Science will be a rallying call-to-arms, and will also function as an authoritative resource for those inspired by the featured stories and message.

This is the story of open access publishing - why it matters now, and for the future. In a world where information has never been so accessible, and answers are available at the touch of a fingertip, we are hungrier for the facts than ever before - something the Covid-19 crisis has brought to light. And yet, paywalls put in place by multi-billion dollar publishing houses are still preventing millions from accessing quality, scientific knowledge - and public trust in science is under threat. On 4 September 2018, a bold new initiative known as 'Plan S' was unveiled, kickstarting a world-wide shift in attitudes towards open access research. For the first time, funding agencies across continents joined forces to impose new rules on the publication of research, with the aim of one day making all research free and available to all. What followed was a debate of global proportions, as stakeholders asked: Who has the right to access publicly-funded research? Will it ever be possible to enforce change on a multi-billion dollar market dominated by five major players? Here, the scheme's founder, Robert-Jan Smits, makes a compelling case for Open Access, and reveals for the first time how he set about turning his controversial plan into reality - as well as some of the challenges faced along the way. In telling his story, Smits argues that the Covid-19 crisis has exposed the traditional academic publishing system as unsustainable.--

Alarmists argue that the United States urgently needs more and better trained scientists to compete with the rest of the world. Their critics counter that, far from facing a shortage, we are producing a glut of young scientists with poor employment prospects. Both camps have issued reports in recent years that predict the looming decline of American science. Drawing on their extensive analysis of national datasets, Yu Xie and Alexandra Killewald have welcome news to share: American science is in good health. Is American Science in Decline? does reveal areas of concern, namely scientists' low earnings, the increasing competition they face from Asia, and the declining number of doctorates who secure academic positions. But the authors argue that the values inherent in American culture make the country highly conducive to science for the foreseeable future. They do not see globalization as a threat but rather a potential benefit, since it promotes efficiency in science through knowledge-sharing. In an age when other countries are catching up, American science will inevitably become less dominant, even though it is not in decline relative to its own past. As technology continues to change the American economy, better-educated workers with a range of skills will be in demand. So as a matter of policy, the authors urge that science education not be detached from general education.

The global health and fitness industry is worth an estimated \$4 trillion. We spend \$90 billion each year on health club memberships and \$100 billion each year on dietary supplements. In such an industrial climate, lax regulations on the products we are sold (supplements, fad-diets, training programs, gadgets, and garments) result in marketing campaigns underpinned by strong claims and weak evidence. Moreover, our critical faculties are ill-suited to a culture characterized by fake news, social media, misinformation, and bad science. We have become walking, talking prey to 21st-Century Snake Oil salesmen. In The Skeptic's Guide to Sports Science, Nicholas B. Tiller confronts the claims behind the products and the evidence behind the claims. The author discusses what might be wrong with the sales pitch, the glossy magazine advert, and the celebrity endorsements that our heuristically-wired brains find so innately attractive. Tiller also explores the appeal of the one quick fix, the fallacious arguments that are a mainstay of product advertising, and the critical steps we must take in retraining our minds to navigate the pitfalls of the modern consumerist culture. This informative and accessible volume pulls no punches in scrutinizing the plausibility of, and evidence for, the most popular sports products and practices on the market. Readers are encouraged to confront their conceptualizations of the industry and, by the book's end, they will have acquired the skills necessary to independently judge the effectiveness of sports-related products. This treatise on the commercialization of science in sport and exercise is a must-read for exercisers, athletes, students, and practitioners who hope to retain their intellectual integrity in a lucrative health and fitness industry that is spiraling out-of-control.

Science, Subjectivity & Who We Really Are

When We Cease to Understand the World

The End Of Science

Challenges to Scientific Authority in Modern America

Houston, We Have a Narrative

Thoughts on Life and Death at the Brink of the Millennium

Billions & Billions

**Each of these essays struggles in one way or another with the necessity of facing up to the discovery that the laws of nature are impersonal, with no hint of a special status for human beings. Defending the spirit of science against its cultural adversaries, these essays express a viewpoint that is reductionist, realist, and devoutly secular. Together, they afford the general reader the unique pleasure of experiencing the superb sense, understanding, and knowledge of one of the most interesting and forceful scientific minds of our era.ease fill in marketing copy**

**How the internet and powerful online tools are democratizing and accelerating scientific discovery Reinventing Discovery argues that we are living at the dawn of the most dramatic change in science in more than three hundred years. This change is being driven by powerful cognitive tools, enabled by the internet, which are greatly accelerating scientific discovery. There are many books about how the internet is changing business, the workplace, or government. But this is the first book about something much more fundamental: how the internet is transforming our collective intelligence and our understanding of the world. From the collaborative mathematicians of the Polymath Project to the amateur astronomers of Galaxy Zoo, Reinventing Discovery tells the exciting story of the unprecedented new era in networked science. It will interest anyone who wants to learn about how the online world is revolutionizing scientific discovery—and why the revolution is just beginning.**

**One of The New York Times Book Review’s “10 Best Books of 2021” Shortlisted for the 2021 International Booker Prize A fictional examination of the lives of real-life scientists and thinkers whose discoveries resulted in moral consequences beyond their imagining. When We Cease to Understand the World is a book about the complicated links between scientific and mathematical discovery, madness, and destruction. Fritz Haber, Alexander Grothendieck, Werner Heisenberg, Erwin Schrödinger—these are some of luminaries into whose troubled lives Benjamin Labatut thrusts the reader, showing us how they grappled with the most profound questions of existence. They have strokes of unparalleled genius, alienate friends and lovers, descend into isolation and insanity. Some of their discoveries reshape human life for the better; others pave the way to chaos and unimaginable suffering. The lines are never clear. At a breakneck pace and with a wealth of disturbing detail, Labatut uses the imaginative resources of fiction to tell the stories of the scientists and mathematicians who expanded our notions of the possible.**

**The author of The End of Science offers an intriguing investigation into the latest research into the mechanics and meaning of mystical experience, looking at such fields as chemistry, physics, theology, and psychology to narrow the division between reason and enlightenment.**

**The End of Trauma**

**A Novel**

**A Surgeon's Notes on an Imperfect Science**

**What Climate Science Tells Us, What It Doesn't, and Why It Matters**

**How Ordinary People are Changing the Face of Discovery**

**Dispatches from the Border Between Science and Spirituality**

**The New Era of Networked Science**

**NEW YORK TIMES BESTSELLER • In the final book of his astonishing career, Carl Sagan brilliantly examines the burning questions of our lives, our world, and the universe around us. These luminous, entertaining essays travel both the vastness of the cosmos and the intimacy of the human mind, posing such fascinating questions as how did the universe originate and how will it end, and how can we meld science and compassion to meet the challenges of the coming century? Here, too, is a rare, private glimpse of Sagan’s thoughts about love, death, and God as he struggled with fatal disease. Ever forward-looking and vibrant with the sparkle of his unquenchable curiosity, Billions & Billions is a testament to one of the great scientific minds of our day. Praise for Billions & Billions “[Sagan’s] writing brims with optimism, clarity and compassion.”—Ft. Lauderdale Sun-Sentinel “Sagan used the spotlight of his fame to illuminate the abyss into which stupidity, greed, and the lust for power may yet dump us. All of those interests and causes are handsomely represented in Billions & Billions.”—The Washington Post Book World “Astronomer Carl Sagan didn’t live to see the millennium, but he probably has done more than any other popular scientist to prepare us for its arrival.”—Atlanta Journal & Constitution “Billions & Billions can be interpreted as the Silent Spring for the current generation. . . . Human history includes a number of leaders with great minds who gave us theories about our universe and origins that ran contrary to religious dogma. Galileo determined that the Earth revolved around the Sun, not the other way around. Darwin challenged Creationism with his Evolution of Species. And now, Sagan has given the world its latest**

*challenge: Billions & Billions.”--San Antonio Express-News “[Sagan’s] inspiration and boundless curiosity live on in the gift of his work.”--Seattle Times & Post-Intelligencer “Couldn’t stay awake in your high school science classes? This book can help fill in the holes. Acclaimed scientist Carl Sagan combines his logic and knowledge with wit and humor to make a potentially dry subject enjoyable to read.”--The Dallas Morning News*  
*In The End of Science, John Horgan makes the case that the era of truly profound scientific revelations about the universe and our place in it is over. Interviewing scientific luminaries such as Stephen Hawking, Francis Crick, and Richard Dawkins, he demonstrates that all the big questions that can be answered have been answered, as science bumps up against fundamental limits. The world cannot give us a “theory of everything,” and modern endeavors such as string theory are “ironic” and “theological” in nature, not scientific, because they are impossible to confirm. Horgan's argument was controversial in 1996, and it remains so today, still firing up debates in labs and on the internet, not least because—as Horgan details in a lengthy new introduction—ironic science is more prevalent than ever. 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.*

*Are we in imminent danger of extinction? Yes, we probably are, argues John Leslie in his chilling account of the dangers facing the human race as we approach the second millenium. The End of the World is a sobering assessment of the many disasters that scientists have predicted and speculated on as leading to apocalypse. In the first comprehensive survey, potential catastrophes - ranging from deadly diseases to high-energy physics experiments - are explored to help us understand the risks. One of the greatest threats facing humankind, however, is the insurmountable fact that we are a relatively young species, a risk which is at the heart of the 'Doomsday Argument'. This argument, if correct, makes the dangers we face more serious than we could have ever imagined. This more than anything makes the arrogance and ignorance of politicians, and indeed philosophers, so disturbing as they continue to ignore the manifest dangers facing future generations.*

*This fast-paced action novel is set in a future where the world has been almost destroyed. Like the award-winning novel Freak the Mighty, this is Philbrick at his very best.It's the story of an epileptic teenager nicknamed Spaz, who begins the heroic fight to bring human intelligence back to the planet. In a world where most people are plugged into brain-drain entertainment systems, Spaz is the rare human being who can see life as it really is. When he meets an old man called Ryter, he begins to learn about Earth and its past. With Ryter as his companion, Spaz sets off an unlikely quest to save his dying sister -- and in the process, perhaps the world.*

*Science, Shock, Solution, Speed*

*Science, Risk and Prophecy*

*Is American Science in Decline?*

*My Adventures in the Art and Science of Relating and Communicating*

*Ethics in the Face of Cultural Devastation*

*Strengthening Forensic Science in the United States*

*Complications*

The Earth is in ruins. Cities and nations destroyed. Mankind is extinct. Brant and Arsha are synthetics, machines made in the image of people. They dream of bringing humans back into the world and have the technology to succeed, but the obstacles in their way are mounting. Not only are their own conflicting ideals creating a rift between them, but now the sinister Marauders are closing in as they seek revenge on Brant. Out in the wasteland, strange lights and mysterious objects in the sky herald the arrival of new factions that seek to control the region. Even in the once quiet streets of their own city, malevolent forces are beginning to unfurl that threaten the sanctity of everything they hold dear, jeopardising the future that is within their grasp. The Silent Earth Series Book 1 - After the Winter: amazon.com/dp/B00P02FBPM

2019 Best-Of Lists: 10 Best Science Books of the Year (Smithsonian Magazine) · Best Science Books of the Year (NPR's Science Friday) · Best Science and Technology Books from 2019” (Library Journal) An astute and timely examination of the re-emergence of scientific research into racial differences. Superior tells the disturbing story of the persistent thread of belief in biological racial differences in the world of science. After the horrors of the Nazi regime in World War II, the mainstream scientific world turned its back on eugenics and the study of racial difference.

But a worldwide network of intellectual racists and segregationists quietly founded journals and funded research, providing the kind of shoddy studies that were ultimately cited in Richard Herrnstein and Charles Murray’s 1994 title The Bell Curve, which purported to show differences in intelligence among races. If the vast majority of scientists and scholars disavowed these ideas and considered race a social construct, it was an idea that still managed to somehow survive in the way scientists thought about human variation and genetics. Dissecting the statements and work of contemporary scientists studying human biodiversity, most of whom claim to be just following the data, Angela Saini shows us how, again and again, even mainstream scientists cling to the idea that race is biologically real. As our understanding of complex traits like intelligence, and the effects of environmental and cultural influences on human beings, from the molecular level on up, grows, the hope of finding simple genetic differences between “races”—to explain differing rates of disease, to explain poverty or test scores, or to justify cultural assumptions—stubbornly persists. At a time when racialized nationalisms are a resurgent threat throughout the world, Superior is a rigorous, much-needed examination of the insidious and destructive nature of race science—and a powerful reminder that, biologically, we are all far more alike than different.

This open access book chronicles the rise of a new scientific paradigm offering novel insights into the age-old enigmas of existence. Over 300 years ago, the human mind discovered the machine code of reality: mathematics. By utilizing abstract thought systems, humans began to decode the workings of the cosmos. From this understanding, the current scientific paradigm emerged, ultimately discovering the gift of technology. Today, however, our island of knowledge is surrounded by ever longer shores of ignorance. Science appears to have hit a dead end when confronted with the nature of reality and consciousness. In this fascinating and accessible volume, James Glattfelder explores a radical paradigm shift uncovering the ontology of reality. It is found to be information-theoretic and participatory, yielding a computational and programmable universe.

This eye-opening look at the intellectual culture of today--in which science, not literature or philosophy, takes center stage in the debate over human nature and the nature of the universe--is certain to spark fervent intellectual debate.

Beyond the Scientific Revolution

Third Culture

The Element in the Room

The Undiscovered Mind

A Path Forward

If I Understood You, Would I Have this Look on My Face?

In this brilliant exploration of our cosmic environment, the renowned particle physicist and New York Times bestselling author of Warped Passages and Knocking on Heaven’s Door uses her research into dark matter to illuminate the startling connections between the furthest reaches of space and life here on Earth. Sixty-six million years ago, an object the size of a city descended from space to crash into Earth, creating a devastating cataclysm that killed off the dinosaurs, along with three-quarters of the other species on the planet. What was its origin? In Dark Matter and the Dinosaurs, Lisa Randall proposes it was a comet that was dislodged from its orbit as the Solar System passed through a disk of dark matter embedded in the Milky Way. In a sense, it might have been dark matter that killed the dinosaurs. Working through the background and consequences of this proposal, Randall shares with us the latest findings—established and speculative—regarding the nature and role of dark matter and the origin of the Universe, our galaxy, our Solar System, and life, along with the process by which scientists explore new concepts. In Dark Matter and the Dinosaurs, Randall tells a breathtaking story that weaves together the cosmos’ history and our own, illuminating the deep relationships that are critical to our world and the astonishing beauty inherent in the most familiar things.

Today many school students are shielded from one of the most important concepts in modern science: evolution. In engaging and conversational style, Teaching About Evolution and the Nature of Science provides a well-structured framework for understanding and teaching evolution. Written for teachers, parents, and community officials as well as scientists and educators, this book describes how evolution reveals both the great diversity and similarity among the Earth's organisms; it explores how scientists approach the question of evolution; and it illustrates the nature of science as a way of knowing about the natural world. In addition, the book provides answers to frequently asked questions to help readers understand many of the issues and misconceptions about evolution. The book includes sample activities for teaching about evolution and the nature of science. For example, the book includes activities that investigate fossil footprints and population growth that teachers of science can use to introduce principles of evolution. Background information, materials, and step-by-step presentations are provided for each activity. In addition, this volume: Presents the evidence for evolution, including how evolution can be observed today. Explains the nature of science through a variety of examples. Describes how science differs from other human endeavors and why evolution is one of the best avenues for helping students understand this distinction. Answers frequently asked questions about evolution. Teaching About Evolution and the Nature of Science builds on the 1996 National Science Education Standards released by the National Research Council--and offers detailed guidance on how to evaluate and choose instructional materials that support the standards. Comprehensive and practical, this book brings one of today's educational challenges into focus in a balanced and reasoned discussion. It will be of special interest to teachers of science, school administrators, and interested members of the community.

Ask a scientist about Hollywood, and you'll probably get eye rolls. But ask someone in Hollywood about science, and they'll see dollar signs: moviemakers know that science can be the source of great stories, with all the drama and action that blockbusters require. That's a huge mistake, says Randy Olson: Hollywood has a lot to teach scientists about how to tell a story—and, ultimately, how to do science better. With Houston, We Have a Narrative, he lays out a stunningly simple method for turning the dull into the dramatic. Drawing on his unique background, which saw him leave his job as a working scientist to launch a career as a filmmaker, Olson first diagnoses the problem: When scientists tell us about their work, they pile one moment and one detail atop another moment and another detail—a stultifying procession of “and, and, and.” What we need instead is an understanding of the basic elements of story, the narrative structures that our brains are all but hardwired to look for—which Olson boils down, brilliantly, to “And, But, Therefore,” or ABT. At a stroke, the ABT approach introduces momentum (“And”), conflict (“But”), and resolution (“Therefore”)—the fundamental building blocks of story. As Olson has shown by leading countless workshops worldwide, when scientists’ eyes are opened to ABT, the effect is staggering: suddenly, they're not just talking about their work—they're telling stories about it. And audiences are captivated. Written with an uncommon verve and enthusiasm, and built on principles that are applicable to fields far beyond science, Houston, We Have a Narrative has the power to transform the way science is understood and appreciated, and ultimately how it's done.

"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 Fictions

The End of War

Information—Consciousness—Reality

The Knowledge Machine: How Irrationality Created Modern Science

Yellow Wife

Rational Mysticism

The End of the World

War is a fact of human nature. As long as we exist, it exists. That's how the argument goes. But longtime Scientific American writer John Horgan disagrees. Applying the scientific method to war leads Horgan to a radical conclusion: biologically speaking, we are just as likely to be peaceful as violent. War is not preordained, and furthermore, it should be thought of as a solvable, scientific problem—like curing cancer. But war and cancer differ in at least one crucial way: whereas cancer is a stubborn aspect of nature, war is our creation. It's our choice whether to unmake it or not. In this compact, methodical treatise, Horgan examines dozens of examples and counterexamples—discussing chimpanzees and bonobos, warring and peaceful indigenous people, the World War I and Vietnam, Margaret Mead and General Sherman—as he finds his way to war's complicated origins. Horgan argues for a far-reaching paradigm shift with profound implications for policy students, ethicists, military men and women, teachers, philosophers, or really, any engaged citizen.

The New York Times best-selling book exploring the counterproductive reactions white people have when their assumptions about race are challenged, and how these reactions maintain racial inequality. In this “vital, necessary, and beautiful book” (Michael Eric Dyson), antiracist educator Robin DiAngelo deftly illuminates the phenomenon of white fragility and “allows us to understand racism as a practice not restricted to ‘bad people’” (Claudia Rankine). Referring to the defensive moves that white people make when challenged racially, white fragility is characterized by emotions such as anger, fear, and guilt, and by behaviors including argumentation and silence. These behaviors, in turn, function to reinstate white racial equilibrium and prevent any meaningful cross-racial dialogue. In this in-depth exploration, DiAngelo examines how white fragility develops, how it protects racial inequality, and what we can do to engage more constructively.

Bestselling author and acclaimed physicist Lawrence Krauss offers a paradigm-shifting view of how everything that exists came to be in the first place. “Where did the universe come from? What was there before it? What will the future bring? And finally, why is there something rather than nothing?” One of the few prominent scientists today to have crossed the chasm between science and popular culture, Krauss describes the staggeringly beautiful experimental observations and mind-bending new theories that demonstrate not only can something arise from nothing, something will always arise from nothing. With a new preface about the significance of the discovery of the Higgs particle, A Universe from Nothing uses Krauss’s characteristic wry humor and wonderfully clear explanations to take us back to the beginning of the beginning, presenting the most recent evidence for how our universe evolved—and the implications for how it’s going to end. Provocative, challenging, and delightfully readable, this is a game-changing look at the most basic underpinning of existence and a powerful antidote to outmoded philosophical, religious, and scientific thinking.

Linking literature from the sociological study of the apocalyptic with the sociology and philosophy of science, Apocalyptic Narratives explores how the apocalyptic narrative frames and provides meaning to contemporary, secular and scientific crises focussing on nuclear war, general environmental crisis and climate change in both English- and German-speaking cultural contexts. In particular, the book will use social identity and representation theories, the sociologies of risk and Lakatos’ philosophy of science to trace how our cultural background and apocalyptic tradition shape our wider interpretation, communication and response to contemporary global crisis. The set of environmental and other challenges that the world is facing is often framed in terms of apocalyptic or existential crisis. Yet apocalyptic fears about the near future are nothing new. This book looks at the narrative connections between our current sense of crisis and the apocalyptic. The book will be of interest to readers interested in environmental crisis and communication, the sociology and philosophy of science, and existential risk, but also to readers interested in the apocalyptic and its contemporary relevance.

The End of Science

Science-y Stuff Staring You in the Face

Reinventing Discovery

Teaching About Evolution and the Nature of Science

Citizen Science

Confronting Myths of the Health and Fitness Industry

The Return of Race Science

**\*\*FREE SAMPLER\*\*** Steve Mould and Helen Arney, aka Festival of the Spoken Nerd, have a combined 35 million YouTube views, their own Radio 4 programme, Domestic Science, appeared in three consecutive slots of the latest series of QI and toured their stand-up science show to over 15,000 people in the UK. This free e-sampler of The Elements of an experiment-fuelled adventure to explain the everyday science that is staring you right in the face. Have you ever wanted to perform sonic experiments with your morning coffee? Predict the exact second your unborn child will be born? Spice up your love life with inspiration from the animal kingdom? Well now you can, with this sneak peek in publication in October. This hilarious and informative book is designed for anyone who is sci-curious and wants to know more about the world around them, especially the elements of everyday science that other books ignore.

An exploration of why we play video games despite the fact that we are almost certain to feel unhappy when we fail at them. We may think of video games as being "fun," but in The Art of Failure, Jesper Juul claims that this is almost entirely mistaken. When we play video games, our facial expressions are rarely those of happiness or bliss. We lose, or die, or fail to advance to the next level. Humans may have a fundamental desire to succeed and feel competent, but game players choose to engage in an activity in which they are nearly certain to fail and feel incompetent. So why do we play video games even though they make us unhappy? Juul examines this paradox. In video game cinema, it seems that we want to experience unpleasantness even if we also dislike it. Reader or audience reaction to tragedy is often explained as catharsis, as a purging of negative emotions. But, Juul points out, this doesn't seem to be the case for video game players. Games do not purge us of unpleasant emotions; they produce them in playing do? Juul argues that failure in a game is unique in that when you fail in a game, you (not a character) are in some way inadequate. Yet games also motivate us to play more, in order to escape that inadequacy, and the feeling of escaping failure (often by improving skills) is a central enjoyment of games. Games, writes Juul, are the art of failure and allows us to experience it and experiment with it. The Art of Failure is essential reading for anyone interested in video games, whether as entertainment, art, or education.

Presents the story of Plenty Coups, the last great Chief of the Crow Nation. This title contains a philosophical and ethical inquiry into a people faced with the end of their way of life.

A top expert on human trauma argues that we vastly overestimate how common PTSD is and fail to recognize how resilient people really are After 9/11, mental health professionals flocked to New York to handle what everyone assumed would be a flood of trauma cases. Oddly, the flood never came. In The End of Trauma, pioneering psychologist Peter Dinklage predicts the psychological response to 9/11 because most of what we understand about trauma is wrong. For starters, it's not nearly as common as we think. In fact, people are overwhelmingly resilient to adversity. What we often interpret as PTSD are signs of a natural process of learning how to deal with a specific situation. We can cope with trauma. Drawing on four decades of research, Bonanno explains what makes us resilient, why we sometimes aren't, and how we can better handle traumatic stress. Hopeful and humane, The End of Trauma overturns everything we thought we knew about how people respond to hardship.

Superior

Facing The Limits Of Knowledge In The Twilight Of The Scientific Age

The Last Book in the Universe

Facing the Limits of Knowledge in the Twilight of the Scientific Age

Facing Up

How the Human Brain Defies Replication, Medication, and Explanation

Science under Fire

**The End Of ScienceFacing The Limits Of Knowledge In The Twilight Of The Scientific AgeBasic Books**

**Science journalist John Horgan presents a radical new perspective on the mind-body problem and related issues such as consciousness, free will, morality and the meaning of life. Horgan argues that science will never discover an objectively true solution to the mind-body problem because such a solution does not exist.**

**Horgan explores his thesis by delving into the professional and personal lives of nine mind-body experts, including neuroscientist Christof Koch, cognitive scientist Douglas Hofstadter, child psychologist Alison Gopnik, complexologist Stuart Kauffman, legal scholar and psychoanalyst Elyn Saks, philosopher Owen**

**Flanagan, novelist Rebecca Goldstein, evolutionary biologist Robert Trivers, and economist Deirdre McCloskey.**

**Scores of talented and dedicated people serve the forensic science community, performing vitally important work. However, they are often constrained by lack of adequate resources, sound policies, and national support. It is clear that change and advancements, both systematic and scientific, are needed in a number of forensic science disciplines to ensure the reliability of work, establish enforceable standards, and promote best practices with consistent application. Strengthening Forensic Science in the United States: A Path Forward provides a detailed plan for addressing these needs and suggests the creation of a new government entity, the National Institute of Forensic Science, to establish and enforce standards within the forensic science community. The benefits of improving and regulating the forensic science disciplines are clear: assisting law enforcement officials, enhancing homeland security, and reducing the risk of wrongful conviction and exoneraton. Strengthening Forensic Science in the United States gives a full account of what is needed to advance the forensic science disciplines, including upgrading of systems and organizational structures, better training, widespread adoption of uniform and enforceable best practices, and mandatory certification and accreditation programs. While this book provides an essential call-to-action for congress and policy makers, it also serves as a vital tool for law enforcement agencies, criminal prosecutors and attorneys, and forensic science educators.**

**Mind-Body Problems**

**How a New Understanding of the Universe Can Help Answer Age-Old Questions of Existence**

**Why It's So Hard for White People to Talk About Racism**

**Apocalyptic Narratives**

**Why Science Needs Story**

**Dark Matter and the Dinosaurs**