

MR2895172 (Review) 81P05 (81-01)

★**Elegance and enigma.**

The quantum interviews.

Edited by Maximilian Schlosshauer.

Frontiers Collection.

Springer, Heidelberg, 2011. *xiv+311 pp.* \$69.95. ISBN 978-3-642-20879-9

This lively and original book seeks to introduce readers to the field of quantum foundations via a series of 17 questions posed to 17 of its central researchers. Those interviewed are: Guido Bacciagaluppi, Caslav Brukner, Jeff Bub, Arthur Fine (the editor's Ph.D. supervisor), Chris Fuchs, GianCarlo Ghirardi, Shelly Goldstein, Daniel Greenberger, Lucien Hardy, Tony Leggett, Tim Maudlin, David Mermin, Lee Smolin, Anthony Valentini, David Wallace, Anton Zeilinger, and Wojciech Zurek. This represents a fairly good mixture of ages, and a good division into those that are more on the physics side and those that lean more towards philosophy. The book begins with some engaging biographies of the interviewees.

A sense of fun runs throughout the book, no doubt prompted by the editor's own sparkly and chatty prose. For example, in response to the first question ("What first stimulated your interest in the foundations of quantum mechanics?") Chris Fuchs refers the reader to the movie *Austin Powers* and Dr. Evil's reminiscences: "My childhood was typical. Summers in Rangoon. Luge lessons. In the spring we'd make meat helmets . . . pretty standard really" (p. 26). Fuchs' amusing yet deep responses were a real treat. Overall there is a remarkable variation in the interviewees' responses and characters.

Other questions include: "What are quantum states?"; "Does quantum mechanics imply irreducible randomness in nature?"; "Quantum probabilities: subjective or objective?"; "What would it take to get you to switch interpretations?"; "What is the role of philosophy in advancing our understanding of the foundations of quantum mechanics?"; and "Where do you see the next major development coming from in the foundations of quantum mechanics?" Each of the chapters deals with a specific question, with the interviewees' responses prefaced by some useful background provided by the editor.

The book's principal aim is to present quantum foundations to new readers, highlighting what the central positions and problems are, and (in this case) pointing out the path that has led the interviewees to their positions. I think it succeeds in the main, though the readers will certainly need to know a fair amount of quantum mechanics already to make sense of the arguments.

The book is a delight to read, and will obviously be enjoyed by others working within and around the philosophy and foundations of physics (the most likely market). I would also recommend the book very highly to graduate students studying the philosophy of physics, to gain a good feel for what makes those in the field tick.

Reviewed by *Dean Rickles*