

Is it possible that the most famous critic of quantum mechanics actually invented most of its fundamentally important concepts?

In his 1905 Brownian motion paper, Einstein quantized matter, proving the existence of atoms. His light-quantum hypothesis showed that energy itself comes in particles (photons). He showed energy and matter are interchangeable, $E = mc^2$. In 1905 Einstein was first to see nonlocality and instantaneous action-at-a-distance. In 1907 he saw quantum "jumps" between energy levels in matter, six years before Bohr postulated them in his atomic model. Einstein saw wave-particle duality and the "collapse" of the wave in 1909. And in 1916 his transition probabilities for emission and absorption processes introduced ontological chance when matter and radiation interact, making quantum mechanics statistical. He discovered the indistinguishability and odd quantum statistics of elementary particles in 1925 and in 1935 speculated about the nonseparability of interacting identical particles.

It took physicists over twenty years to accept Einstein's light-quantum. He explained the relation of particles to waves fifteen years before Heisenberg matrices and Schrödinger wave functions. He saw indeterminism ten years before the uncertainty principle. And he saw nonlocality as early as 1905, presenting it formally in 1927, but was ignored. In the 1935 Einstein-Podolsky-Rosen paper, he explored nonseparability, which was dubbed "entanglement" by Schrödinger. EPR has gone from being ignorable to become Einstein's most cited work: the basis for today's "second revolution in quantum mechanics."

In a radical revision of the history of quantum physics, Bob Doyle develops Einstein's idea of objective reality to resolve several of today's most puzzling quantum mysteries, including the two-slit experiment, quantum entanglement, and microscopic irreversibility.



Schrödinger's Cat

Did Albert Einstein Invent M

MY GOD, HE PLAYS DICE!

DOYLE

I-Phi



My God, He Plays Dice!

How Albert Einstein Invented Most Of Quantum Mechanics

Particles or Fields?

Of These Great Physical Concepts?

Bob Doyle
The Information Philosopher
"beyond logic and language"