

# THE NEW YORKER

ANNALS OF SCIENCE

## DREAM MACHINE

*The mind-expanding world of quantum computing.*

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**ABSTRACT:** ANNALS OF SCIENCE about David Deutsch and quantum computing. On the outskirts of Oxford lives a brilliant and distressingly thin physicist named David Deutsch, who believes in multiple universes and has conceived of an as yet unbuildable computer to test their existence. Deutsch, who has never held a job, is essentially the founding father of quantum computing, a field that devises distinctly powerful computers based on the branch of physics known as quantum mechanics. With one millionth of the hardware of an ordinary laptop, a quantum computer could store as many bits of information as there are particles in the universe. It could break previously unbreakable codes. It could answer questions about quantum mechanics that are currently far too complicated for a regular computer to field. None of which is to say that anyone yet knows what we would really do with one. Deutsch believes that if a quantum computer were built it would constitute near-irrefutable evidence of what is known as the Many Worlds Interpretation of Quantum Mechanics. A number of respected thinkers in physics besides Deutsch support the Many Worlds Interpretation, though they are a minority, and primarily educated in England, where the intense interest in quantum computing has at times been termed the Oxford flu. But the infection of Deutsch's thinking has mutated and gone pandemic. Other scientists, although generally indifferent to the truth or falsehood of Many Worlds as a description of the universe, are now working to build these dreamed-up quantum computing machines. Deutsch grew up in the London area, took his undergraduate degree at Cambridge, stayed there for a masters in math and went on to Oxford for a doctorate in physics. Though affiliated with the university, he is not on staff and has never taught a course. Discusses the differences between quantum mechanics and



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**P**erhaps someone by suggesting otherwise. But history is a mix of accidentally obscuring and revealing. Sometimes quite literally. Though that's not always true, as in the case of the *Book of the Dead*, which, though mostly thought of as a guide to the afterlife, also serves as a record of the lives of its owners. The ancient Egyptians, for example, wrote down their names, titles, and family members on the papyrus scrolls that accompanied them into the afterlife. And the people who spent their lives in study are rarely ever forgotten.



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