Alice and Bob Meet the Wall of Fire: The Biggest Ideas in Science from Quanta

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Alice and Bob Meet the Wall of Fire: The Biggest Ideas in Science from Quanta Thomas Lin (Editor) **Accessible and essential coverage of today's challenging, speculative, cutting-edge science from *Quanta Magazine*.**

These stories reveal the latest efforts to untangle the mysteries of the universe. Bringing together the best and most interesting science stories appearing in *Quanta Magazine* over the past five years, Alice and Bob Meet the Wall of Fire reports on some of the greatest scientific minds as they test the limits of human knowledge. *Quanta*, under editor-in-chief Thomas Lin, is the only popular publication that offers in-depth coverage of today's challenging, speculative, cutting-edge science. It communicates science by taking it seriously, wrestling with difficult concepts and clearly explaining them in a way that speaks to our innate curiosity about our world and ourselves.

In the title story, Alice and Bob--beloved characters of various thought experiments in physics--grapple with gravitational forces, possible spaghettification, and a massive wall of fire as Alice jumps into a black hole. Another story considers whether the universe is impossible, in light of experimental results at the Large Hadron Collider. We learn about quantum reality and the mystery of quantum entanglement; explore the source of time's arrow; and witness a eureka moment when a quantum physicist exclaims: "Finally, we can understand why a cup of coffee equilibrates in a room." We reflect on humans' enormous skulls and the Brain Boom; consider the evolutionary benefits of loneliness; peel back the layers of the newest artificial-intelligence algorithms; follow the "battle for the heart and soul of physics"; and mourn the disappearance of the "diphoton bump," revealed to be a statistical fluctuation rather than a revolutionary new particle. These stories from Quanta give us a front-row seat to scientific discovery.

Contributors
Philip Ball, K. C. Cole, Robbert Dijkgraaf, Dan Falk, Courtney Humphries, Ferris Jabr, Katia Moskvitch, George Musser, Michael Nielsen, Jennifer Ouellette, John Pavlus, Emily Singer, Andreas von Bubnoff, Frank Wilczek, Natalie Wolchover, Carl Zimmer

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Date	:	Published November 20th 2018 by MIT Press
ISBN	:	9780262536349
Author	:	Thomas Lin (Editor)
Format	:	Paperback 328 pages
Genre	:	Science, Nonfiction

From Reader Review Alice and Bob Meet the Wall of Fire: The Biggest Ideas in Science from Quanta for online ebook

Vance J. says

I am a regular reader of Quanta, and I appreciated this compilation of recent and relevant articles on scientific developments. Well, except the machine learning sections, but that’s only because I consider that more technology than natural science. For those that don’t read Quanta, I recommend that you do :)

Daniel Merritt says

Great way to stay updated

I am an armchair,wannabe scientist. I found this book/series of articles to be a good update on the current research and thought. The book was broken down well and very well organized. For the most part the writing and language was very approachable. I would recommend this to anyone with interest in the roads that scientific development is traveling.

Brian Clegg says

This book contains a considerable amount of good (and interesting) science - but, for me, it's not a good science book. A book should have structure and flow, leading the reader through its narrative. This is a collection of articles (from the website Quanta). As a result, what we've got here is a magazine in book's clothing. And at that it's not a very good magazine.

What do we look for in a science magazine? Good illustrations, for one. Even a top-level science magazine such as Nature has plenty of illustrations and graphics. Here there are none. Also we want a smorgasbord of interesting articles - the origin of the term 'magazine' is a storehouse - the editor's job is to ensure variety and range, so even if one article isn't really to your taste, the next one will be something completely different. Here, the articles are grouped in topics, and are often quite similar within the topic - many even have quotes from the same handful of scientists over and over again.

Take the first section, which surely should be one designed to whet the appetite. Titled 'Why doesn't our universe make sense?', these articles are all what I'd call fantasy physics. As the book's title suggests, they obsess over purely theoretical concepts like black hole firewalls. There is no observational or experimental evidence for black hole firewalls. They are simply the result of playing mathematical games - which is fine for mathematicians, but shouldn't really be presented as science when there is no prospect of taking a close look at a black hole in the foreseeable future. Every single one of the seven articles in this section is concerned with mathematical or philosophical considerations (such as 'naturalness') which are arguably not really science at all. There is a lot of discussion in the physics world at the moment about the validity of this kind of work - but none of it surfaces here.

Another section I struggled with was one labelled 'How do machines learn?' This was about AI and was very gung-ho about artificial intelligence, giving us hardly anything about the problems it raises and the concerns

that it is being overhyped, reflected so well in books such as Common Sense, the Turing Test and the Search for Real AI and The AI Delusion.

The sections I found most interesting were those on biology - 'What is Life?' and 'What Makes us Human?' There was a time when physicists could deservedly be snide about biology, culminating in Rutherford's famous 'stamp collecting' put down. Yet these biology sections felt far more like real science than the physics ones. The articles were excellent and there seemed far more that was generally interesting here. (And I say this as someone with a physics background.)

In the end, I'm not sure that collecting together the 'best' articles (if the first section were the best physics articles, I'd hate to see the worst) from a website makes for a particularly useful book. By all means visit Quanta and read the articles there (they even have illustrations!) - it's a great resource. But the book doesn't do it for me.
