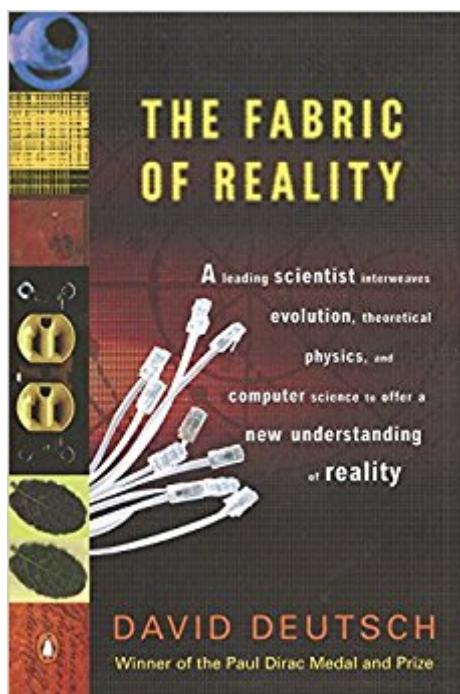


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# The Fabric Of Reality: The Science Of Parallel Universes--and Its Implications



## Synopsis

For David Deutsch, a young physicist of unusual originality, quantum theory contains our most fundamental knowledge of the physical world. Taken literally, it implies that there are many universes — parallel to the one we see around us. This multiplicity of universes, according to Deutsch, turns out to be the key to achieving a new worldview, one which synthesizes the theories of evolution, computation, and knowledge with quantum physics. Considered jointly, these four strands of explanation reveal a unified fabric of reality that is both objective and comprehensible, the subject of this daring, challenging book. *The Fabric of Reality* explains and connects many topics at the leading edge of current research and thinking, such as quantum computers (which work by effectively collaborating with their counterparts in other universes), the physics of time travel, the comprehensibility of nature and the physical limits of virtual reality, the significance of human life, and the ultimate fate of the universe. Here, for scientist and layperson alike, for philosopher, science-fiction reader, biologist, and computer expert, is a startlingly complete and rational synthesis of disciplines, and a new, optimistic message about existence.

## Book Information

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## Customer Reviews

"Our best theories are not only truer than common sense, they make more sense than common sense," writes physicist David Deutsch. In *The Fabric of Reality*, Deutsch traces what he considers the four main strands of scientific explanation: quantum theory, evolution, computation, and the theory of knowledge. "The four of them taken together form a coherent explanatory structure that is so far-reaching, and has come to encompass so much of our understanding of the world, that in my

view it may already properly be called the first Theory of Everything." Deutsch covers some difficult material with unusual clarity. Each chapter ends with a summary and definitions of important terms, which makes the work an invaluable sourcebook. --This text refers to an out of print or unavailable edition of this title.

Common sense and reality diverge and then come together again in this mind-blowing book. Maintaining that the best explanation for certain quantum phenomena is that there are parallel universes, i.e., multiverses, Oxford physicist Deutsch posits and then attempts to unify four basic strands?quantum physics, epistemology, evolution, and the theory of computation. Just one astonishing consequence is that quantum computers can collaborate between universes. Deutsch's ideas are exotic and challenging, but his text is surprisingly accessible, and he supplies a glossary and summary at the end of every chapter. For motivated readers, this book is a feast for the mind. Strongly recommended for academic and larger public libraries.?Gregg Sapp, Univ. of Miami Lib., Coral Gables, Fla.Copyright 1997 Reed Business Information, Inc. --This text refers to an out of print or unavailable edition of this title.

I love David Deutsch's honesty. I teach physics at a small university, and I know I've been guilty of hesitating and couching my words so as to not seem crazy, or to not upset the sensibility of others. But if we're to make progress, we need to be more honest with what we know, and counter those who don't know but should.If you fail to move forward with an understanding of the multiverse in any form, I doubt we'll see the next big breakthroughs from you. That's okay in the larger sense. Many people with a lesser understanding will still make worthwhile contributions in other needed areas. And most don't need to know that our planet is round to make it home. And we can still refer to the sun setting, even if we know it's not; however, even if you don't know this, I suspect you might still make it through life largely unaffected by that failing. . . And it is a failing. And not just yours. It's my failing too. I don't know the answers. I don't know anyone who does. However, I suspect Deutsch's understanding will be far ahead of mine in most times future to now. Which is why I look forward to anything he writes. If you haven't considered also getting his more recent book, *The Beginning of Infinity*, do.In *The Fabric of Reality* you will confront the best of the big picture that humans have been assembling for centuries, but which most still can't accept. What can be expected to be known of biological evolution, even to the level of a layman's appreciation, is grasped by only a minority (if you believe in biological evolution with a guiding hand from a god, then you're in that majority who simply don't understand evolution). But I feel comforted to have my closet friends all accept some

form of biological evolution, even if we disagree over the details. Quantum physics, however, has an even smaller minority who are willing to face it on its terms, even if we consider only those who do largely accept evolution. Instead we get silliness like the Copenhagen view of Bohr and Heisenberg, or silliness like the wishy-washy view of those belonging to the "shut up and calculate" school. . . . Whatever the reason for this (and an important appreciation of where the answer will come from is found in Deutsch's lastest book), read this book from Deutsch, read his latest book (The Beginning of Infinity), if you want to think about these ideas seriously.

Super dense. At times I asked myself why I was even reading this. But fascinating.

A fantastic look at reality and how to think. Written by obne of the few great thinkers alive today.

The book was published in 1997, and a lot has happened since then. Yet the foundations retain their permanence, and David Deutsch's captivating writing is as fresh as ever. Despite the availability of newer books, for the layman/woman, now almost 10 years later, I would still rank this book at the top. There is a lot in the book; and yet, the ideas are presented in a clear and engaging way. The author is a pioneer, a giant in modern physics; he was and is a driving force in new discoveries in the subject. Yet he has his personal way of explaining physical reality. His view is not shared by all scientists, one should admit. However, there is agreement about the scientific conclusions. The first chapter in the book stresses \*explanation\*, our understanding of the reason for things. There are other views of science, e.g., instrumentalism: predicting the outcome of experiments. The author's view on quantum theory is based his idea about parallel universes. While fascination, the reader should be aware that there are alternative theories for explaining quantum phenomena. An important concept in quantum theory and quantum computation is "decoherence", and it is explained (ch 9) in terms of different (parallel) universes. In ch 9 about quantum computers, it might have been only fair to mention that there are such other current views on decoherence; but this is a minor complaint. Presentation: I love that each chapter concludes with a section on terminology and a summary. As a subject theoretical computer science started with Alan Turing and John von Neumann in the 1940ties: Classical computation follows the model of Turing,-- strings of bits, i.e., 0s and 1s; and a mathematical model which is now called the Turing machine. Instead of bits, why not two-level quantum systems, e.g., models built from electrons or photons? Such an analogues model for computation based on two-level quantum systems, and a quantum version of Turing's machine was suggested in the 1980ties by R.P. Feynman. The form it now has owes much

to the author himself, David Deutsch. But it wasn't until Peter Shor's qubit-factoring algorithm in the late 1990ties (not covered in the book) that the subject really took off, and really caught the attention of the mainstream science community, and of the general public: The 'unbreakable' codes might be breakable after all ! That there is a polynomial factoring algorithm, as Shor showed, shook up the encryption community, for obvious reasons, and created headlines in the news. Ideas in the quantum realm, and not part of classical thinking, include superposition of (quantum) states, the EPR paradox (1935), and (quantum) coherence. Although these concepts are at the foundation of quantum theory, they make a drastic change in our whole theoretical framework of computation: Now one passes from the familiar classical notion of bit-registers to that of qubit-registers, and the laws of quantum mechanics take over. Mathematical physicists and computer scientists must revisit the old masters: Bohr, Einstein, Heisenberg, Pauli, and Dirac. In passing from logic gates to quantum gates (unitary matrices), the concept of switching-networks from traditional computer science now changes drastically. The changes introduce brand new scientific challenges, and new truly exciting opportunities. I believe that this book does justice to this, and that it is still a fascinating and thought provoking invitation to some of the most intriguing trends in modern physics.

If you've spent any time at all seeking Truth, scientific, moral or otherwise, the chapters on epistemology alone make this lovely book well worth your time.

I see this book as the ultimate guide to cake baking. It is the very thing the title suggests ~The FABRIC of Reality~. As a famous saying goes, "To bake a cake from scratch first you create the universe" This book identifies the absolute basic ideas that define our understanding of what our senses tell us. Regardless of what you think of his theory of the multiverse or even his views on quantum physics you must admire the way he challenges us to look at the things we believe in their most basic form. He says if you kick a stone and you feel it hurt your foot then you must assume it is real. All our lifetime beliefs must stem from this simple observation. To me DD has opened up my eyes to see the world and after reading this book my mind was forced to make adjustments in the way I come to accept things as fact. He goes to the very heart of what not only what the fabric of the universe is but during the explanation forced me to see what the fabric of my own surroundings is and how I should decide what to believe in.I must highly recommend this book as required reading to anyone who has ever decided to believe in something just because someone else said it was true (hint - religious writings) without offering the rock kicking experiment to prove it.

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