

Real Quanta by Martijn van Calmthout

3 stars

A good explanation of something we can't understand.

If you think you understand quantum mechanics, then you don't understand quantum mechanics. This is a quote used early on in 'Real Quanta', a book which attempts to explain the unexplainable field of science known as quantum physics. The book is structured as an imaginary conversation in a restaurant with two famous physicists, Albert Einstein and Niels Bohr, and runs through a comprehensive list of quantum concepts such as entanglement, quantum computers and Schrödinger's equation.

The science discussed in the book is fairly complex and the author does a good job of explaining most of the ideas. The hypothetical conversations with Einstein and Bohr work well as they connect the book together and offer the reader a break from the heavy physics; in fact I would say there could be more of these sections in the book as the history and backgrounds of the scientists are often very interesting when touched upon. The book is readable and doesn't get bogged down in terminology which probably helps readers with no experience of quantum mechanics; there is also a glossary of terms at the end of the book.

The biggest issues I had with the book are its structure and target audience. The first few chapters read like a long introduction, touching upon many concepts but not properly explaining them. Later on the chapters start to become more focused, but there is still a sense of rambling and not many summaries of each concept. Often ideas are mentioned but not explained until later on in the book and the focus often seems to go off on a tangent, starting to explain something and then realising more concepts are necessary to explain the first idea and so explaining them instead. This is probably common for a book of this nature, where a wide range of ideas is touched upon but never properly explored in detail or depth (in fairness, hundreds of books would probably be required to do so).

The target audience is a bit unclear; the book is a summary of a wide field of science and so in that regard it is probably best suited for a beginner who knows nothing about quantum physics. Yet it occasionally does become a bit heavy and I'm not sure someone with no prior knowledge would be able to follow everything. The book does not contain any diagrams or equations, which could potentially help someone with a non-science background to pick up some of the more advanced stuff.

In conclusion, this book does a good job explaining many quantum ideas and has a clever initial idea with the Einstein/Bohr meeting. However, it suffers from winding explanations and could do with tightening up and further organisation of chapters to make it more accessible for a beginner to the quantum world.

Boromir

Breakaway Reviewers received a copy of the book to review.