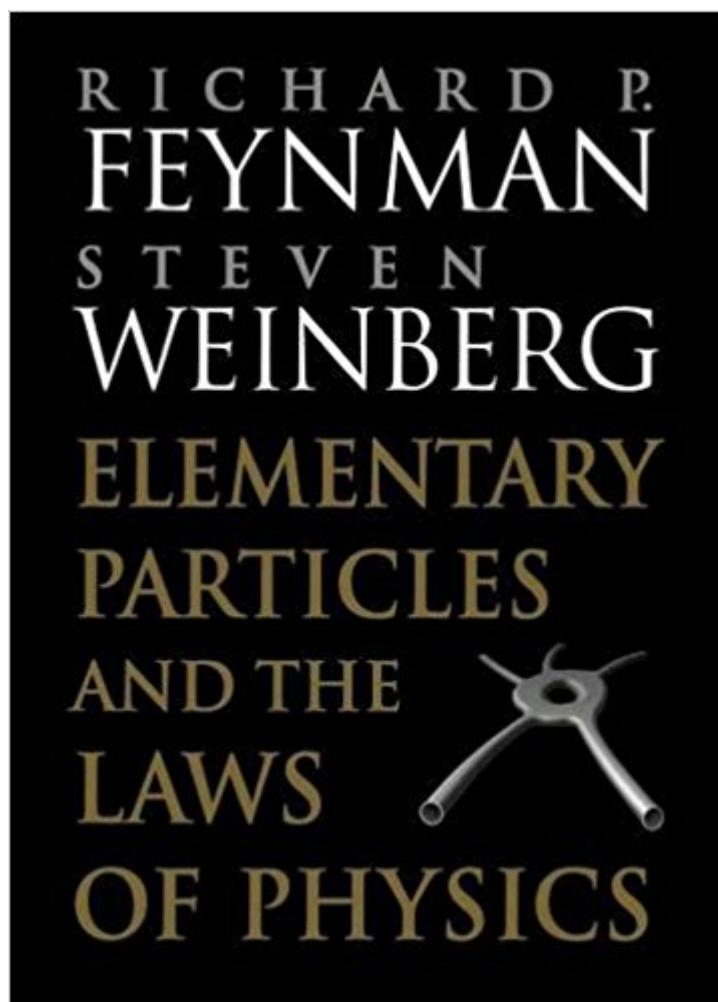


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# Elementary Particles And The Laws Of Physics: The 1986 Dirac Memorial Lectures



## Synopsis

Developing a theory that seamlessly combines relativity and quantum mechanics, the most important conceptual breakthroughs in twentieth century physics, has proved to be a difficult and ongoing challenge. This book details how two distinguished physicists and Nobel laureates have explored this theme in two lectures given in Cambridge, England, in 1986 to commemorate the famous British physicist Paul Dirac. Given for nonspecialists and undergraduates, the talks transcribed in *Elementary Particles and the Laws of Physics* focus on the fundamental problems of physics and the present state of our knowledge. Professor Feynman examines the nature of antiparticles, and in particular the relationship between quantum spin and statistics. Professor Weinberg speculates on how Einstein's theory of gravitation might be reconciled with quantum theory in the final law of physics. Highly accessible, deeply thought provoking, this book will appeal to all those interested in the development of modern physics.

## Book Information

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## Customer Reviews

"...a book that all physicists will be pleased to have on their shelves, and one that will surely stimulate aspiring theoretical physicists." New Scientist

Perhaps the two most important conceptual breakthroughs in twentieth century physics are relativity and quantum mechanics. Developing a theory that combines the two seamlessly is a difficult and ongoing challenge. This accessible book contains intriguing explorations of this theme by the distinguished physicists Richard Feynman and Steven Weinberg.

This was a very well written manuscript of two very important lectures on extremely interesting topics done by two of the greatest experts in the field, very educational and a must read by anyone interested in physics

This book is really cool. It's targeted to someone already kinda familiar with physics and Quantum Mechanics but you only need the most basic understanding. The book gives reasonably precise explanations (without too much math) of why anti-particles must exist. Feynman's style is generally quite readable. Overall, I had fun and learned a lot. I would not recommend this book for someone who has studied quantum mechanics at all however. It assumes you're familiar with a lot of the terminology and concepts.

Feynman's lecture is the simplest and the most intuitive explanation of the connection between spin and statistics that I have ever seen! This is a very readable book, no knowledge of quantum field theory is required, but a good understanding of relativity and quantum mechanics is essential for understanding the book. I think every physicist should read these lectures, although very simple, they add a lot to our understanding and even to our knowledge of fundamental physics.

When I read *The Feynman Lectures on Physics* including *Feynman's Tips on Physics: The Definitive and Extended Edition*, I was hoping to understand the reasoning behind the exclusion principle, and was disappointed to find that RPF felt that this was too complex for undergraduates, so he asked them to take it on faith for the moment. Here he is talking to a more advanced audience, and explains it - he was right, it's tough. I'm still struggling to understand it, but I have confidence that this is a good book to help. [Added nearly a year later] Having reread the book several times, I finally understand Feynman's lecture! As is often the case, once I understand the principle, I see relationships to various other things I had not fully understood before. I should also comment on Weinberg's lecture: he's talking about more speculative areas than Feynman, which is perhaps one reason I found him less enlightening than Feynman, but in a rather vague way I follow what he's saying. Certainly these are fascinating ideas, but they don't sing to me like Feynman's lecture.

The lectures which were translated into texts were the masterpiece in the world of physics!

Very interesting literature... In my university days this type of books very hard to get to sweden

hence the books very unlike and you often got one from a collecque and if you were lycky you could buy book if you visitid Stanford as an example....now you are only a couple of clicks and a short time waiting before you have the books in your hand.Good buy.

The magic of Feynman making simple things such as the necessity of antiparticles existance and the connection between spin and statistics

satisfactory

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