



Einstein's Dreams

Alan Lightman

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A modern classic, *Einstein's Dreams* is a fictional collage of stories dreamed by Albert Einstein in 1905, when he worked in a patent office in Switzerland. As the defiant but sensitive young genius is creating his theory of relativity, a new conception of time, he imagines many possible worlds. In one, time is circular, so that people are fated to repeat triumphs and failures over and over. In another, there is a place where time stands still, visited by lovers and parents clinging to their children. In another, time is a nightingale, sometimes trapped by a bell jar.

Now translated into thirty languages, *Einstein's Dreams* has inspired playwrights, dancers, musicians, and painters all over the world. In poetic vignettes, it explores the connections between science and art, the process of creativity, and ultimately the fragility of human existence.

Einstein's Dreams Details

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Author : Alan Lightman

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From Reader Review Einstein's Dreams for online ebook

Michael says

This was for me a refreshing and delightful read on alternative conceptions of time, borne out of playful thought experiments set among the residents of the city of Berne Switzerland in 1908. These permutations are alternated with interludes from the daily life of Einstein, who was then using his free time as a patent office worker to develop his Special Theory of Relativity, which demands of us to conceive of time as just another dimension in the space-time continuum. Most will have heard of his thought experiments such as illustrating conflicting perceptions of time by observers on a train or at a station as it travels by near the speed of light. The vignettes in this short book are extreme extensions of this approach which draw in the human context and reactions to the various logical and often absurd possibilities.

For example, how might society adapt to knowledge that people living at higher altitudes, which has less gravitational pull from the earth, live longer. Lightman imagines a fad of the wealthy putting dwellings on stilts or on mountains. Given that those in motion experience a slowing of time, might a similar cultural focus on longer life lead to a society where they set their homes and businesses in constant motion on train tracks? The silliness of such scenarios motivated by gaining seconds out of a lifetime doesn't hinder the pleasure of such fantasies. Other conceptions strike closer to everyday experience, such a personalities who value events of the past, present, or future to an excessive degree. It is easy to see how different emphases can vary with a person's stage in life or age. And we all know people who live totally by schedules of clock time and others who drift along impervious to such restrictions, and some who mark time on a slower than others of a more hyperkinetic mentality. What if temporal reality was actually linked to individual perspectives? A fast paced person would seem to be one who time travels on ahead of fellow time turtles. And if each day we awoke with no past or with no future, could on imagine adapting, finding a way to truly live in a present with only a past or future.

These poetic essays and philosophical fantasies have their closest precedents in the work of Borges and Calvino. Once you've walked these strange mental pathways, it will be hard to see your life in time the same again.

Manny says

In this world, a scientific theory is a game. Scientific gamers spend their lives investigating new strategies, tactics, opening variations. Most gamers work on established games - chess, whist, electromagnetism - but every now and then someone invents a new game.

The Institut für Spielforschung on Hochschulstrasse in Bern is in the middle of hosting an international games conference. Gamers have come from a dozen countries to present the results of their latest researches. In the main auditorium, Professor Lasker is reading a paper entitled "Some Remarks on the Queen's Gambit Declined". Further down the hall, the Symposium on Squeezes and Endplays is being attended by some of the world's foremost card theorists.

In a small room down in the basement, a junior patent clerk and amateur games enthusiast is explaining the game he has recently invented. Only a dozen people have turned up. When he has finished, there are some

hostile questions: one person goes as far as asking whether the rules even make sense. During the interval, he asks the patent clerk if they could try a practice session. The clerk takes out a board and sets up the pieces.

They play four moves, and the clerk suddenly announces checkmate. "I don't understand!" says the skeptic ironically. But, a moment later, he finds to his surprise that he does. The clerk's game is more interesting than he had first realized.

In this world, a scientific theory is a painting. There is a long tradition of scientific art, which has created a rich and fertile vocabulary of visual metaphors.

Scientific artists belong to many different competing schools. Some of the more accessible pictures look like religious icons, filled with angels and gold leaf. Even laymen who understand nothing about science can look at them and feel momentarily comforted and uplifted. More knowledgeable people, who see them displayed in churches and museums, like to show off their learning and explain to their less well-informed friends what each halo and wing is meant to signify. This information is also imparted by school teachers to their students, who need to remember it in order to pass their yearly tests.

Other works of scientific art are less obvious in meaning. They consist of abstract forms, smudges of color, objects apparently flung together without any purpose or unifying theme. Most modern compositions belong to this family. Opinion is divided as to their worth. Some people say that they embody the very essence of science, others that they are a simple fraud.

The Kunstmuseum has a display of these avante-garde pieces. A young couple are standing in front of one of the less prominent canvases, which contains a few colored shapes arranged in a symmetrical pattern. The boy finds nothing to hold his attention, but the girl stops and looks at it carefully from several different angles.

"I have never seen anything like it before," she murmurs, and takes her glasses out of her handbag.

"So what's special about it?" asks her lover. He is disappointed that she is now going to wear her glasses; he thinks they make her less desirable.

She does not answer, but continues to study the painting.

In this world, a scientific theory is a series of dreams...

Amira Mahmoud says

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Riku Sayuj says

Some of the best fun I have had in recent years of reading came in the two hours it took me to read this (including frantic back-tracks and hop-skips) fantastic book. Time is the hero of this collection and comes veiled in every twisted garb we can conceive, or rather, that Einstein can dream up. Einstein in his mad

canter towards discovering the most revolutionary idea in science tumbles right down an imaginary wonderland in this book.

What comes out of the recesses of Einstein's brooding on the nature of time and its relation to our lives is a montage of dreams that stretch our imagination to its limits. Time goes backwards, becomes personal, loops in on itself, slows down and speeds up according to your speeds and even stops altogether in his various dreams. But in the process we also see our own natures reflected in these bizarre behaviors that Einstein (or rather Lightman) subjects our protagonist to.

While each of the 'worlds' are immensely entertaining and thought-provoking, the real crux of the book comes out in the interludes, which are the only times we meet the dreamer - Einstein. The book is an exploration of the twists and turns of the creative process, of the blind alleys and the arcane notions, the tomfoolery and the circus contortions that the creative imagination has to be twisted to before a coherent idea emerges.

Of the dreams, numbering around thirty, some are particularly imaginative while others are variations on earlier themes. At first I was disappointed to encounter these variations and slight modifications, until I realized that Einstein, the dreamer/thinker, has to revisit ideas and try these mutations before he can proceed with them or discard them. Some of the ideas had to be short, some elaborate, some gripping, some boring and some outlandishly silly.

But through it all, the constant feeling, almost magical, of being part of this evolution of thought and of peering into the wildest musings (even if imagined) that led to the conception of time as we know today makes the book a treasure to be revisited and indulged in at every opportunity.

Did I mention that I read the book three times today?

lucke1984 says

Exquisite, Everyone should read this book, everyone should give this book away, it should be thrown from rooftops and forced upon youngsters. I will not venture to commingle a necessarily clunky and didactic summary with the poetic prose that is as much about the feeling stirred from reading each individual word than anything a summary could attempt. Suffice it to say that this book is excellent, beautiful and amazing, if a book is universally capable of changing your life... if only for a moment... this is such a book.

Teresa says

Lightman -- interesting that his surname evokes Einstein -- has written a seemingly innocuous but profound little book. As I went through my daily chores today, any words rising to the surface of my consciousness as I thought of the review I would be writing later (which is now; though that 'now' exists no longer) sounded like cliches, easy to speak of Time in that way, as everything we say, think and do is full of references to Time and can be done only in Time.

Lightman's dream about the world (every 'world' is a version of Einstein's Berne) in which everyone is immortal immediately reminded me of the movie *Zardoz*. I saw it when I was in college in the early 80s and

in the so-called cold equations of modern physics.

On this late afternoon, in these few moments while the sun is nestled in a snowy hollow of the Alps, a person could sit beside the lake and contemplate the texture of time. Hypothetically, time might be smooth or rough, prickly or silky, hard or soft. But in this world, the texture of time happens to be sticky. Portions of towns become stuck in some moment of history and do not get out. So, too, individual people become stuck in some point of their lives and do not get free.

WHAT IF time can speed up or slow down, stop like a stalled engine or skip seconds ahead like a child playing hopscotch? What if time moves backward instead of forward, or becomes transparent to the eye of the beholder, allowing glimpses of the future, or becoming opaque and limiting the experience to the present moment only? What if time moves faster as you go up in altitude, like the opposite of gravity? What if time moves in random waves like the clouds above the alps or along predestined paths like a tramway? How will this fickleness of time alter the lives of the people living in one of these alternate, parallel universes? Coming back to that world of stalled time:

The tragedy of this world is that no one is happy, whether stuck in a time of pain or of joy. The tragedy of this world is that every one is alone. For a life in the past cannot be shared with the present. Each person who gets stuck in time gets stuck alone.

Lightman translates all these possibilities into the waking dreams of a genius physicist, weaving into the novel biographical notes and the sights, the history of Bern- the city where Einstein developed his theory of relativity. Wouldn't you rather read a book about the misadventures of time travellers than study differential equations? I wish my physics teacher had given me this novel as homework instead of that formula that covered half the blackboard in the classroom.

Depending on the speed, a person in a fast house could gain several minutes on his neighbors in a single day. This obsession with speed carries through the night, when valuable time could be lost, or gained, while asleep. At night, the streets are ablaze with lights, so that passing houses might avoid collisions, which are always fatal. At night people dream of speed, of youth, of opportunity.

Who can refute Lightman's arguments that time moves differently for different people? To some, it is a snail, a Sunday afternoon spent alone when the phone never rings and the night refuses to come. To others, there are not enough seconds in a day to do all the things they want to do, to meet all the people they love and to read all the books that deserve to be read...

What if time stretches unbroken into infinity and people live forever? *"Strangely, the population of each city splits in two: the Latters and the Nows."* The Latters are masters of procrastination: why do anything today, when you will have an infinite number of tomorrows to start a job, a project, a life... *"The Nows are constantly reading new books, studying new trades, new languages. In order to taste the infinities of life, they begin early and never go slowly. And who can question their logic? The Nows are easily spotted. They are the owners of cafes, the college professor, the doctors and nurses, the politicians, the people who rock their legs constantly whenever they sit down. They move through a succession of lives, eager to miss nothing.*

And to some precious few, time is alive with possibilities and wonder, and they dream for us a new universe, a universe dancing to the secret music of celestial spheres:

In the middle of a room with books on tables, a young man stands and plays his violin. He makes gentle melody. And as he plays, he looks out to the street below, notices a couple close together, looks at them with deep brown eyes, and looks away. He stands so still. His music is the only movement, his music fills the room.

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Some readers might find the style of presentation familiar. I was struck by the similarities with Italo Calvino, especially with "**Invisible Cities**" and "**Cosmicomiche**". When I reviewed the latter, I described it as what happens when you let a poet loose in a room full of physics manuals. Alan Lightman approaches the subject from the opposite side, a perfect mirror image of Calvino : a scientist who has the sensibility and the way with metaphor of a poet. Together, they arrive at a serendipitous midpoint where science becomes fun and adventurous, where numbers become living people breathing, running, loving, dreaming. Quick or slow, time stops for nobody, and in the final pages of his unique novel, Lightman echoes the wisdom of the ancients and invites us to seize the day and enjoy being alive:

In a world where time is a sense, like sight or like taste, a sequence of episodes may be quick or may be slow, dim or intense, salty or sweet, causal or without cause, orderly or random, depending on the prior history of the viewer. Philosophers sit in cafes on Amthausgasse and argue whether time really exists outside human perception. Who can say if an event happens fast or slow, casually or without cause, in the past or the future? Who can say if events happen at all? The philosophers sit with half-opened eyes and compare their aesthetics of time.

also,

Indeed, each man and each woman desires a bird. Because this flock of nightingales is time. Time flutters and fidgets and hops with these birds. Trap one of these nightingales beneath a bell jar and time stops. The moment is frozen for all people and trees and soil caught within.

In truth, these birds are rarely caught. The children, who alone have the speed to catch birds, have no desire to stop time. For the children, time moves too slowly already. They rush from moment to moment, anxious for birthdays and new years, barely able to wait for the rest of their lives. The elderly desperately wish to halt time, but are much too slow and fatigued to entrap any bird. For the elderly, time darts by much too quickly. They yearn to capture a single minute at the breakfast table drinking tea, or a moment when a grandchild is stuck getting out of her costume, or an afternoon when the winter sun reflects off the snow and floods the music room with light. But they are too slow. They must watch time jump and fly beyond reach.

Highly Recommended!

Lena says

I don't remember this book well enough to write a full review. But over a decade after reading it, one of the ideas presented in it has stayed with me. That idea was that there are people who function according to the rhythms of their bodies, and those who function according to the rhythms of the clock. The book suggested that a person can be one or the other, but not both. At the time I read it, I was in the process of shifting away from my clock-based life, and things have never quite been the same since.

Rowena says

I had an awful Physics teacher at University, but one thing he was good at was getting the class to understand Einstein's Theory of Relativity, which has always fascinated me.

This book was brilliant. Imagine a world where time is a circle. Or a world where cause and effect are erratic. Or a world where time is not continuous. These are a few of the worlds Einstein dreams up while he's working on his Theory. Time is definitely a central theme in this book and few will be able to look at time (or life) in the same way after reading this book.

I was impressed by how creatively Lightman used the different concepts of time in his little vignettes. This book has compelled me to look for fiction written by scientists. A very unique, intelligent and philosophical read.

J.G. Keely says

There are few things more disappointing than seeing an author take an idea that should fascinate and surprise us, and reducing it until it is little more than a dull blip. In the process of trying to render them accessible to his audience, he stripped from them anything that might be really challenging or thought-provoking. In the end, his writing simply lacked the subtlety and power required.

The work is structured like that of other authors seeking aphoristic profundity, like Borges, Calvino, where each little story presents a different view of the world, a fantastical idea that twists our reality and how we see it, and while all these different views of the world might seem incompatible and impossible, we come to realize that each one represents a real way of looking at the world and that, when we take them all together, they present a grand view of all the strange and contradictory ways that we do look at our world, from person to person and moment to moment.

It was a style taken from the metaphysical poet, like Petrarch, who created a poetic cycle where the combined meaning of all the poems, when taken together, was much larger than the mere summation of its parts. But unlike those writers, Lightman's stories lack profundity, they are just too small and safe to be truly affecting.

The first and most obvious problem is the voice and tone of the stories, which is always the same throughout. There are no changes in pacing or emotional quality, and so they all start melting together into an undifferentiated mass. We get many of the same techniques you'd expect from a first year creative writing class, where every scene is set with the same list of everyday things (a street, a building, the sound of a cart, a brief description of the weather), and then we're given some little slice of life from the characters with no emotional arc or resolution, and then the camera drifts away again, leaving us with some some vague, pseudo-spiritual narration.

The whole thing was oddly saccharine--the theories of Einstein by way of greeting card--even the sad moments were rather precious in their sadness. It all becomes so formulaic, so quickly that it felt less like Lightman intended to blow my mind than to lull me to sleep with this plodding chant.

Each story takes some idea of how time might behave differently and tries to present it to us, but Lightman never pushes the envelope, never presents us with anything truly weird or puzzling. It reminded me of LeGuin's critique of literary writers 'slumming it' in genres like fantasy, sci fi, and horror, because it seems interesting--but not really understanding the genre they're writing in (and never getting called on it, because Lit critiques don't know anything about genre, either).

So, they end up taking ideas that other writers and thinkers have been exploring for decades and presenting them to us as if they are still new. He does this with the idea of 'eternal return', which Nietzsche was writing about a century ago, and which appeared in Egyptian and Buddhist thought thousands of years ago.

Needless to say, a lot of people have said a lot of things about this idea over the centuries, from philosophers and theologians to sci fi and fantasy authors, and so it's simply not enough to plop it down before your audience and say '*isn't that cool?*', while completely ignoring the depth and complexity surrounding it. It makes this book feel less like hearing the thoughts of a guy with a physics degree (which Lightman has), and more like sitting in a dorm room while a guy packs another bowl and says '*Whoa dudes, what if time was, like, a circle?*'

The profound part isn't just asking the question, but digging deeper into what that question says about our world, and ourselves. Lightman does try to do this in some of his shorts, but just seems to lack the necessary imagination to provide us with a truly unusual take on things.

When he presents the idea of the 'butterfly effect', he gives us some accidental time travelers who hide in corners because they are so afraid that they might kick up a bit of dust which will make someone late, which will mean some great man will never be born--and yet, isn't it just as likely that their minor effect would instead prevent some terrible murderer from having been born? Hell, if a nostalgic misanthrope were sent back in time, he might try to change everything he could, because it 'couldn't be worse than what we have now'.

The simplistic presentation means that we as readers are missing out on an entire side of the issue. If the travelers were instead afraid of changing things because then they would return to a future they don't recognize, where things familiar to them would be replaced by inexplicable events, in effect turning them into madmen convinced the world is not as it should be, that would have been more interesting, because it presents the idea with a more complete and universal experience.

Likewise, in another story depicting a reality that has a known end of the world, he shows everyone as just being happy and accepting it, wrapping it up with all the emotional depth of a Coke commercial. He takes pains to give us all these strange sci fi scenarios, and yet every character in them is somehow more bland and milquetoast than any real person--and when writing a piece of speculative fantasy, you don't want it to come off as *less weird* than life. To really bring a setting home to readers, you have to be able to deliver it through the odd little reactions of your characters: how does it change their lives, and how they think?

That's how an author like Chekhov delivers the strangeness of our own little world to us, through these queer characters and their queer little thoughts--that somehow strike us as just right when we read them, even though we'd never thought of them that way before, ourselves. Lightman seems to be doing the opposite: taking a world that should be fascinating and interesting, that should tell us something about ourselves, make us question our own biases and assumptions, yet somehow making it all bland and flat and generic.

He also seems to have trouble keeping track of his own ideas as they unfold--for instance, he depicts for us a world where instead of time moving along from moment to moment, it exists all together as a multitude of

moments, like pictures in a photo album--and yet, one of the images he gives us is 'the first time seeing the ocean'. If all of these moments coexist outside of the context of temporal progression, how can there be a 'first time'? How does that make sense within the confines of this setting?

Similarly, when he depicts a world where time runs backwards, an old woman grows younger and gradually knows less and less, until becoming a child, he talks about her reverting to her college age and 'seeing her husband for the first time'--but in this world, as time runs backwards, shouldn't she be seeing him for the last time?--to me that seems a much more poignant moment when imagining a world like this. To have these stories get lost in a muddle of points of view, switching between the reader's and the character's, is an utter shame, because it completely misses out on what makes the setting strange in the first place.

Of course, some people might suggest that it's not meant to be entirely rational, because each story is supposed to be a dream from the mind of Einstein. So, these little contradictions and short-falls would then represent the arbitrary nature of dreams. But if these are dreams, they aren't the kind you bother to share the next morning, because they aren't particularly fantastical or disturbing or odd, in fact they're pretty quotidian. It ends up feeling more like the dreams your cubicle mate bores you with than the dreams of one of the greatest and most imaginative thinkers of the 20th Century.

Lightman's little stories just aren't that profound, he's not pushing hard enough, not tearing the veil and forcing us to acknowledge some strange and incompatible view we had not considered before--and though he doesn't have the contemptuous '*wake up sheeple!*' tone of something like *Zeitgeist* or *Ishmael*, nonetheless he has more in common with these than with a mind-bending author like Kafka.

It's certainly fascinating that modern physicists are now reconsidering ancient ideas like eternal recurrence in light of recent theories like quantum physics, but you don't get any of that from these 'Philosophy Lite' stories. In some ways it reminds me of the debacle surrounding the film *What the Bleep Do We Know!?*, where a bunch of prominent physicists were brought in and interviewed about the nature of reality, and then the filmmakers edited those interviews down, presenting these responses completely out of context, and used them to support their own nonsense theories about psychic powers--much to the chagrin of all the scientists involved.

And the real pity there is that, if the filmmakers had actually listened to what the scientists were saying, they would have discovered that modern science is producing findings *far more remarkable* and strange than ESP. And that's the problem with Lightman, too: he's just not giving us the really unusual stuff, because he's watering it down too much, making it bland and palatable when it should be shocking and beggar belief. It's really a disservice to Einstein, a man whose unusual (but true) ideas deserve to be understood by the lay person, because of the ways in which they have fundamentally changed our conception of the world around us.

Better to read something like Hawking's *A Brief History of Time*, or Sagan's *The Demon-Haunted World*, or some of Richard Feynman's works--or just go back and watch some episodes of *Cosmos*. Any chapter from one of those will give you more than the entirety of this book.

A says

I didn't quite get this book. I am sure it simply went over my head. I'm no stranger to physics and what-not so I figured this would be a good read. My review below is evidence of my frustration with this book.

I don't understand how people not only rated this book so highly, but also claim to have had some kind of enlightening experience from having read it. I thought this book was incredibly kitschy. Each chapter is a vignette of a world with some perturbation in the way time itself works, and by the end of each chapter I feel the author trying to push some point about how all of these vignettes are actually describing some aspect of time in reality. That we should all stop and smell the roses, etc.

I will give it to the author that yes, sometimes we need to see the absurd to recognize the flaws in our thought patterns (such as working on mechanical time rather than body time, or that we should live in the moment and not dread the future or dwell on the past). I get it. This is evident in the first few stories and seems to be repeated throughout.

I feel like the author (professor of both physics and writing at MIT) is someone who has never been criticized because everyone has always been too polite to do so. In this book, I think Dr. Lightman abuses both science and art. Unless I am just too dense to "get it." The scenarios make no sense... if everyone stops working because the world is ending, then who exactly are they ordering bread from in such a more pleasant way? If the butcher forgets where he lives daily, and even that he has a family, then why would he go back to the butcher shop every morning?

The aspects of time that are being stretched aren't even consistent with physics. Why would people have to pay more for a house that moves fast if they would never notice any benefit from it? being that they too are moving fast and therefore time would ravage the house at the same rate as if they were both sitting still. And similarly for the lovers near the center of time where "a kiss could last a thousand years"? It would only last a second to those two lovers... they wouldn't notice any difference in time, only outside viewers would. Relativity man, c'mon... this is Einstein 101 stuff...

Again I've found nothing profound in this book. Since my opinion goes against pretty much all the other reviews I'm going to go out on a limb and assume that I'm missing some really important points here. I seriously doubt the distinguished and best-selling professor of physics and writing from MIT would produce something that sounds like a collection of failed short stories that a high school aged kid would write unless there was a reason to do so.

Please, someone, point me to what I am missing here. I yearn for the kind of experience the other reviews mention, especially with this book. I obviously need to be educated here.

Adriana says

Una dintre cele mai frumoase, inteligente și sensibile cărți citite anul acesta.

E o carte ce te pune pe gânduri, te face să simți și să (re)cunoști lucrurile într-o altă lumină. Totul prin joaca de-a timpul, de-a "ce-ar fi dacă ar fi" timpul-înel, sau fluviu, sau arbore... Pentru că nu ți se e timpul. Sau cum e. Sau dacă e. Iar ipotezele autorului, limpezi și delicate precum stampele japoneze, umplu cititorul de mirare și încântare:

"Tragedia acestei lumi este că nimeni nu este fericit, lipit într-un timp al durerii sau al bucuriei. Tragedia acestei lumi este că toți sunt singuri. Căci o viață din trecut nu poate fi împărțită cu prezentul. Oricine se lipește în timp, se lipește singur."

"Dar ce este trecutul? Ar putea fi... fermitatea trecutului este oare doar iluzie? Ar putea fi trecutul un caleidoscop, un model de imagini care se modifică odată cu fiecare perturbare a unei adieri, a unui râs, a unui gând? Iar dacă schimbarea este pretutindeni, cum să îți acest lucru?"

"În timp, există o infinitate de lumi. Unii lămuresc deciziile, afirmând că se vor întâmpla toate deciziile posibile. Într-o astfel de lume, cum ar putea fi cineva responsabil de acțiunile sale? Alții afirmă că fiecare decizie trebuie gândită și respectată, că fără fermitate ar fi haos. Asemenea oameni sunt mulțumi și trăsiași în lumi contradictorii, atâta timp cât îți rațiunea fiecăreia."

Pe scurt: sper să aveți timp să citiți această minunăție. Orice fel de timp: inel, fluviu, arbore, țesătură, iluzie...

Hadrian says

Brain candy on the subjective and shifting nature of time, relativity, and human existence. If Calvino's *Invisible Cities* explores fantasy in geography, then Einstein's *Dreams* explores fantasy and unreal times.

Maria Dobos says

Citind cartea lui Alan Lightman, îți pare că te plimbi într-o poezie - fiecare cuvânt îți are locul, fiecare frază o completează minunat pe cea dinainte, fiecare idee îți pătrunde în minte și te răsucește printre posibilități.

Dacă timpul nu curge doar înainte? Dacă suntem condamnați să ne învârtim în cerc, fără să știm, repetând la nesfârșit fiecare alegere greșită, fiecare gând, fiecare bucurie? Sau dacă, într-o altă lume, cauza precede uneori efectul, sau invers, iar "viitorul și trecutul sunt întrepătrunse"? Dacă fiecare alegere desparte universul în tot atâtea viitoruri concomitente câte opțiuni există? Sau poate timpul nu există. Ori poate timpul e purtat de oameni în adâncul lor... Cum ar fi să trăiești într-o lume în care timpul îți oferă scurte frânturi ale viitorului, o altă lume în care prezentul este singurul care dăinuie, o lume fără conștiința viitorului, în care "fiecare clipă este sfârșitul lumii"?

Dacă, dacă, dacă... Mă încântă multitudinea posibilităților, a realităților... a vrea mai mult timp să pot descoperi timpul.

"Într-o lume a viitorului stabilit, nu există bine sau rău. Binele și răul presupun libertatea de alegere, dar dacă fiecare fapt este deja ales, nu poate exista libertatea de a alege. Într-o lume a viitorului stabilit, nimeni nu este responsabil. Încăperile sunt deja aranjate."

"Dar ce este trecutul? Ar putea fi – fermitatea trecutului este oare doar iluzie? Ar putea fi trecutul un caleidoscop, un model de imagini ce se modifică odată cu fiecare perturbare a unei adieri, unui râs, unui gând? Iar dacă schimbarea este pretutindeni, cum să îți acest lucru?"

"Din numeroasele naturi posibile ale timpului, imaginate în tot atâtea nopți, una pare irezistibilă, persistentă. Nu că celelalte ar fi imposibile. Celelalte ar putea exista în alte lumi."

Fionnuala says

How do you check the time?

If you spend a lot of time on your computer, you may simply swivel your eyes to the top right-hand corner of the screen. Or perhaps you wear a wrist watch so all you have to do is move your head slightly to check the time. Maybe you rely on your phone and then you have to make more of an effort, you have to put your hand in your pocket, pull out the phone and switch it on. No? You carry your phone in your hand at all times? Then checking the time has never been easier.

In the spring of 1905, the people of Berne had to make a bigger effort to check the time. Those were the days when mobile phones didn't exist and clocks were less reliable. You've forgotten that, haven't you? That clocks used to run at different speeds, that your clock might lose several minutes a day while your neighbour's was always fast, or vice-versa. And if you forgot to wind your clock, or mislaid the key, you lost track of the time completely, unless, of course, there was a friendly German clock-winder in the vicinity, but that's another story which I won't waste time on right now.

Back to the people of Berne and the efforts they made to check the time. Berne has a famous clock tower dating back to the thirteenth century, the Zytgloggeturm (take your time).

Every afternoon, the townspeople of Berne convene at the west end of Kramgasse. There, at four minutes to three, the Zytgloggeturm pays tribute to time. High on the turret of the tower clowns dance, roosters crow, bears play fife and drum, their mechanical movements and sounds synchronised exactly by the turning of gears, which, in turn, are inspired by the perfection of time. At three o'clock precisely, a massive bell chimes three times, people verify their watches and then return to their offices on Speichergasse, their shops on Marktgasse, their farms beyond the bridges of the Aare.

The bears mentioned in that quote don't all appear every day. No, every bear has six days off so the townspeople always know which day of the week it is from the attributes of the bear which appears just before the clock strikes the hour; the Sunday bear is white, for example.

So the clock also served as a calendar and its giant face showed the position of the sun, the phases of the moon, the date and the seasons. Anyone living and working within sight of that clock had their very own giant app full of time related information available at the merest swivel of the eye. And there you were thinking those must have been such primitive times.

Far from it.

This book opens at six o'clock in the morning in an office on Speichergasse where a young man, who would later become the most famous man of his century, perhaps of all time, has just spent many hours putting the finishing touches to his new Theory of Time. He has been working on the theory for months, and his dreams as well as his waking life have been preoccupied with examining all the possible variations of time that may exist and the relative consequences for the world and those who live in it.

The rest of the book recounts Alan Lightman's version of those dreams: the people of Berne living their lives, working and sleeping but not necessarily in the world of time as we know it, so that a husband might be rich and successful in one time world, poor in another, a wife might be faithful when time runs rapidly on, unfaithful when it slows down.

Lightman's language is simple, his ideas are accessible and by the time you finish this book, you will be convinced that you yourself actually lived in Berne in the spring of 1905, perhaps on Speichergasse, or maybe on Marktgasse or preferably along the leafy, sunny banks of the river Aare.

And now you are four minutes older than you were before you started reading this review.

And if you want to be another four minutes older but not necessarily unhappy about it, have a listen to this:

<https://www.youtube.com/watch?v=mDpT4...>

Matthias says

Time has always fascinated me. Well, I say always, but that's not true. In fact, I'm almost never fascinated by time. Only very occasionally, in short bouts, whenever I happen to think about it. If I'd have to add up all the time during which I was fascinated by time, I don't think it would add up to much more than a week, if that. And yet, during my fascination with time, it feels like an endless, enduring fascination that I always carry around with me, and that I've been subconsciously pondering on ever since I was capable of doing such a grave thing as pondering. Given this wonderment with time, I was ready to love this book, a book that would make me think about time and forget about time all at once.

Sadly, it was not to be.

With every page I turned, time, much like the words I was wading through, became a sticky jello. Everything started moving slowly. My thoughts, the story, the people under yet another arcade in yet another Gräschengasse or some other German sounding street that looks like any other German street that apparently always needs to have arcades. And I'm not talking about the cool arcades with games and pool tables and candy, but the old architectural thing with which there's only one thing to do: stand under it and do absolutely nothing of interest.

The only thing that happens in this book is time. It happens in different ways, as it happens, but while time is a great host for happenings, it doesn't make for a very great entertainer itself. As my slow thoughts slowly built up to slow frustration I finished another three page chapter, which should actually be called a vignette, because stuff actually happens in chapters. These vignettes are intellectual and poetic masterpieces that are boring beyond the imagination, which is the least boring way to be boring, so I'll give them that.

No, time did not disappear. It did not become a concept that in turn became a gateway to leaps and bounds of the imagination. Time became the annoying tick-tack-tocking of the clock while you're trying to sleep. Every tick signifying another segment of time irrevocably wasted on lying awake without good reason, trying to read this book.

I'm being harsh. I'm maybe even being a bit evil. Definitely rude. So let me have a little pause right here and calm down. So I just took a little pause, not that you noticed because you just kept reading, but I assure you I did. You can't begin to imagine how much time passed between that dot and that "So.". The stuff I did. The laundry. The dishes. A walk in the drizzle. Thinking about Fionnuala's sublime review that shows what a greater mind than mine can give in terms of interpretation of this book. Her review also comes with a great soundtrack. So yes, it was a good pause, I even had a cookie. The American kind, with little bits of chocolate, that fall apart in big crumbles that you can find on your clothes later on for a little treat after the treat. And you? What did you do with that pause? Absolutely nothing! You just rushed to the end of this paragraph, perhaps just to end up feeling hungry for a cookie, perhaps even willing to settle for a crumble.

Maybe I should point out that those German sounding streets aren't German, but Swiss. Imagine that, a book about time set in Switzerland! It's also about Einstein. What's his nationality, I ask? Who knows, I sure don't,

that's why I asked? The guy lived absolutely everywhere, relatively speaking. Time for another pause. Wikipedia just told me he's a Württemberger, whatever the hell that means. Guy is so old he was born in a country that doesn't even exist anymore. Makes you wonder if he's even real, right?

But he was! And I guess that means that he is. And he dreamed dreams. And who decided to commit these dreams to paper? Alan Lightman. His name? Not a coincidence, I would think. Unless everything is a coincidence, because every incident links with another incident somehow, every effect knows a cause that's also an effect and you get these long strings of effects and causes and they get all entangled like your headphones do and one of these strings, perhaps through some inextricable knots, must connect Lightman's name to Einstein's dreams. The result, namely this book, is as frustrating as the spaghettis coming out of your pocket whenever you want to listen to some tunes during a walk in the drizzle.

Should you read this book? Only if you want to make up your own mind. Read Fionnuala's review to get another side of the story, a more beautiful one, before making up that cluttered mind of yours. Unless you're Fionnuala. Scratch that, even if you're Fionnuala, because you deserve a little treat of your own making after all this rambling.

My two cents? Maybe just read the first line and the last line of every vignette. They usually get the point across and it will save you the trouble of reading about how a couple is standing under an arcade or how a butcher is passing an arcade or how that Aarhe (aargh indeed) is twinkling under the sun or the moon or, wait for it, twinkling in time. You didn't wait for it, did you? Okay, that's the end of this review for you, young reader! What I'm trying to say is that some ideas on how time could work are interesting enough, which are described in the beginning of each vignette. Then flick two pages while thinking for yourself what it could mean, and then read the last couple of sentences to (sometimes) get a nice paradox on the way we deal with our past, or how time can make us alone, or how an absolute lack of freedom provides its own form of freedom.

I think a lot more could have been done with both time, this author's time and my time. Nothing can be done without time, ergo everything should be done WITH it. Lightman didn't do enough and failed to live up to his promising name.

Of course, that's just my opinion. As you very well know by now, it's all relative.

Cecily says

Poetic twists on the paradoxes of time.

The quotidian becomes extraordinary and unsettling.

Time travel needn't involve machines or blue boxes (sorry, Apatt!): Lightman makes it leap off the page and into your mind, leaving you questioning the very root of reality.

Now that I am reading Borges, I assume Lightman was influenced by him (and maybe others), in particular, the short story, *Tlön, Uqbar, Orbis Tertius*

FORMAT

There are about 30 very short chapters (typically, three pages of well-spaced text). Each uses an artist's palette to conjure ordinary scenes of human interaction in a small Swiss Germanic town.

Everyman, everyday, anytown - except that the unique way time operates in each place creates a uniquely alien culture.

It's full of dilemmas and paradoxes, and the book itself is a paradox: it's so little and light, but it contains SO much of weight. (There, Apatt, I've squeezed in a TARDIS.)

"Each time is true, but the truths are not the same."

WHO IS THIS FOR?

It's for anyone who likes to play with ideas and appreciates beautiful writing. I know real physicists who have enjoyed this, but you certainly don't need any esoteric knowledge to be transported by it.

POETIC PROSE

I appreciated the lyricism as I read it, but mainly noted down the ideas.

* There are many series of single-sentence, seemingly unrelated, vignettes, especially on page 58-60: "Footprints in snow on a winter island. A boat on the water at night, its lights dim in the distance... A locked cabinet of pills. A leaf on the ground in autumn, red and gold and brown, delicate... A mother on her bed, weeping, the smell of basil in the air... Sunlight, in long angles through the window in late afternoon... A worn book lying on a table beside a dim lamp."

* Sunrise: "Ten minutes past six by the invisible clock on the wall. Minute by minute, new objects gain form."

* "Hypothetically, time might be smooth or rough, prickly or silky, hard or soft. But in this world, the texture of time happens to be sticky."

* "In a world where time is a sense... a sequence of episodes may be quick or may be slow, dim or intense, salty or sweet, causal or without cause, orderly or random." Here, "the time-deaf are unable to speak what they know. For speech needs a sequence of words, spoken in time."

* "Where time stands still... Raindrops hang motionless in the air. Pendulums... float mid-swing. Dogs raise the muzzles in silent howls... The aromas of dates, mangoes, coriander, cumin are suspended in space."

* Time can be measured by things other than clocks: "by the changes in heavenly bodies... by heartbeats... the duration of loneliness."

HOW TO BE HAPPY

This is a book of hypotheses, not solutions. It isn't theological or prescriptive, but its exposition of adaptation and happiness spoke to me.

In most of the worlds, some people have coping strategies that bring happiness, or at least contentment, whereas others are mired in misery. In many cases, that means going to great, even ridiculous, lengths to

gain just a little bit more time. In those respects, these worlds are like our own.

In some of the worlds, predestination or inevitability breeds recklessness, "free to do as he pleases, free in a world without freedom."

In another, it's suggested that "a world where time is absolute is a world of consolation" because time is predictable. I'm not sure about that one; people are still unpredictable. Lightman is also very upbeat about a world where people have no memories: every night is the first night, and people live in the present - but they could just as easily be reckless, not being able to learn from experience.

Should we live for the moment, the past, or the future (echoes of A Christmas Carol)? Would you "rather have an eternity of contentment, even if that eternity were fixed and frozen, like a butterfly, mounted in a case"?

There is no single answer, but I believe we are responsible creating the framework for our own happiness. We may need help (especially if saddled with depression or grim circumstances), but ultimately, peace can only come from within. How one achieves that is trickier - rather like the solution for travelling safely through a black hole that starts, "First, build a time machine..." (or maybe the way to build a time machine is to first find the black hole?).

WEIRD WAYS TIME COULD WORK - Spoilerish?

Some examples of worlds described in the book. For each, the implications of understanding and ignorance of the nature of time is different, and almost all could be the basis for a whole novel:

- * "Suppose time is a circle, bending back on itself. The world repeats itself, precisely, endlessly."
- * "Time is like a flow of water, occasionally displaced by a bit of debris, a passing breeze.... People caught in the branching tributaries find themselves suddenly carried to the past."
- * A stop/start world where time is "seemingly continuous from a distance but disjointed close up."
- * "Time has three dimensions, like space... an object may participate in three perpendicular futures."
- * "Time is like the light between two mirrors... a world of countless copies."
- * "There is mechanical time and there is body time." One is "rigid and metallic", the other "squirms and wriggles like a bluefish in a bay... Where the two times meet, desperation. Where the two times go their separate ways, contentment."
- * "Time flows more slowly the farther from the centre of the earth." Or the converse: "The centre of time" from which "time travels outward in concentric circles", getting faster as one is further away. Where time is a local phenomenon, passing at a different rate, each town has to become a self-sufficient island, and no traveller can ever return home, being "cut off in time, as well as space".
- * "Time is visible in all places. A vast scaffold of time, stretching across the universe." And "Time is a visible dimension... one may choose his motion along the axis of time." Which way would you go?
- * "Consider a world in which cause and effect are erratic... each act is an island in time." Scientists are

helpless, but artists love it.

* "A world without a future... Time is a line that terminates at the present, both in reality and in the mind."

* What about a world where everyone knows it will end in a month? Lightman sees it "a world of equality", but I think that's optimistic. Or where people are like mayflies and live for only a day each.

* What about a world where people live forever? Does infinite time and infinite possibility send you to a frenzy of business, experiencing everything you can imagine, or does it take the pressure off, so you sit around, doing nothing just yet?

* "The passage of time brings increasing order." In spring, people create mess and chaos.

* "Imagine a world in which there is no time. Only images." I can't really get my head round that one, but it's the most beautiful one.

* "Time is not a quantity but a quality... Time exists, but it cannot be measured... Events are triggered by other events, not by time."

* "Time flows not evenly, but fitfully and... as a consequence, people receive fitful glimpses of the future." (Shades of Flashforward.) Here, "Those who have seen the future do not need to take risks, and those who have not yet seen the future wait for their vision without taking risks."

* "Time passes more slowly for people in motion." The converse would have possibilities too.

* There's a backward-flowing time, but Kurt Vonnegut, Martin Amis (and others) have done that in *Slaughterhouse Five* and *Time's Arrow* respectively.

Perhaps we should try to ignore time. One world has only just discovered objective measurement of it. The clock "was magical... unbearable... outside natural law" but it could not be ignored, so they worshipped it. "They have been trapped by their own inventiveness and audacity. And they must pay with their lives."

TINY FLAW

The alternative time chapters are interspersed with occasional ones describing Einstein as a young patent clerk, working on this theories of time. I found these an unnecessary and unwelcome distraction.

HOW TO READ IT

You could easily sit and read this book in one short session, but although you would imbibe the beauty and the tangling of time, I wanted to digest and ponder a few worlds at a... time. I might choose differently on a reread, though.

TO MY FRIENDS - yes, you!

This is another wonderful book that I discovered purely because of the enticing reviews of several friends on GR. Thank you.

To my other friends, I redirect the favour by recommending this book to you.

UPDATE re Calvino

A few months after loving this, I read and loved Calvino's *Invisible Cities*. I now realise how heavily influenced Lightman was: in content, structure, style... every way. Whether you class it as homage or borderline plagiarism is debatable, but it does not detract from my enjoyment of this at the time, and I think Lightman's book is probably the more accessible of the two, even though it is primarily about physics/time, rather than geography.
