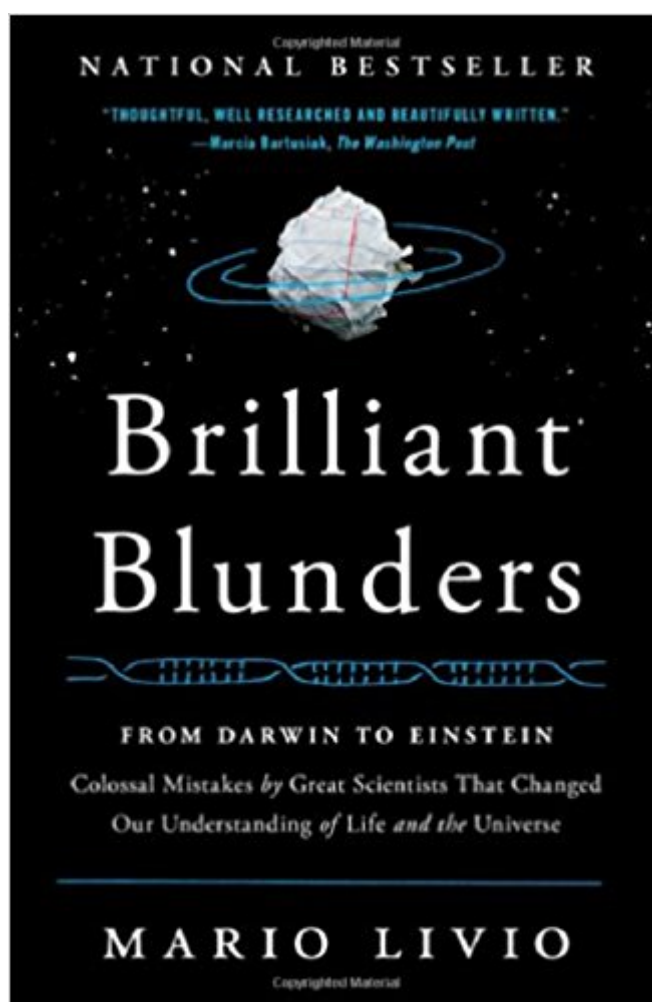


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# Brilliant Blunders: From Darwin To Einstein - Colossal Mistakes By Great Scientists That Changed Our Understanding Of Life And The Universe





## Synopsis

Drawing on the lives of five great scientists, this âœscholarly, insightful, and beautifully written bookâœ (Martin Rees, author of *From Here to Infinity*) illuminates the path to scientific discovery. Charles Darwin, William Thomson (Lord Kelvin), Linus Pauling, Fred Hoyle, and Albert Einstein all made groundbreaking contributions to their fieldsâœ but each also stumbled badly. Darwinâœs theory of natural selection shouldnâœt have worked, according to the prevailing beliefs of his time. Lord Kelvin gravely miscalculated the age of the earth. Linus Pauling, the worldâœs premier chemist, constructed an erroneous model for DNA in his haste to beat the competition to publication. Astrophysicist Fred Hoyle dismissed the idea of a âœBig Bangâœ origin to the universe (ironically, the caustic name he gave to this event endured long after his erroneous objections were disproven). And Albert Einstein speculated incorrectly about the forces of the universeâœ and that speculation opened the door to brilliant conceptual leaps. As Mario Livio luminously explains in this âœthoughtful meditation on the course of science itselfâœ (The New York Times Book Review), these five scientists expanded our knowledge of life on earth, the evolution of the earth, and the evolution of the universe, despite and because of their errors. âœThoughtful, well-researched, and beautifully writtenâœ (The Washington Post), *Brilliant Blunders* is a wonderfully insightful examination of the psychology of five fascinating scientistsâœ and the mistakes as well as the achievements that made them famous.

## Book Information

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## Customer Reviews

Astrophysicist and award-winning author Livio (*The Golden Ratio*) analyzes ruinous errors of five great scientific minds in the wake of their most prominent discoveries and how those errors have not only propelled scientific breakthroughs, but provide "insights...into the operation of the human mind." Summoning Charles Darwin, Lord Kelvin, Linus Pauling, Fred Hoyle, and Albert Einstein, Livio argues there is no progress without lessons in humility. These thinkers succumbed to moments of fear, pride, stubbornness, and doubt common to all "mere mortals"â "to the benefit of elucidating the evolution of life and the universe. Two-time Nobel prize-winning chemist Pauling's flub of basic chemistry catalyzed the discoveries of Watson and Crick; Hoyle, a cosmologist who displayed "pigheaded, almost infuriating refusal" to give up his thoroughly refuted "steady state theory", energized advanced studies of how we exist in space with his controversial ideas; and Einstein, "the embodiment of genius", refused to give up on his cosmological constant, "the most famous fudge factor in the history of science." With humor and precision, Livio reminds us: "Even the most impressive minds are not flawless; they merely pave the way for the next level of understanding." (May) --This text refers to an out of print or unavailable edition of this title.

â œMario Livio sets the discoveries of five great scientists who were also remarkable personalities in their social context, showing how they emerged from confusion and controversy. His archival research allows him to debunk several myths that have been given currency through less thorough biographies. You donâ™t need to be a scientist to be fascinated by this scholarly, insightful and beautifully written book.â • (Martin Rees, Astronomer Royal and author of *From Here to Infinity: A Vision for the Future of Science*)â œAfter reading Livio's account, I look on the history of science in a new way. In every century and every science, I see brilliant blunders.â • (Freeman Dyson *The New York Review of Books*)"Scientists make mistakes all the time, but those bumps in the road are often smoothed out in the legends that surround the greatest discoverers. . . . Thoughtful, well-researched and beautifully written, *Brilliant Blunders* offers a distinctive â " and far more truthful â " perspective on the journey to scientific discovery." (Marcia Bartusiak *The Washington Post*)â œEnlightening. . . . For many people, being a great scientist means being above error. . . . Livioâ™s book is a valuable antidote to this skewed picture. . . . Thanks to his deep curiosity, Livio turns *Brilliant Blunders* into a thoughtful meditation on the course of science itself." (Carl Zimmer *The New York Times Book Review*)â œIt is said that genius is the ability to make all possible mistakes in the least amount of time. Livioâ™s genius is to show us just how much those mistakes have taught us.â • (Adam Riess, Thomas Barber Professor of Physics and Astronomy, Johns Hopkins University, Nobel Laureate in Physics 2011)â œMario Livio wears many hats: scientist,

sleuth, storyteller. In *Brilliant Blunders*, a delightful intellectual synthesis, he reminds us that heâ™s also one of the best science writers in our galaxy.â• (Steven Strogatz, professor of applied mathematics, Cornell University, and author of *The Joy of X*)âœIn *Brilliant Blunders*, Mario Livio leaves no historical detail untold, as we re-walk the error-filled pathways along which human understanding of the universe slowly emerged.â• (Neil deGrasse Tyson, Astrophysicist, American Museum of Natural History, and author of *Space Chronicles: Facing the Ultimate Frontier*)Mr. Livio is a gifted storyteller. . . .[He] shows how science works partly by feeding on past mistakes: Once recognized, the errors sparked creativity in other scientists. An incorrect view of the world is not simply a mistake; it's a catalyst that leads to better understanding." (Samuel Arbesman *The Wall Street Journal*)âœOne of the most important things that distinguishes science from religion is that in science we (eventually) are happy to change our minds. This is called learning. As Mario Livio eloquently describes in this far-reaching and thoroughly enlightening book, many famous scientific advances involved either false starts or dead ends. In my own field, Einstein is purported to have said that inserting the cosmological constant into his equations of General Relativity was his âˆbiggest blunder.â™ In hindsight, as we find ourselves living in a Universe whose future may be determined by this quantity, most of us would now pay our eye teeth to have made such blunder!â• (Lawrence M. Krauss, Director of the Origins Project at Arizona State University and Foundation Professor in the School of Earth and Space Exploration)âœEntertaining accounts of how five celebrated scientists went wrong. . . . An absorbing, persuasive reminder that science is not a direct march to the truth.â• (Kirkus Reviews)"Astrophysicist Livio unmaskes the flaws in the work of some of our greatest scientific minds in this meditation on the winding, unpredictable path of discovery." (Anna Kuchment *Scientific American*)"Livio's usual knack at making sophisticated concepts accessible has been brought to bear on his book. . . . What comes through clearly, as is one of the author's stated intentions, is that errors are part and parcel of the process and that science progresses, not always despite them, but also through them. . . . With its illustrious characters, interesting ideas and those blunders to marvel at, the book makes a fascinating read." (Marianne Freiberger *Plus magazine*)"Wide ranging and entertaining, *Brilliant Blunders* might be picked up by readers who have been fooled into doing so by the notion of blunders, but they will certainly enjoy it for its brilliance." (Robert Schaefer *New York Journal of Books*)âœThe stories of how these blunders came about, and what happened next, are extremely well researched, and they shed a welcome, informative, entertaining and sometimes new light on science as a deeply human activity.â• (Len Fisher *Physics World*)

Livio shows the importance of collaboration of others in solving scientific inquiries, and how ego may get into the way of great discoveries through ignorance of other outside observations as it did with Kelvin, Houle and Pauling, or in the case of Einstein humility in believing his math actually explains many cosmological phenomena, or in the case of Darwin, where ignorance was bliss in his theory of evolution. He does a good job of explaining into laymen's terms the thought processes of each proposed hypothesis of these five brilliant scientists although the physics that explains Houle's and Einstein's blunders can become difficult to follow if one lacks a background in physics. As a science teacher I found it to be a good resource in helping understand many of the accepted discoveries of how the earth and the universe were formed and aged.

Engaging writing. A wonderful balance of enough science to be interesting without losing the amateur. One I'll keep to read again.

Yet to finish it but read 3-4 different topics...the writing style is pretty engrossing...I'll recommend this book who are interested in science history...some of the things will be hard to grasp for a layman, but the overall story is pretty easy to follow. This book I think tells us not to be afraid of making mistakes in life, because even the geniuses did :)

Thoughtful take on the process of imaginative inquiry. I'm always fascinated by the confident failure - like Linus Pauling. the "Lindbergh syndrome" confident contrariness from which great success builds the confidence for even greater blunders. The Darwin story is especially intriguing, though Livio never addresses just how Darwin reconciled the blunder in his own thinking. As for the Big Bang contradiction, this is probably the weakest of the brilliant blunder stories - something just seems missing and unresolved. Nevertheless a good read with interesting glimpses of Einstein, Darwin, and a somewhat more flamboyant perspective on Pauling.

Fascinating, but a difficult read. Requires considerable science background. Unusual approach. Not about serendipity, rather about the scientists best work and more about the background to their blunders.

There are so many misconceptions about science and those who dedicate their lives to its pursuit, it's refreshing to find a book that reveals the truth about scientists. Neither godlike paragons nor wacky misfits, the scientists portrayed here are quite human and their failings understandable.

There are times when the author gets a bit repetitive but, for the most part, it is a lively read that will hold any science fan's interest. If you think you know how science works, you really need to read this book.

The author has performed significant research, which is rare in itself. He often bounces from one subject to another, but patience brings the picture clear eventually. It is not easy to study astrophysics without mathematics, but Livio does an admirable effort. The lesson of human imperfection as related to these scientific greats might be disturbing to some, but is helpful to me as I realize that I sometimes can be in error.

The book is well written but got too deep for me. Not as easy a read as I had hoped

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