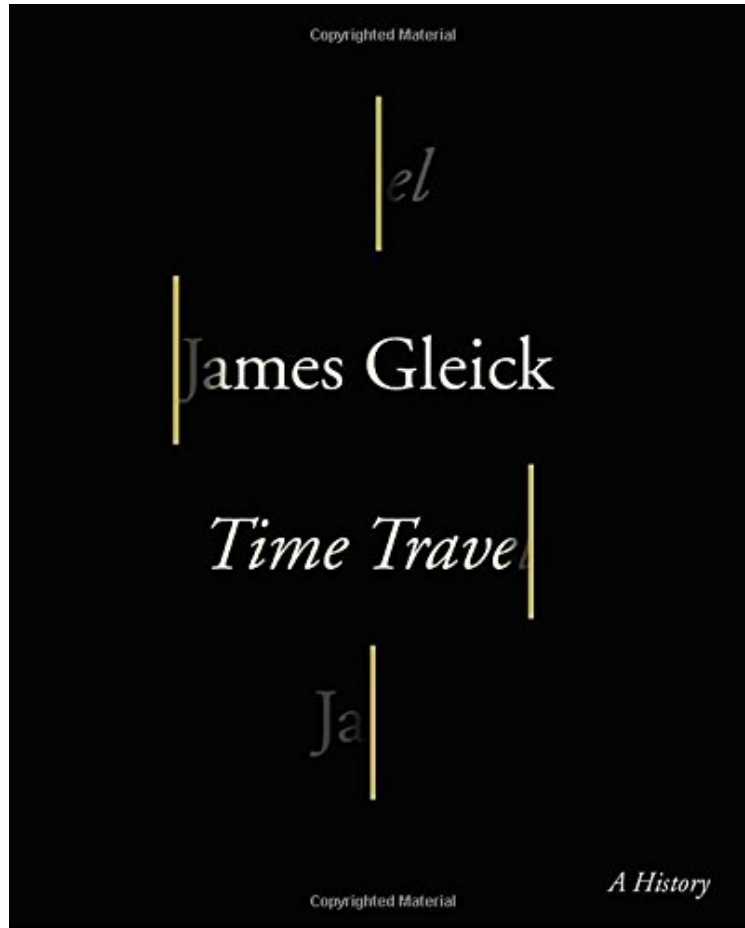


Time Travel: A History

James Gleick

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James Gleick : Time Travel: A History before purchasing it in order to gage whether or not it would be worth my time, and all praised Time Travel: A History:

78 of 80 people found the following review helpful. Good read but unlike Gleick's earlier work By Aran Joseph Canes As usual, Gleick writes about his subject, the cultural phenomenon of interest in time travel, in a insightful and engaging manner. Fans of Gleick's earlier works, however, should know that this book is very different from its predecessors. In Chaos, Gleick described a branch of science that only graduate physics would encounter and explained it to a wider audience. While his work on information science was more wide-ranging it followed a similar pattern. Gleick's biographies of Feynman and Newton explained their contributions to science to those without a technical background. Time Travel, on the other hand, primarily focuses on answering the interesting question, "Why has time travel so consumed the interest of readers of literature since the late 19th century while before it appeared only in hints and scattered fragments?" To answer this, Gleick engages in a thorough review of time-travel literature but only dips his toes into the actual science of time. In other words, the book is more an exploration of a branch of literature than a

non-technical introduction to a branch of science. Even so, *Time Travel* is a good read and I would recommend the book both to those familiar with Gleick's earlier work and those who have not enjoyed that particular pleasure. 0 of 0 people found the following review helpful. Is Time an Illusion? By Bob Miller Born in England in 1866, H.G. Wells's wrote his first novel, *The Time Machine* which was published in 1895. It was a success although critics treated it as a fantastic story and with rare exception, did not analyze the specter of time travel logically. In his book, *Time Travel*, author James Gleick sets out to rectify this unfortunate oversight and offers philosophical, scientific and general musings germane to the improbable if not whimsical possibilities of time travel. He explores a myriad of ideas, starting with the obvious that the core principles of science teach us that the world operates on the basis of time: People are born, age, and die-- it is all accomplished in a matter of time. The world relies on atomic clocks and Confusion about past and future cannot be tolerated. Although physicists believe that time is not absolute and can be manipulated (artificial timetables-- EST, CST, etc., When the Nazis occupied France, they ordered all the clocks moved forward, to Berlin time, it is still the rule. Gleick then muses about the impracticality of time travel. Could you go back in time and kill your parents thereby eliminating your future? If you changed your past, would you then lose free will in the future? Are we always living in the past-- the sun takes seconds to reach us, you can't put your toe in the same river twice. If you traveled to the past and met yourself, would you be the same person in the future? Are there parallel universes? Is there a fourth dimension called time? Is time an illusion? Are our feelings of sensation an illusion because the brain has already decided what our reactions are going to be before getting the feeling? (I added that one, it's not in the book :). After discussing our current digital revolution, and time manipulating, Gleick ends on a reassuring note: Death does not erase your life-- You lived-- you will always have lived. If you are a big fan of the movie or book, *The Time Machine*, this book isn't your answer-- it is mostly philosophical, and at times, hard to follow. 1 of 1 people found the following review helpful. Not up to the Gleick standard By Customer After looking forward to yet another interesting and insightful offering from James Gleick, reading this book was a disappointment to those (probably overly lofty) expectations. I enjoyed reading the previous efforts by Gleick which have been more science based. This book offered nothing new on a subject that is truly mind bending by its nature. You might as well just read HG Wells *The Time Machine* (again) rather than slog through this one. I would have thought Gleick might have touched on (at least) Feynman's concept of anti matter and time reversal, even from a philosophical point of view. But, I am at fault for misinterpreting what was apparently the point, namely a "History" of Time Travel conceptualization.

A time-jumping, head-tripping odyssey. The Millions A bracing swim in the waters of science, technology and fiction. Washington Post A thrilling journey of ideas. Boston Globe From the acclaimed author of *The Information and Chaos*, here is a mind-bending exploration of time travel: its subversive origins, its evolution in literature and science, and its influence on our understanding of time itself. The story begins at the turn of the previous century, with the young H. G. Wells writing and rewriting the fantastic tale that became his first book and an international sensation: *The Time Machine*. It was an era when a host of forces was converging to transmute the human understanding of time, some philosophical and some technological: the electric telegraph, the steam railroad, the discovery of buried civilizations, and the perfection of clocks. James Gleick tracks the evolution of time travel as an idea that becomes part of contemporary culture from Marcel Proust to Doctor Who, from Jorge Luis Borges to Woody Allen. He investigates the inevitable looping paradoxes and examines the porous boundary between pulp fiction and modern physics. Finally, he delves into a temporal shift that is unsettling our own moment: the instantaneous wired world, with its all-consuming present and vanishing future. (With a color frontispiece and black-and-white illustrations throughout)

A fascinating mash-up of philosophy, literary criticism, physics and cultural observation. Its witty . . . pithy . . . and regularly manages to twist its readers mind . . . Throughout the book [Gleick] displays an acute and playful sensitivity to how quickly language gets slippery when we talk about time . . . a wonderful reminder that the most potent time-traveling technology we have is also the oldest technology we have: storytelling. Anthony Doerr, *The New York Times Book (cover)* Exhilarating . . . Time travel has become a veritable theme park of playful attractions, which Mr. Gleick explores with infectious gusto. Michael Saler, *The Wall Street Journal* A grand thought experiment, using physics and philosophy as the active agents, and literature as the catalyst. Embedded in the book is a bibliography for the Babel of time a most exquisitely annotated compendium of the body of time literature. What emerges is an inquiry, the most elegant since Borges, into why we think about time, why its directionality troubles us so, and what asking these questions at all reveals about the deepest mysteries of human consciousness and about what Gleick so beguilingly calls the fast-expanding tapestry of interwoven ideas and facts that we call our culture...the kind of book that lodges itself in the imagination, planting seeds of ideas, insights, and revelations bound to go on blossoming for the remainder of this lifetime. Maria Popova, *Brainpickings* Like [David Foster] Wallace, Gleick is a wide-ranging enthusiast and a graceful explainer. one of the great charms of this book is its authors willingness to embrace multiple points of view and to credit art and experience as much as theory. Kate Tuttle, Los Angeles Times Extraordinary. Ultimately, *Time Travel* centers around a single question: Why do we need time travel? To find

the answer, Gleick brilliantly stitches together moments at seemingly disparate points in history: He goes from explaining the plot of an episode of Doctor Who in one sentence to revisiting the invention of the Cinematographe in 1890s France the next. But what could be a dizzying narrative is deftly handled. And that's because Gleick's adventure in time travel is, in the end, not about distinctions between past and future, but a love letter to the unending now.

Adrienne LaFrance, *The Atlantic*In his enthralling new book, James Gleick mounts H.G. Wells' time machine for an invigorating ride through the most baffling of the four dimensions. In these pages, time flies. John Banville, author of *The Sea*James Gleick is a master historian of ideasno one else can do what he does. Synthesis leads to elucidation leads to stunning, original insight. *Time Travel*, like so much of his work, is simply indispensable. Charles Yu, author of *How to Live Safely in a Science Fictional Universe**Time Travel* is another of James Gleick's superb, unclassifiable booksrich in obscure and illuminating information, laced with lyricism, wit, and startling and convincing insights. It is an exploration not only of the (theoretical) phenomenon of time travel but of our understanding of time itself.

Joyce Carol Oates *Magnificent*. A riveting history of an idea that changed us so profoundly, we forgot we had even been changed. But Gleick remembers. Lev Grossman, Books Editor of *TIME* and author of *The Magicians Trilogy*Against Kingsley Amis' skeptical assertion that time travel is inconceivable, Gleick adduces impressive evidence that the phenomenon has tantalized novelists, philosophers, poets, scientists, moviemakers, and even cartoonists as a transformative possibility. Readers follow the fictional Time Traveler that H. G. Wells sends into future centuries; track the gyrations of time-spanning thought that Borges unfolds in his labyrinthine tales; ponder the temporal cause-effect paradoxes that Bertrand Russell surmounts; and puzzle over the reversibility of time in the physics with which Einstein revolutionized science. Ultimately, readers discern behind the modern mania for the phenomenon a human craving for immortality that particularly in a secular age fosters this mania. Both piquant and profound.

Booklist *starred review* A dazzling voyage through the concept of time. Deeply philosophical and full of quirky humor The universe is like a river. It flows. (Or it doesn't, if you're Plato.) Gleick's journey through the fourth dimension is a marvelous mind bender. Publishers Weekly *starred review* Engaging [Gleick's] book resembles a salon where the guests include physicists (Richard Feynman and Albert Einstein), science-fiction writers (Robert Heinlein, Hugo Gernsback and the inevitable Isaac Asimov), philosophers (Richard Taylor), logicians (Kurt Gödel) and scientist-philosophers (Arthur Eddington), among many other articulate souls. Their discussions draw upon the theater (Tom Stoppard's *Arcadia*), TV series (*Doctor Who*) and movies (*La Jete*), as well as books of philosophy and works in theoretical physics. *Time Travel* presents a great read as well as a wide-ranging, rich list for further reading for anyone intrigued by the scientific romance of time travel. The Washington Post Illuminating and entertaining, there isn't a paragraph in Gleick's book without good sentences and fascinating information. John Lanchester, *The New York Times* Fascinating. Gleick's hybrid of history, literary criticism, theoretical physics, and philosophical meditation is itself a time-jumping, head-tripping odyssey, and it works so well. Even though Gleick can elucidate complex ideas into accessible language, he's even better at explicating notions that remain perplexing. *Time Travel* is as elegant and eloquent as it is edifying.

Jonathan Russell Clark, *The Millions* The consummate temporal tour guide, Gleick deftly navigates the twists and turns of our fascination with time travel, investigating its evolution in literature, exploring scientific principles that have hinted at or scotched the idea, and teasing apart the curious spell it cast across society with its suggestion of immortality. Intoxicating. The Guardian Far ranging, accessible, and witty, *Time Travel* tackles its elusive subject from unusual angles but with fine-tuned focus. Knowledgeable, curious and humane, Gleick proves to be the perfect tour guide for this mind-bending intellectual expedition into the past, present and future. San Antonio Express-News From Wells to Schrödinger to Twitter, [Gleick] doesn't miss a beat, and he imparts a wry appreciation for humorous detail, making him one of the most enjoyable science writers in the field. Another fantastic contribution from Gleick, whose lush storytelling will appeal to a wide range of audiences. Kirkus s Mind-blowing . . . A fascinating argument that the most important time is the present. *TIME Magazine* In *Time Travel*, James Gleick provides an absorbing history of the idea, eloquently elucidating the reasons for its enduring appeal. Within physics, Gleick captures some of the intellectual ferment in his account of the debate about whether time is an illusion. Within literature, he's particularly incisive in his account of alternative histories, which originated as an accident of time travel. *New Scientist* Gleick is particularly well equipped to explore how the idea of time travel evolved across the past century in science, literature, technology and philosophy. Far-ranging, lucid, accessible and witty, 'Time Travel' tackles its elusive subject from unusual angles but with fine-tuned focus. *SF Gate* Dazzling. The Boston Globe, Best Books of 2016 Isaac Newton's biographer takes a smart, scholarly look at this science fiction staple. With a little help from Gleick, you might finally understand *Interstellar*. *Esquire Magazine*, "Nine Books That You Need To Know" A brilliant, wise, insightful and mind-boggling look at the nature of time. The Missouriian A pleasurable romp over Wells' fourth dimension and polished Victorian machinery; golden age science-fiction authors such as Isaac Asimov, who provided the templates for modern treatments of time travel; and the *Doctor Who* franchise. Gleick also explores more highbrow offerings from writers such as David Foster Wallace and Jorge Luis Borges (who envisaged time as a Garden of Forking Paths), and filmmaker Chris Marker, whose 1962 sci-fi short *La Jete* inspired 1995 time-travel noir *12 Monkeys*. *Nature* An engaging and entertaining look at science that will always remain fiction. Its lucidly written, a breeze to read and erudite in assessing a vast range of literary and popular media treatments of time travel as dream and desire. *Science*

NewsA whirling polymathic joy rideIts a work of history that, in its attempt to buck chronology, dissolves the illusory distinctions between science and art, theory and fiction. Gleick reveals a unified culture connected by existential questions and desires to escape the bounds of time and space. Time Travel is most delightful, and fun, when Gleick pulls the lever and connects Everett and Jorge Luis Borges; Isaac Asimov and Augustine; Robert Heinlein and David Foster Wallace; and other thinkers separated, merely, by time and space. Joshua Alvarez, Brooklyn Rail Theres much to commend. Anyone who picks up Time Travel: A History will find quotes and witticisms galore, a plethora of absorbing historical footnotes and trenchant observations on humanitys relationship with time. A stunningly learned tourJoyous. Alvaro Zinos-Amaro, Tor.com Gorgeous. Joshua Kim, Inside Higher Ed I thoroughly enjoyed it. An entertaining and informative read, and also a fantastic resource for anyone interested in time travel stories. Jonathan H. Liu, GeekDad.com About the Author JAMES GLEICK (around.com) is our leading chronicler of science and technology, the best-selling author of Chaos: Making a New Science, Genius: The Life and Science of Richard Feynman, and The Information: A History, a Theory, a Flood. His books have been translated into thirty languages. Excerpt. Reprinted by permission. All rights reserved. ONE Machine A man stands at the end of a drafty corridor, a.k.a. the nineteenth century, and in the flickering light of an oil lamp examines a machine made of nickel and ivory, with brass rails and quartz rods a squat, ugly contraption, somehow out of focus, not easy for the poor reader to visualize, despite the listing of parts and materials. Our hero fiddles with some screws, adds a drop of oil, and plants himself on the saddle. He grasps a lever with both hands. He is going on a journey. And by the way so are we. When he throws that lever, time breaks from its moorings. The man is nondescript, almost devoid of features grey eyes and a pale face and not much else. He lacks even a name. He is just the Time Traveller: for so it will be convenient to speak of him. Time and travel: no one had thought to join those words before now. And that machine? With its saddle and bars, its a fantasticated bicycle. The whole thing is the invention of a young enthusiast named Wells, who goes by his initials, H. G., because he thinks that sounds more serious than Herbert. His family calls him Bertie. He is trying to be a writer. He is a thoroughly modern man, a believer in socialism, free love, and bicycles. A proud member of the Cyclists Touring Club, he rides up and down the Thames valley on a forty-pounder with tubular frame and pneumatic tires, savoring the thrill of riding his machine: A memory of motion lingers in the muscles of your legs, and round and round they seem to go. At some point he sees a printed advertisement for a contraption called Hackers Home Bicycle: a stationary stand with rubber wheels to let a person pedal for exercise without going anywhere. Anywhere through space, that is. The wheels go round and time goes by. The turn of the twentieth century loomed a calendar date with apocalyptic resonance. Albert Einstein was a boy at gymnasium in Munich. Not till 1908 would the Polish-German mathematician Hermann Minkowski announce his radical idea: Henceforth space by itself, and time by itself, are doomed to fade away into mere shadows, and only a kind of union of the two will preserve an independent reality. H. G. Wells was there first, but unlike Minkowski, Wells was not trying to explain the universe. He was just trying to gin up a plausible-sounding plot device for a piece of fantastic storytelling. Nowadays we voyage through time so easily and so well, in our dreams and in our art. Time travel feels like an ancient tradition, rooted in old mythologies, old as gods and dragons. It isnt. Though the ancients imagined immortality and rebirth and lands of the dead time machines were beyond their ken. Time travel is a fantasy of the modern era. When Wells in his lamp-lit room imagined a time machine, he also invented a new mode of thought. Why not before? And why now? #### The time traveller begins with a science lesson. Or is it just flummery? He gathers his friends around the drawing-room fire to explain that everything they know about time is wrong. They are stock characters from central casting: the Medical Man, the Psychologist, the Editor, the Journalist, the Silent Man, the Very Young Man, and the Provincial Mayor, plus everyones favorite straight man, an argumentative person with red hair named Filby. You must follow me carefully, the Time Traveller instructs these stick figures. I shall have to controvert one or two ideas that are almost universally accepted. The geometry, for instance, that they taught you at school is founded on a misconception. School geometry Euclids geometry had three dimensions, the ones we can see: length, width, and height. Naturally they are dubious. The Time Traveller proceeds Socratically. He batters them with logic. They put up feeble resistance. You know of course that a mathematical line, a line of thickness nil, has no real existence. They taught you that? Neither has a mathematical plane. These things are mere abstractions. That is all right, said the Psychologist. Nor, having only length, breadth, and thickness, can a cube have a real existence. There I object, said Filby. Of course a solid body may exist. All real things So most people think. But wait a moment. Can an instantaneous cube exist? Dont follow you, said Filby [the poor sap]. Can a cube that does not last for any time at all, have a real existence? Filby became pensive. Clearly, the Time Traveller proceeded, any real body must have extension in four directions: it must have Length, Breadth, Thickness, and Duration. #### Aha! The fourth dimension. A few clever Continental mathematicians were already talking as though Euclids three dimensions were not the be-all and end-all. There was August Mbius, whose famous strip was a two-dimensional surface making a twist through the third dimension, and Felix Klein, whose loopy bottle implied a fourth; there were Gauss and Riemann and Lobachevsky, all thinking, as it were, outside the box. For geometers the fourth dimension was an unknown direction at right angles to all our known directions. Can anyone visualize that? What direction is it? Even in the seventeenth century, the English mathematician John Wallis, recognizing the algebraic possibility of higher dimensions, called them a Monster in Nature, less possible than a Chimaera or

Centaure. More and more, though, mathematics found use for concepts that lacked physical meaning. They could play their parts in an abstract world without necessarily describing features of reality. Under the influence of these geometers, a schoolmaster named Edwin Abbott published his whimsical little novel *Flatland: A Romance of Many Dimensions* in 1884, in which two-dimensional creatures try to wrap their minds around the possibility of a third; and in 1888 Charles Howard Hinton, a son-in-law of the logician George Boole, invented the word tesseract for the four-dimensional analogue of the cube. The four-dimensional space this object encloses he called hypervolume. He populated it with hypercones, hyper pyramids, and hyperspheres. Hinton titled his book, not very modestly, *A New Era of Thought*. He suggested that this mysterious, not-quite-visible fourth dimension might provide an answer to the mystery of consciousness. We must be really four-dimensional creatures, or we could not think about four dimensions, he reasoned. To make mental models of the world and of ourselves, we must have special brain molecules: It may be that these brain molecules have the power of four-dimensional movement, and that they can go through four-dimensional movements and form four-dimensional structures. For a while in Victorian England the fourth dimension served as a catchall, a hideaway for the mysterious, the unseen, the spiritual anything that seemed to be lurking just out of sight. Heaven might be in the fourth dimension; after all, astronomers with their telescopes were not finding it overhead. The fourth dimension was a secret compartment for fantasists and occultists. We are on the eve of the Fourth Dimension; that is what it is! declared William T. Stead, a muckraking journalist who had been editor of the *Pall Mall Gazette*, in 1893. He explained that this could be expressed by mathematical formulas and could be imagined (if you have a vivid imagination) but could not actually be seen anyway not by mortal man. It was a place of which we catch glimpses now and then in those phenomena which are entirely unaccountable for by any law of three-dimensional space. For example, clairvoyance. Also telepathy. He submitted his report to the *Psychical Research Society* for their further investigation. Nineteen years later he embarked on the *Titanic* and drowned at sea. By comparison Wells is so sober, so simple. No mysticism for him the fourth dimension is not a ghost world. It is not heaven, nor is it hell. It is time. What is time? Time is nothing but one more direction, orthogonal to the rest. As simple as that. It's just that no one has been able to see it till now till the *Time Traveller*. Through a natural infirmity of the flesh . . . we incline to overlook this fact, he coolly explains. There is no difference between Time and any of the three dimensions of Space except that our consciousness moves along it. In surprisingly short order this notion would become part of the orthodoxy of theoretical physics.