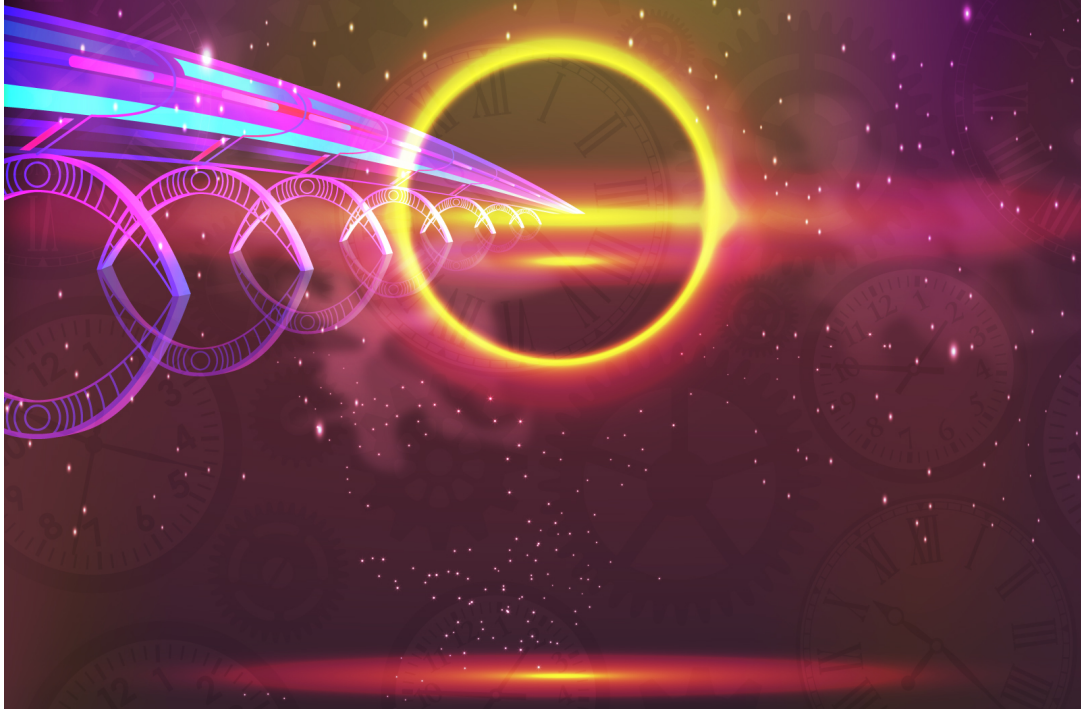


# SUMMARY TIME TRAVEL

JAMES GLEICK



# **Summary of Time Travel by James Gleick**

Written by Alyssa Burnette

Time Travel (2016) takes us on a journey through the history of time travel, inviting us to explore the origin of the concept, its developments through the years, and its impact on our lives today.

Introduction	6
How Long Has the Idea of Time Travel Been Around?	7
The Rules of Time Travel	8
Scientists Shaped The Way We Think About Time	10
Time Travel Creates Paradoxes	12
Our Brains Are Agents of Time Travel	14
Final Summary	16



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# Introduction

I devoured time travel novels as a kid. My favorite was a series simply entitled *The Time Travelers* and I adored it because it invited me to imagine what might happen if someone from the present day could travel back in time to the nineteenth century and vice versa. Through the simple context of young adult fiction, these books enabled me to explore questions of gender roles, technology, and social change that both fueled my imagination and my understanding of the world. And because the concept of time travel was so exciting to me, I didn't even realize I was learning and engaging in critical thought, both things that a lot of kids might not consciously choose to do.

But although we often outgrow many childhood fascinations, the coolest thing about time travel is its universal capacity to astound and enrapture children and adults alike. Our fascination with it even goes far beyond modern day, as you'll see in this summary. You'll also learn some other cool facts like:

- How memory alters the past, present, and future
- How books facilitate time travel and
- Why cyberspace allows time travel in its own way

# How Long Has the Idea of Time Travel Been Around?

H.G. Wells' acclaimed novel *The Time Machine* can be credited with opening the portal that introduced us to time travel. Published in 1895, the story documents the journey of a man known only as "The Time Traveler" who builds a machine that allows him to move between the past and the future. And in addition to capturing our imaginations, this story also introduced an important concept that changed our understanding of time. Because it presents time as something that people could sail through, it revolutionized the nineteenth century conceptualization of time as a one-way street. Because people had previously viewed our relationship with time as going only in one direction with the understanding that you could only go forward, never back, and only at one speed, Wells' concept was a game-changer.

It tapped in to the curiosity and excitement for the future that characterized life at the end of the nineteenth century and that eagerness infused the beginning of the twentieth century as well. In an age of tremendous scientific and technological growth, people were beginning to believe in things they'd previously considered to be impossible-- even time travel. The ability to think of the past, present, and the future as being entirely different-- yet accessible-- spheres captured the cultural imagination. And, in short, that's what generated our fascination with time travel today!

# The Rules of Time Travel

However, once time travel was introduced as a concept, it created a new set of questions that people weren't entirely prepared for. As people began to contemplate what it would be like to travel in time, they started asking questions like, "Could you travel forward in time and meet your future self? What would happen if two versions of you met each other? Would it be possible to go back or forward in time and change the course of events that defined your life?" And because we naturally get a little overwhelmed if things are too chaotic even in our imaginations, people started to work out some rules for time travel. Although these rules rarely came from anyone official (they mostly stemmed from writers and thinkers who published their speculations in pulp fiction magazines), a structure began to emerge nonetheless.

One "rule" was that time travel must occur so quickly that you wouldn't be able to touch or alter anything on your journey. Although you would be able to see everything going on around you, you would pass through time unnoticed by anyone else to prevent you from affecting anybody else's life. But then there was the question of how the self would be altered by time travel. What would your future self be like? Would it still be more or less "you?" Science fiction writers of the day suggested that each self you encountered through time travel-- whether in the past or the future-- would be a separate entity. So, for example, there would be the you you are today-- 2020 you-- and a 2030 self that's totally different from her.

And last-- but definitely not least-- arises the question of free will. The concept of time travel allowed people to question whether or not our lives are predetermined, meaning that fate has already been decided for us and we can't change that. So, if we went forward in time and saw our future self, would we discover that we've been following a prescribed path all along? Or do small events throughout the course of your life have the power to change your future's direction? And if time travel gives you the ability to go back and correct past mistakes, what does that do to your future? What if we

could go back and pass that test we failed in high school, earning back the grades that would allow us to get accepted to our dream school? What if we could undo a major decision we regret? Should we do this? Or does it render all our personal development and learning experiences irrelevant?

# Scientists Shaped The Way We Think About Time

H.G. Wells might have started the time travel ball rolling with his work of fiction, but once the craze began, scientists like Albert Einstein also helped to shape the concept as we know it today. To give you a quick refresher course on what you probably learned in your high-school science class, Einstein's theory of relativity posits that the speed of light is constant, no matter how quickly you travel which direction you're moving in. This introduced the opportunity for people to think of time as being relative. Or, in other words, people can experience time differently because the faster you travel, the slower time moves. By this principle, a person in a rocket would be traveling at almost the speed of light and thus would experience time more slowly than someone standing on the ground.

This concept not only revolutionized our understanding of science but our understanding of time travel as well. Expounding on Einstein's theory, future generations of scientists formed hypotheses that also examine our perception of time. One notable idea is the Multiverse theory which has been popularized through superhero films like Ant Man and The Avengers and which posits that there are an infinite number of parallel universes. In other words, according to this theory, there's a universe where you studied for your test and one where you didn't, which also means that there are infinite versions of yourself. And if that sounds pretty wacky, just take a look at the way these theories have impacted our understanding of memory and the philosophy of time.

One of the current leading debates on time travel and memory suggests that, because the human memory is imperfect, each time you remember something, you're actually altering the story of both the past and the future. That's because the way you remember things re-writes the narrative that you use to form your understanding of yourself. For example, if you forget that you went to a party instead of staying home to study for a test, you're altering the concept of who you believe you are. Because, thanks to that deleted memory, you don't see yourself as somebody who neglected your

responsibilities; now, you're suddenly a responsible person with the right priorities!

This ability to construct alternate versions of ourselves is a perfect-- and personally accessible-- extension of the multiverse theory because it helps us wrap our heads around the fact that different versions of ourselves can exist even in our own minds. Breaking down that concept can be really helpful for our understanding of time travel because most people struggle with the idea of time being relative. We have trouble wrapping our minds around concepts like the Multiverse theory because unless we live in a sci-fi novel, time really does move at the same speed and the same direction for all of us.

# Time Travel Creates Paradoxes

A paradox is a statement which seems to be absurd or self-contradictory but actually turns out to be true under close investigation. Time travel creates a variety of paradoxes like, if you went back in time and murdered your own grandfather, would you disappear? But then technically, if that murder meant you never existed, you couldn't kill your own grandfather anyway. This is just one example of a time travel paradox that can be really hard to wrap our heads around, but it's by no means the only one. And interestingly enough, most time travel paradoxes have to do with going back in time, not going forward.

For example, the butterfly effect suggests that even the smallest events can create significant consequences in the future. If, for instance, a butterfly flaps its wings on one side of the planet, could the tiny burst of wind it creates ripple into a violent storm thousands of miles away? And if this is true for a butterfly, surely it's even more so for human lives. For example, let's take one of the most commonly debated questions of time travel: what would happen if you went back in time and killed baby Hitler? How different would the world be today? With the absence of Hitler, there would be no World War II, no Cold War, and no United Nations. All the lives lost on both sides of the war and all those who died in the Holocaust would have gone on living. What changes would this bring about in the world?

Questions like this are so fascinating that they've even been debated among the world's leading mathematicians and physicists as they attempt to determine whether or not time travel could truly be possible. Austrian logician Kurt Godel, for example, posited that time travel was possible and could be achieved through the construction of the right mathematical formula. Arguing that universes with closed timelike curves could exist, he suggested that you could think of these curves as time loops and that it was theoretically possible to ride these loops through time. However, other leading physicists like Stephen Hawking disagreed. Hawking asserted that

if time travel were possible in actuality, someone would have figured it out already and we would now be surrounded with time-traveling tourists.

# Our Brains Are Agents of Time Travel

So, now that you know a bit about the history of time travel, let's take a look at what it could mean for us today. Because although we've been looking at it as a theoretical concept which serves as the gateway to a physical experience, what if it's something more than that? What if time travel isn't a journey we take through a portal but rather an encounter that occurs in our minds? That possibility would account for the value of literature and memory and the interactive experience that engages our imaginations. That's because reading is predicated on the ability to reach back into the past and access what someone thought at an earlier time.

Whether it's your favorite novel or a textbook or a Facebook message, a writer who puts words down on a page is already thinking ahead, imagining the readers who will encounter their words in the future. That means that sometimes, you might be reading back in time to 1864 or to two seconds ago when your friend texted you. But either way, you're engaging with the future. Memory functions the same way, because when you reach back into your memory to conjure your grandmother who passed away or fond memories of someone you dated, you're mentally going back in time.

And because the human memory is imperfect, as we discussed before, this also means that-- for good or bad-- we have the power to alter our memories however we want. We can choose to forget about a terrible argument we had, instead focusing on the positive aspects of our relationship with that person. Or we can remember only the negative, opting to forget about all the good moments we shared. In this respect, we literally possess the ability to alter the past for ourselves.

The internet also presents some fascinating new developments in time travel, especially through the prevalence of social media. Because when you go back through your Instagram feed and untag friends or delete pictures, it's almost as if you're erasing that moment from your past. Likewise, you can plan for the future by inviting friends to events next year and displaying

your interest in upcoming plans. Facebook's "memories" feature also helps you immortalize and access the past through resurrecting old photos with friends and remind you both of previous experiences. And because interaction on the internet seems to occur at warp-speed, we now have the power to access the past, present, and the future at our fingertips. Thus, in this respect, the internet has become its own form of time travel.

But perhaps what's even more interesting is the fact that these advances in technology illustrate a shift in our time travel interests. Where people in the nineteenth century were primarily intrigued by the future, today many of us are more concerned with returning to the past. Whether it's our curiosity about seeing what life was like in a different age or our interest in reconnecting with "the good old days," we often romanticize the past through the resurgence of retro and vintage fashions and popular television programs that are set in the past. Whether we're simply a little anxious about plunging forward into the unknown or we want to learn from the past to avoid making its mistakes, today we're more eager to re-engage with days gone by than generations before us have been. And with our improved abilities to access the past, the present, and the future, we have the hope of creating a brighter tomorrow.

## Final Summary

Time travel is a compelling mind puzzle that's captivated the human imagination for more than a century. Since its development in the nineteenth century, it has been shaped by our understanding of fiction, science, and technology and it possesses a unique ability to make us see the world differently. Today, our understanding of time travel is changing as we contemplate the possibility that it might not occur through a physical experience in which we're able to interact with the nineteenth century or experience the future in the year 3000. Instead, it's possible that our relationship with time travel might be more cerebral and be facilitated by an interaction with artifacts from the past such as literature and media.



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