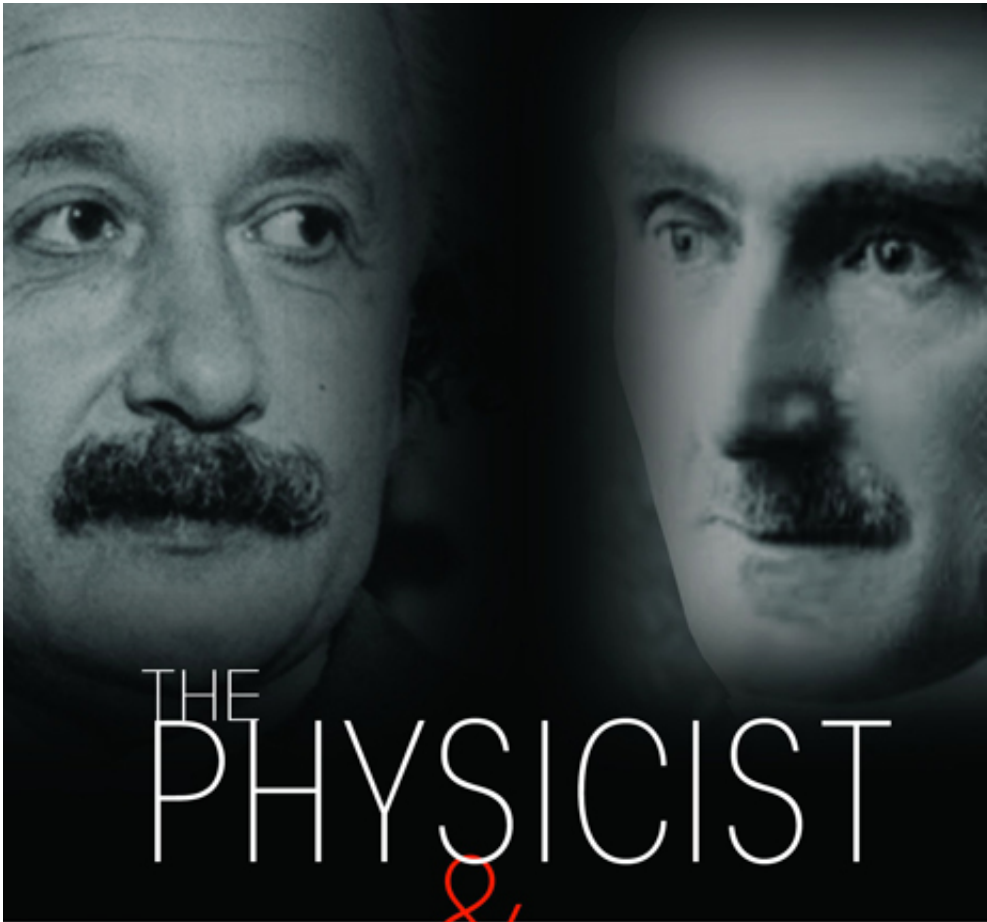


Science historian tells a timely story about Einstein and his most dangerous critic

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EINSTEIN, BERGSON, AND THE DEBATE THAT
CHANGED OUR UNDERSTANDING OF TIME

JIMENA CANALES

"The Physicist and the Philosopher: Einstein, Bergson, and the Debate That Changed Our Understanding of Time," will be published in June by Princeton University Press. Credit: Princeton University Press

Two of the 20th century's greatest minds, one of them physicist Albert Einstein, came to intellectual blows one day in Paris in 1922. Their dispute, before a learned audience, was about the nature of time - mostly in connection with Einstein's most famous work, the theory of relativity, which marks its centennial this year.

One immediate result of the controversy: There would be no mention of [relativity](#) in Einstein's Nobel Prize, awarded a few months later.

One long-term result: a split between [science](#) and the humanities that continues to this day.

Jimena Canales, the Thomas M. Siebel Chair in the History of Science at the University of Illinois, tells the tale of that day and the debate that followed in the new book "[The Physicist and the Philosopher: Einstein, Bergson, and the Debate That Changed Our Understanding of Time.](#)"

The philosopher in the title, and Einstein's adversary that day, was Henri Bergson, a French philosopher who was much more famous at the time than the German-born Einstein. Presidents and prime ministers carefully read Bergson's work, and his public lectures often were filled to capacity. He was perhaps the pre-eminent public intellectual of his time, Canales said.

Bergson did not challenge Einstein's scientific claims about relativity, including the then-startling claim of time dilation, in which time slows down for objects traveling at higher speeds, Canales said.

What he challenged instead was Einstein's interpretation of those claims, saying it went beyond science and was "a metaphysics grafted upon science." He said that Einstein's theory did not consider time as it was lived in human experience, the aspects of time that could not be captured by clocks or formulas.

Einstein quickly dismissed the philosopher's criticism. To an audience that day of mostly philosophers, he made the incendiary statement that "the time of the philosophers does not exist."

In the aftermath, Bergson published a book in which he thoroughly laid out his criticism of Einstein's relativity and his theory of time. Both men and their supporters also spread their views through publications and letters, some of which employed "highly effective backbiting," Canales said.

Bergson and Einstein also seemed to be on opposite ends of almost every pertinent issue of the time, from war and peace to race and faith, she said. "They seemed to take opposite stances in everything."

Einstein supporters claimed that Bergson, though a gifted mathematician, did not completely understand Einstein's theory. Bergson thought his theory of time was misunderstood by Einstein.



A 1922 clash between Albert Einstein and Henri Bergson, both celebrated thinkers of the early 20th century, caused a split between science and the humanities that has never healed, says science historian Jimena Canales, in a new book. Credit: L. Brian Stauffer, University of Illinois News Bureau

Bergson's influence has been most prominent in novels and film, in their use of narrative twists and breaks and in [time](#)-shifting between past and future, Canales said. He also has had support among scientists, among them leading physicists who had helped develop relativity, as well as experts on quantum mechanics.

It was Einstein's ideas that gained prominence, however, in part because later research only reinforced the science of relativity, but also because Bergson was effectively discredited by scientists, Canales said. Outside of philosophy, Bergson has been largely forgotten and is rarely even mentioned in Einstein biographies.

Canales said her book tells a "backstory of the rise of science" in the 20th century. It's a story of "misunderstanding and mistrust," she said.

"I took a pessimistic view of human nature and of our capacity to understand each other, and I think that view actually illuminates why so many humanists cannot talk to scientists, and scientists cannot talk to humanists."

Canales said she sought to give an even-handed treatment to the two men and their views. In the process, however, she also sought to rehabilitate Bergson.

Just as Bergson was painted by some as anti-science, Canales said she knows she takes a similar risk in trying to give him his due in the dispute with Einstein, though it is not her intent. Being against science in the modern world, "makes no sense," she said. "Clearly we should be for science."

But we also need to think about science critically, Canales said. "We're

not taught to see science as it really is, as it really is practiced, as it really is done." She said she hopes her book might help scientists and others understand the place of science "in more realistic terms."

More information: Her book, "[The Physicist and the Philosopher: Einstein, Bergson, and the Debate That Changed Our Understanding of Time.](#)" will be published in June by Princeton University Press. Her previous book, "[A Tenth of a Second.](#)" also dealt with the nature and measurement of time.

Provided by University of Illinois at Urbana-Champaign

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