

## She Has Her Mothers Laugh The Powers Perversions And Potential Of Heredity

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### Memorial Drive

Epigenetics can potentially revolutionize our understanding of the structure and behavior of biological life on Earth. It explains why mapping an organism's genetic code is not enough to determine how it develops or acts and shows how nurture combines with nature to engineer biological diversity. Surveying the twenty-year history of the field while also highlighting its latest findings and innovations, this volume provides a readily understandable introduction to the foundations of epigenetics. Nessa Carey, a leading epigenetics researcher, connects the field's arguments to such diverse phenomena as how ants and queen bees control their colonies; why tortoiseshell cats are always female; why some plants need cold weather before they can flower; and how our bodies age and develop disease. Reaching beyond biology, epigenetics now informs work on drug addiction, the long-term effects of famine, and the physical and psychological consequences of childhood trauma. Carey concludes with a discussion of the future directions for this research and its ability to improve human health and well-being.

### Chance in the House of Fate

'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 'Suseful, 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. TGTCGTGAAGCTACTATTTAAAATGCCACAGTGAAAGATTAAACGCCCGAAAACGGGGTGATAAATGGACGGTAAGTTCCCGA CTAAACGTGTTAAATG

### A Crack in Creation

In this unprecedented history of a scientific revolution, award-winning author and journalist Carl Zimmer tells the definitive story of the dawn of the age of the brain and modern consciousness. Told here for the first time, the dramatic tale of how the secrets of the brain were discovered in seventeenth-century England unfolds against a turbulent backdrop of civil war, the Great Fire of London, and plague. At the beginning of that chaotic century, no one knew how the brain worked or even what it looked like intact. But by the century's close, even the most common conceptions and dominant philosophies had been completely overturned, supplanted by a radical new vision of man, God, and the universe. Presiding over the rise of this new scientific paradigm was the founder of modern neurology, Thomas Willis, a fascinating, sympathetic, even heroic figure at the center of an extraordinary group of scientists and philosophers known as the Oxford circle. Chronicled here in vivid detail are their groundbreaking revelations and the often gory experiments that first enshrined the brain as the physical seat of intelligence -- and the seat of the human soul. Soul Made Flesh conveys a contagious appreciation for the brain, its structure, and its many marvelous functions, and the implications for human identity, mind, and morality.

### Her Mother's Hope

## Blueprint

Nicholas Wade's articles are a major reason why the science section has become the most popular, nationwide, in the New York Times. In his groundbreaking *Before the Dawn*, Wade reveals humanity's origins as never before—a journey made possible only recently by genetic science, whose incredible findings have answered such questions as: What was the first human language like? How large were the first societies, and how warlike were they? When did our ancestors first leave Africa, and by what route did they leave? By eloquently solving these and numerous other mysteries, Wade offers nothing less than a uniquely complete retelling of a story that began 500 centuries ago.

## Parasite Rex

“Jacqueline Winspear has created a memoir of her English childhood that is every bit as engaging as her Maisie Dobbs novels, just as rich in character and detail, history and humanity. Her writing is lovely, elegant and welcoming.”—Anne Lamott The New York Times bestselling author of the Maisie Dobbs series offers a deeply personal memoir of her family's resilience in the face of war and privation. After sixteen novels, Jacqueline Winspear has taken the bold step of turning to memoir, revealing the hardships and joys of her family history. Both shockingly frank and deftly restrained, her story tackles the difficult, poignant, and fascinating family accounts of her paternal grandfather's shellshock; her mother's evacuation from London during the Blitz; her soft-spoken animal-loving father's torturous assignment to an explosives team during WWII; her parents' years living with Romany Gypsies; and Winspear's own childhood picking hops and fruit on farms in rural Kent, capturing her ties to the land and her dream of being a writer at its very inception. An eye-opening and heartfelt portrayal of a post-War England we rarely see, *This Time Next Year We'll Be Laughing* chronicles a childhood in the English countryside, of working class indomitability and family secrets, of artistic inspiration and the price of memory.

## Friendship: The Evolution, Biology, and Extraordinary Power of Life's Fundamental Bond

## She Has Her Mother's Laugh

Everybody Out of the Pond At the Water's Edge will change the way you think about your place in the world. The awesome journey of life's transformation from the first microbes 4 billion years ago to Homo sapiens today is an epic that we are only now beginning to grasp. Magnificent and bizarre, it is the story of how we got here, what we left behind, and what we brought with us. We all know about evolution, but it still seems absurd that our ancestors were fish. Darwin's idea of natural selection was the key to solving generation-to-generation evolution -- microevolution -- but it could only point us toward a complete explanation, still to come, of the engines of macroevolution, the transformation of body shapes across millions of years. Now, drawing on the latest fossil discoveries and breakthrough scientific analysis,

Carl Zimmer reveals how macroevolution works. Escorting us along the trail of discovery up to the current dramatic research in paleontology, ecology, genetics, and embryology, Zimmer shows how scientists today are unveiling the secrets of life that biologists struggled with two centuries ago. In this book, you will find a dazzling, brash literary talent and a rigorous scientific sensibility gracefully brought together. Carl Zimmer provides a comprehensive, lucid, and authoritative answer to the mystery of how nature actually made itself.

### Genetics in the Madhouse

Used widely in non-majors biology classes, *The Tangled Bank* is the first textbook about evolution intended for the general reader. Zimmer, an award-winning science writer, takes readers on a fascinating journey into the latest discoveries about evolution. In the Canadian Arctic, paleontologists unearth fossils documenting the move of our ancestors from sea to land. In the outback of Australia, a zoologist tracks some of the world's deadliest snakes to decipher the 100-million-year evolution of venom molecules. In Africa, geneticists are gathering DNA to probe the origin of our species. In clear, non-technical language, Zimmer explains the central concepts essential for understanding new advances in evolution, including natural selection, genetic drift, and sexual selection. He demonstrates how vital evolution is to all branches of modern biology—from the fight against deadly antibiotic-resistant bacteria to the analysis of the human genome.

### Soul Made Flesh

With a New Chapter and Updated Epilogue on Coronavirus A Financial Times Best Health Book of 2019 and a New York Times Book Review Editors' Choice "Honigsbaum does a superb job covering a century's worth of pandemics and the fears they invariably unleash." —Howard Markel, MD, PhD, director of the Center for the History of Medicine, University of Michigan How can we understand the COVID-19 pandemic? Ever since the 1918 Spanish influenza pandemic, scientists have dreamed of preventing such catastrophic outbreaks of infectious disease. Yet despite a century of medical progress, viral and bacterial disasters continue to take us by surprise, inciting panic and dominating news cycles. In *The Pandemic Century*, a lively account of scares both infamous and less known, medical historian Mark Honigsbaum combines reportage with the history of science and medical sociology to artfully reconstruct epidemiological mysteries and the ecology of infectious diseases. We meet dedicated disease detectives, obstructive or incompetent public health officials, and brilliant scientists often blinded by their own knowledge of bacteria and viruses—and see how fear of disease often exacerbates racial, religious, and ethnic tensions. Now updated with a new chapter and epilogue.

### Evolution

A revelatory investigation of friendship, with profound implications for our understanding of what humans and animals alike need to thrive across a lifetime. The phenomenon of friendship is universal and elemental. Friends, after all, are the family we choose. But what makes these bonds not just pleasant but essential, and how do they affect our bodies and our minds? In *Friendship*, science journalist Lydia

Denworth takes us in search of friendship's biological, psychological, and evolutionary foundations. She finds friendship to be as old as early life on the African savannas—when tribes of people grew large enough for individuals to seek fulfillment of their social needs outside their immediate families. Denworth sees this urge to connect reflected in primates, too, taking us to a monkey sanctuary in Puerto Rico and a baboon colony in Kenya to examine social bonds that offer insight into our own. She meets scientists at the frontiers of brain and genetics research and discovers that friendship is reflected in our brain waves, our genomes, and our cardiovascular and immune systems; its opposite, loneliness, can kill. At long last, social connection is recognized as critical to wellness and longevity. With insight and warmth, Denworth weaves past and present, field biology and neuroscience, to show how our bodies and minds are designed for friendship across life stages, the processes by which healthy social bonds are developed and maintained, and how friendship is changing in the age of social media. Blending compelling science, storytelling, and a grand evolutionary perspective, Denworth delineates the essential role that cooperation and companionship play in creating human (and nonhuman) societies. Friendship illuminates the vital aspects of friendship, both visible and invisible, and offers a refreshingly optimistic vision of human nature. It is a clarion call for putting positive relationships at the center of our lives.

## Why We Swim

The theme of lost childhood remains constant in this short fictional narrative of rebellious Annie John's coming of age on the small island of Antigua

## The Craft of Science Writing: Selections from The Open Notebook

Finding Family: My Search for Roots and the Secrets in My DNA is the highly suspenseful account of an adoptee trying to reclaim the biological family denied him by sealed birth records. This fascinating quest, including the author's landmark use of DNA testing, takes readers on an exhilarating roller-coaster ride and concludes with a twist that rivals anything Hollywood has to offer. In the vein of a classic mystery, Hill gathers the seemingly scant evidence surrounding the circumstances of his birth. As his resolve shores up, the author also avails of new friends, genealogists, the Internet, and the latest DNA tests in the new field of genetic genealogy. As he closes in on the truth of his ancestry, he is able to construct a living, breathing portrait of the young woman who was faced with the decision to forsake her rights to her child, and ultimately the man whose identity had remained hidden for decades. Finding Family offers guidance, insight, and motivation for anyone engaged in a similar mission, from ways to obtain information to the many networks that can facilitate adoption searches. The book includes a detailed guide to DNA and genetic genealogy and how they can produce irrefutable results in determining genetic connections and help adoptees bypass sealed records and similar stumbling blocks.

## My Mother Laughs

BY THE WINNER OF THE 2020 NOBEL PRIZE IN CHEMISTRY Finalist for the Los Angeles Times Book Prize “The future is in our hands as never before, and this book explains the stakes like no other.” — George Lucas “Required reading for every concerned citizen.” — New York Review of Books Not since the atomic bomb has a technology so alarmed its inventors that they warned the world about its use. That is, until 2015, when biologist Jennifer Doudna called for a worldwide moratorium on the use of the gene-editing tool CRISPR—a revolutionary new technology that she helped create—to make heritable changes in human embryos. The cheapest, simplest, most effective way of manipulating DNA ever known, CRISPR may well give us the cure to HIV, genetic diseases, and some cancers. Yet even the tiniest changes to DNA could have myriad, unforeseeable consequences, to say nothing of the ethical and societal repercussions of intentionally mutating embryos to create “better” humans. Writing with fellow researcher Sam Sternberg, Doudna—who has since won the Nobel Prize for her CRISPR research—shares the thrilling story of her discovery and describes the enormous responsibility that comes with the power to rewrite the code of life. “An invaluable account . . . We owe Doudna several times over.” — Guardian

### Finding Family

Shortlisted for The Baillie Gifford Prize for Non-Fiction 2018 *She Has Her Mother's Laugh* presents a profoundly original perspective on what we pass along from generation to generation. Charles Darwin played a crucial part in turning heredity into a scientific question, and yet he failed spectacularly to answer it. The birth of genetics in the early 1900s seemed to do precisely that. Gradually, people translated their old notions about heredity into a language of genes. As the technology for studying genes became cheaper, millions of people ordered genetic tests to link themselves to missing parents, to distant ancestors, to ethnic identities . . . But, Zimmer writes, 'Each of us carries an amalgam of fragments of DNA, stitched together from some of our many ancestors. Each piece has its own ancestry, traveling a different path back through human history. A particular fragment may sometimes be cause for worry, but most of our DNA influences who we are—our appearance, our height, our penchants—in inconceivably subtle ways.' Heredity isn't just about genes that pass from parent to child. Heredity continues within our own bodies, as a single cell gives rise to trillions of cells that make up our bodies. We say we inherit genes from our ancestors—using a word that once referred to kingdoms and estates—but we inherit other things that matter as much or more to our lives, from microbes to technologies we use to make life more comfortable. We need a new definition of what heredity is and, through Carl Zimmer's lucid exposition and storytelling, this resounding tour de force delivers it. Weaving together historical and current scientific research, his own experience with his two daughters, and the kind of original reporting expected of one of the world's best science journalists, Zimmer ultimately unpacks urgent bioethical quandaries arising from new biomedical technologies, but also long-standing presumptions about who we really are and what we can pass on to future generations.

### At the Water's Edge

A top behavioral geneticist makes the case that DNA inherited from our parents at the moment of conception can predict our psychological strengths and weaknesses. In *Blueprint*, behavioral geneticist Robert Plomin describes how the DNA revolution has made DNA personal by

giving us the power to predict our psychological strengths and weaknesses from birth. A century of genetic research shows that DNA differences inherited from our parents are the consistent lifelong sources of our psychological individuality—the blueprint that makes us who we are. Plomin reports that genetics explains more about the psychological differences among people than all other factors combined. Nature, not nurture, is what makes us who we are. Plomin explores the implications of these findings, drawing some provocative conclusions—among them that parenting styles don't really affect children's outcomes once genetics is taken into effect. This book offers readers a unique insider's view of the exciting synergies that came from combining genetics and psychology. The paperback edition has a new afterword by the author.

### Editing Humanity

Book one in the bestselling series that has captivated millions of readers around the world! A NEW YORK TIMES, USA TODAY, and PUBLISHERS WEEKLY bestseller "Her Mother's Hope has all the meaty elements of a blockbuster." Denver Post The first in a two-book saga by the beloved author of Redeeming Love and The Masterpiece, Her Mother's Hope is a rich, moving epic about faith and dreams, heartache and disappointment, and the legacy of love passed down through four generations in one family. Near the turn of the twentieth century, fiery Marta Schneider leaves Switzerland for a better life, determined to fulfill her mother's hope. Her formative journey takes her through Europe and eventually to Canada, where she meets handsome Niclas Waltert. But nothing has prepared her for the sacrifices she must make for marriage and motherhood as she travels to the Canadian wilderness and then to the dusty Central Valley of California to raise her family. Marta's hope is to give her children a better life, but experience has taught her that only the strong survive. Her tough love is often misunderstood, especially by her oldest daughter, Hildemara Rose, who craves her mother's acceptance. Amid the drama of World War II, Hildie falls in love and begins a family of her own. But unexpected and tragic events force mother and daughter to face their own shortcomings and the ever-widening chasm that threatens to separate them forever. "Emotionally rich. . . . As her compelling characters seek to do what they feel their faith demands, Rivers sets their resonant struggles against dusty streets, windswept Canadian plains, and California vineyards in vivid scenes readers will not soon forget." Booklist, starred review "Writers like Rivers are why people buy Christian fiction: it's dramatic, engaging . . . [and] this well-told tale will have readers eagerly awaiting the story's resolution." Publishers Weekly

### The Gene

Science journalism has perhaps never been so critical to our world--and the demands on science journalists have never been greater. On any given day, a science journalist might need to explain the details of genetic engineering, analyze a development in climate change research, or serve as a watchdog helping to ensure the integrity of the scientific enterprise. And science writers have to spin tales seductive enough to keep readers hooked to the end, despite the endless other delights just a click away. How does one do it? Here, for the first time, is a collection of indispensable articles on the craft of science writing as told by some of the most skillful science journalists working today. These selections are a wealth of journalistic knowledge from The Open Notebook, the online community that has been a primary resource for

science journalists and aspiring science writers for the last decade. The Craft of Science Writing gives you a crew of accomplished, encouraging friends to whisper over your shoulder as you work. In these pages, you'll find interviews with leading journalists offering behind-the-scenes inspiration, as well as in-depth essays on the craft offering practical advice, including: How to make the transition into science writing How to find and pitch a science story to editors How to wade through a sea of technicalities in scientific papers to spot key facts How to evaluate scientific and statistical claims How to report on controversial topics How to structure a science story, from short news to long features How to engage readers in a science story and hold their attention to the end

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### Evolution

An Instant New York Times Bestseller A chillingly personal and exquisitely wrought memoir of a daughter reckoning with the brutal murder of her mother at the hands of her former stepfather, and the moving, intimate story of a poet coming into her own in the wake of a tragedy At age nineteen, Natasha Trethewey had her world turned upside down when her former stepfather shot and killed her mother. Grieving and still new to adulthood, she confronted the twin pulls of life and death in the aftermath of unimaginable trauma and now explores the way this experience lastingly shaped the artist she became. With penetrating insight and a searing voice that moves from the wrenching to the elegiac, Pulitzer Prize – winning poet Natasha Trethewey explores this profound experience of pain, loss, and grief as an entry point into understanding the tragic course of her mother's life and the way her own life has been shaped by a legacy of fierce love and resilience. Moving through her mother's history in the deeply segregated South and through her own girlhood as a "child of miscegenation" in Mississippi, Trethewey plumbs her sense of dislocation and displacement in the lead-up to the harrowing crime that took place on Memorial Drive in Atlanta in 1985. Memorial Drive is a compelling and searching look at a shared human experience of sudden loss and absence but also a piercing glimpse at the enduring ripple effects of white racism and domestic abuse. Animated by unforgettable prose and inflected by a poet's attention to language, this is a luminous, urgent, and visceral memoir from one of our most important contemporary writers and thinkers.

### Designer Genes

The untold story of how hereditary data in mental hospitals gave rise to the science of human heredity In the early 1800s, a century before there was any concept of the gene, physicians in insane asylums began to record causes of madness in their admission books. Almost from the beginning, they pointed to heredity as the most important of these causes. Genetics in the Madhouse is the untold story of how the collection of hereditary data in asylums and prisons gave rise to a new science of human heredity. Theodore Porter looks at the institutional

use of innovative quantitative practices—such as pedigree charts and censuses of mental illness—that were worked out in the madhouse long before the manipulation of DNA became possible in the lab. *Genetics in the Madhouse* brings to light the hidden history behind modern genetics and deepens our appreciation of the moral issues at stake in data work conducted at the border of subjectivity and science.

### This Time Next Year We'll Be Laughing

A concise overview of genetics, evolution, and cellular processes, written by a winner of the Nobel Prize in Medicine, offers insight into the microscopic world of cells, addresses historical and contemporary questions, and discusses current ethical issues in the field of human biology.

### The Lost Family

From author and speaker Melanie Dale comes a laugh-out-loud hilarious parenting book that teaches you how to dial back the stress of raising children with the simple premise that we all just need to lighten up a little bit. Most of us thought we'd be amazing parents—and then we had kids. Now we spend what little free time we have comparing ourselves to other parents, comparing our kids to other kids, and panicking that everyone else is nailing it except us. Between constant social media postings to conflicting advice found in parenting books, we often have no choice but to freak out. But there is another way. We all just need to calm the h\*ck down. Melanie Dale—a special needs parent, adoptive parent, in vitro parent, and reluctant cheer mom—believes we are all putting too much pressure on ourselves and our kids to be perfect. Instead, she argues, we need to take a step back so we can actually enjoy this journey called parenting. *Calm the H\*ck Down* is filled with stories from Melanie's own life, as well as real-life research for learning how to lighten up about every aspect of parenting—from poopy diapers and germs to family vacations and adolescent angst. She also discusses the pressure to knock it all out of the Pinterest park, the challenge of instilling some kind of faith into your kids, and worrying about their future while still trying to live in the present. Infused with quirky humor, profound insight, and accessible advice, *Calm the H\*ck Down* gives you the permission to finally relax and enjoy this ridiculous thing we do called parenting.

### Microcosm

Actress and author of the New York Times bestseller *Down Came the Rain*, Brooke Shields, explores her relationship with her unforgettable mother, Teri, in her new memoir. Brooke Shields never had what anyone would consider an ordinary life. She was raised by her Newark-tough single mom, Teri, a woman who loved the world of show business and was often a media sensation all by herself. Brooke's iconic modeling career began by chance when she was only eleven months old, and Teri's skills as both Brooke's mother and manager were formidable. But in private she was troubled and drinking heavily. As Brooke became an adult the pair made choices and sacrifices that would affect their relationship forever. And when Brooke's own daughters were born she found that her experience as a mother was shaped in

every way by the woman who raised her. But despite the many ups and downs, Brooke was by Teri's side when she died in 2012, a loving daughter until the end. Only Brooke knows the truth of the remarkable, difficult, complicated woman who was her mother. And now, in an honest, open memoir about her life growing up, Brooke will reveal stories and feelings that are relatable to anyone who has been a mother or daughter.

### There Was a Little Girl

The #1 NEW YORK TIMES Bestseller The basis for the PBS Ken Burns Documentary The Gene: An Intimate History From the Pulitzer Prize – winning author of The Emperor of All Maladies—a fascinating history of the gene and “a magisterial account of how human minds have laboriously, ingeniously picked apart what makes us tick” (Elle). “Sid Mukherjee has the uncanny ability to bring together science, history, and the future in a way that is understandable and riveting, guiding us through both time and the mystery of life itself.” – Ken Burns “Dr. Siddhartha Mukherjee dazzled readers with his Pulitzer Prize-winning The Emperor of All Maladies in 2010. That achievement was evidently just a warm-up for his virtuoso performance in The Gene: An Intimate History, in which he braids science, history, and memoir into an epic with all the range and biblical thunder of Paradise Lost” (The New York Times). In this biography Mukherjee brings to life the quest to understand human heredity and its surprising influence on our lives, personalities, identities, fates, and choices. “Mukherjee expresses abstract intellectual ideas through emotional stories...[and] swaddles his medical rigor with rhapsodic tenderness, surprising vulnerability, and occasional flashes of pure poetry” (The Washington Post). Throughout, the story of Mukherjee's own family—with its tragic and bewildering history of mental illness—reminds us of the questions that hang over our ability to translate the science of genetics from the laboratory to the real world. In riveting and dramatic prose, he describes the centuries of research and experimentation—from Aristotle and Pythagoras to Mendel and Darwin, from Boveri and Morgan to Crick, Watson and Franklin, all the way through the revolutionary twenty-first century innovators who mapped the human genome. “A fascinating and often sobering history of how humans came to understand the roles of genes in making us who we are—and what our manipulation of those genes might mean for our future” (Milwaukee Journal-Sentinel), The Gene is the revelatory and magisterial history of a scientific idea coming to life, the most crucial science of our time, intimately explained by a master. “The Gene is a book we all should read” (USA TODAY).

### The Tangled Bank

A Best Book of the YearSeed Magazine • Granta Magazine • The Plain-DealerIn this fascinating and utterly engaging book, Carl Zimmer traces E. coli's pivotal role in the history of biology, from the discovery of DNA to the latest advances in biotechnology. He reveals the many surprising and alarming parallels between E. coli's life and our own. And he describes how E. coli changes in real time, revealing billions of years of history encoded within its genome. E. coli is also the most engineered species on Earth, and as scientists retool this microbe to produce life-saving drugs and clean fuel, they are discovering just how far the definition of life can be stretched. From the Trade Paperback edition.

## Creation

A Best Book of the Season: BuzzFeed \* Bustle \* San Francisco Chronicle "A fascinating and beautifully written love letter to water. I was enchanted by this book." —Rebecca Skloot, bestselling author of *The Immortal Life of Henrietta Lacks* An immersive, unforgettable, and eye-opening perspective on swimming—and on human behavior itself. We swim in freezing Arctic waters and piranha-infested rivers to test our limits. We swim for pleasure, for exercise, for healing. But humans, unlike other animals that are drawn to water, are not natural-born swimmers. We must be taught. Our evolutionary ancestors learned for survival; now, in the twenty-first century, swimming is one of the most popular activities in the world. *Why We Swim* is propelled by stories of Olympic champions, a Baghdad swim club that meets in Saddam Hussein's palace pool, modern-day Japanese samurai swimmers, and even an Icelandic fisherman who improbably survives a wintry six-hour swim after a shipwreck. New York Times contributor Bonnie Tsui, a swimmer herself, dives into the deep, from the San Francisco Bay to the South China Sea, investigating what about water—despite its dangers—seduces us and why we come back to it again and again.

## Calm the H\*ck Down

An expert in human gene modification and research explores the ethical questions surrounding science's new power to guide the genetic destiny of humanity.

## Annie John

One of the world's leading experts on genetics unravels one of the most important breakthroughs in modern science and medicine. If our genes are, to a great extent, our destiny, then what would happen if mankind could engineer and alter the very essence of our DNA coding? Millions might be spared the devastating effects of hereditary disease or the challenges of disability, whether it was the pain of sickle-cell anemia to the ravages of Huntington's disease. But this power to "play God" also raises major ethical questions and poses threats for potential misuse. For decades, these questions have lived exclusively in the realm of science fiction, but as Kevin Davies powerfully reveals in his new book, this is all about to change. Engrossing and page-turning, *Editing Humanity* takes readers inside the fascinating world of a new gene editing technology called CRISPR, a high-powered genetic toolkit that enables scientists to not only engineer but to edit the DNA of any organism down to the individual building blocks of the genetic code. Davies introduces readers to arguably the most profound scientific breakthrough of our time. He tracks the scientists on the front lines of its research to the patients whose powerful stories bring the narrative movingly to human scale. Though the birth of the "CRISPR babies" in China made international news, there is much more to the story of CRISPR than headlines seemingly ripped from science fiction. In *Editing Humanity*, Davies sheds light on the implications that this new technology can have on our everyday lives and in the lives of generations to come.

## The \$1,000 Genome

For all the discussion in the media about creationism and 'Intelligent Design', virtually nothing has been said about the evidence in question - the evidence for evolution by natural selection. Yet, as this succinct and important book shows, that evidence is vast, varied, and magnificent, and drawn from many disparate fields of science. The very latest research is uncovering a stream of evidence revealing evolution in action - from the actual observation of a species splitting into two, to new fossil discoveries, to the deciphering of the evidence stored in our genome. Why Evolution is True weaves together the many threads of modern work in genetics, palaeontology, geology, molecular biology, anatomy, and development to demonstrate the 'indelible stamp' of the processes first proposed by Darwin. It is a crisp, lucid, and accessible statement that will leave no one with an open mind in any doubt about the truth of evolution.

### The Joy Luck Club

Explores the hidden world of viruses, explaining how they profoundly affect human lives and updating the reader in current virus-related issues, such as the frenetic evolution of the HIV virus, which could pose greater dangers in the future. By the author of Parasite Rex.

### The Epigenetics Revolution

### Before the Dawn

2019 PEN/E.O. Wilson Literary Science Writing Award Finalist "Science book of the year"--The Guardian One of New York Times 100 Notable Books for 2018 One of Publishers Weekly's Top Ten Books of 2018 One of Kirkus's Best Books of 2018 One of Mental Floss's Best Books of 2018 One of Science Friday's Best Science Books of 2018 "Extraordinary"--New York Times Book Review "Magisterial"--The Atlantic "Engrossing"--Wired "Leading contender as the most outstanding nonfiction work of the year"--Minneapolis Star-Tribune Celebrated New York Times columnist and science writer Carl Zimmer presents a profoundly original perspective on what we pass along from generation to generation. Charles Darwin played a crucial part in turning heredity into a scientific question, and yet he failed spectacularly to answer it. The birth of genetics in the early 1900s seemed to do precisely that. Gradually, people translated their old notions about heredity into a language of genes. As the technology for studying genes became cheaper, millions of people ordered genetic tests to link themselves to missing parents, to distant ancestors, to ethnic identities. But, Zimmer writes, "Each of us carries an amalgam of fragments of DNA, stitched together from some of our many ancestors. Each piece has its own ancestry, traveling a different path back through human history. A particular fragment may sometimes be cause for worry, but most of our DNA influences who we are--our appearance, our height, our penchants--in inconceivably subtle ways." Heredity isn't just about genes that pass from parent to child. Heredity continues within our own bodies, as a single cell gives rise to trillions of cells that make up our bodies. We say we inherit genes from our ancestors--using a word that once referred to kingdoms and estates--but we inherit other things that matter as much or more to our lives, from microbes to technologies we use to make life more comfortable. We need a new definition of what heredity is and, through Carl Zimmer's lucid exposition and storytelling,

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

### A Planet of Viruses

A look inside the often hidden world of parasites turns the clock back to the beginning of life on Earth to answer key questions about these highly evolved and resilient life forms.

### The Pandemic Century: One Hundred Years of Panic, Hysteria, and Hubris

"The Joy Luck Club is one of my favorite books. From the moment I first started reading it, I knew it was going to be incredible. For me, it was one of those once-in-a-lifetime reading experiences that you cherish forever. It inspired me as a writer and still remains hugely inspirational." —Kevin Kwan, author of *Crazy Rich Asians* Amy Tan's beloved, New York Times bestselling tale of mothers and daughters *Four mothers, four daughters, four families* whose histories shift with the four winds depending on who's "saying" the stories. In 1949 four Chinese women, recent immigrants to San Francisco, begin meeting to eat dim sum, play mahjong, and talk. United in shared unspeakable loss and hope, they call themselves the Joy Luck Club. Rather than sink into tragedy, they choose to gather to raise their spirits and money. "To despair was to wish back for something already lost. Or to prolong what was already unbearable." Forty years later the stories and history continue. With wit and sensitivity, Amy Tan examines the sometimes painful, often tender, and always deep connection between mothers and daughters. As each woman reveals her secrets, trying to unravel the truth about her life, the strings become more tangled, more entwined. Mothers boast or despair over daughters, and daughters roll their eyes even as they feel the inextricable tightening of their matriarchal ties. Tan is an astute storyteller, enticing readers to immerse themselves into these lives of complexity and mystery.

### Walk Two Moons

Examines the diverse ways in which human heredity is linked to the rest of the natural world and analyzes how the science of genetics affects everyday life.

### Coming to Life

In her own singularly beautiful style, Newbery Medal winner Sharon Creech intricately weaves together two tales, one funny, one bittersweet, to create a heartwarming, compelling, and utterly moving story of love, loss, and the complexity of human emotion. Thirteen-year-old

Salamanca Tree Hiddle, proud of her country roots and the "Indian-ness in her blood," travels from Ohio to Idaho with her eccentric grandparents. Along the way, she tells them of the story of Phoebe Winterbottom, who received mysterious messages, who met a "potential lunatic," and whose mother disappeared. As Sal entertains her grandparents with Phoebe's outrageous story, her own story begins to unfold—the story of a thirteen-year-old girl whose only wish is to be reunited with her missing mother.

### Life's Edge

This remarkable book presents a rich and up – to – date view of evolution that explores the far – reaching implications of Darwin's theory and emphasizes the power, significance, and relevance of evolution to our lives today. After all, we ourselves are the product of evolution, and we can tackle many of our gravest challenges – – from lethal resurgence of antibiotic – resistant diseases to the wave of extinctions that looms before us – – with a sound understanding of the science.

### The Kallikak Family

“Carl Zimmer is one of the best science writers we have today.” —Rebecca Skloot, author of *The Immortal Life of Henrietta Lacks* We all assume we know what life is, but the more scientists learn about the living world—from protocells to brains, from zygotes to pandemic viruses—the harder they find it is to locate life's edge. Carl Zimmer investigates one of the biggest questions of all: What is life? The answer seems obvious until you try to seriously answer it. Is the apple sitting on your kitchen counter alive, or is only the apple tree it came from deserving of the word? If we can't answer that question here on earth, how will we know when and if we discover alien life on other worlds? The question hangs over some of society's most charged conflicts—whether a fertilized egg is a living person, for example, and when we ought to declare a person legally dead. *Life's Edge* is an utterly fascinating investigation that no one but one of the most celebrated science writers of our generation could craft. Zimmer journeys through the strange experiments that have attempted to re-create life. Literally hundreds of definitions of what that should look like now exist, but none has yet emerged as an obvious winner. Lists of what living things have in common do not add up to a theory of life. It's never clear why some items on the list are essential and others not. Coronaviruses have altered the course of history, and yet many scientists maintain they are not alive. Chemists are creating droplets that can swarm, sense their environment, and multiply. Have they made life in the lab? Whether he is handling pythons in Alabama or searching for hibernating bats in the Adirondacks, Zimmer revels in astounding examples of life at its most bizarre. He tries his own hand at evolving life in a test tube with unnerving results. Charting the obsession with Dr. Frankenstein's monster and how Coleridge came to believe the whole universe was alive, Zimmer leads us all the way into the labs and minds of researchers working on engineering life from the ground up.

### She Has Her Mother's Laugh

A deeply reported look at the rise of home genetic testing and the seismic shock it has had on individual lives You swab your cheek or spit

into a vial, then send it away to a lab somewhere. Weeks later you get a report that might tell you where your ancestors came from or if you carry certain genetic risks. Or the report could reveal a long-buried family secret and upend your entire sense of identity. Soon a lark becomes an obsession, an incessant desire to find answers to questions at the core of your being, like “Who am I?” and “Where did I come from?” Welcome to the age of home genetic testing. In *The Lost Family*, journalist Libby Copeland investigates what happens when we embark on a vast social experiment with little understanding of the ramifications. Copeland explores the culture of genealogy buffs, the science of DNA, and the business of companies like Ancestry and 23andMe, all while tracing the story of one woman, her unusual results, and a relentless methodical drive for answers that becomes a thoroughly modern genetic detective story. *The Lost Family* delves into the many lives that have been irrevocably changed by home DNA tests—a technology that represents the end of family secrets. There are the adoptees who’ve used the tests to find their birth parents; donor-conceived adults who suddenly discover they have more than fifty siblings; hundreds of thousands of Americans who discover their fathers aren’t biologically related to them, a phenomenon so common it is known as a “non-paternity event”; and individuals who are left to grapple with their conceptions of race and ethnicity when their true ancestral histories are discovered. Throughout these accounts, Copeland explores the impulse toward genetic essentialism and raises the question of how much our genes should get to tell us about who we are. With more than thirty million people having undergone home DNA testing, the answer to that question is more important than ever. Gripping and masterfully told, *The Lost Family* is a spectacular book on a big, timely subject.

### Why Evolution is True

In 2000, President Bill Clinton signaled the completion of the Human Genome Project at a cost in excess of \$2 billion. A decade later, the price for any of us to order our own personal genome sequence—a comprehensive map of the 3 billion letters in our DNA—is rapidly and inevitably dropping to just \$1,000. Dozens of men and women—scientists, entrepreneurs, celebrities, and patients—have already been sequenced, pioneers in a bold new era of personalized genomic medicine. The \$1,000 genome has long been considered the tipping point that would open the floodgates to this revolution. Do you have gene variants associated with Alzheimer's or diabetes, heart disease or cancer? Which drugs should you consider taking for various diseases, and at what dosage? In the years to come, doctors will likely be able to tackle all of these questions—and many more—by using a computer in their offices to call up your unique genome sequence, which will become as much a part of your medical record as your blood pressure.

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