

CHAPTER 1

Untimely

On April 6, 1922, Einstein met a man he would never forget. He was one of the most celebrated philosophers of the century, widely known for espousing a theory of time that explained what clocks did not: memories, premonitions, expectations and anticipations. Thanks to him, we now know that to act on the future one needs to start by changing the past.

Why does one thing did not always lead to the next? The meeting had been planned as a cordial and scholarly event. It was anything but that. The physicist and the philosopher clashed, each defending opposing, even irreconcilable, ways of understanding time. At the *Société française de philosophie*—one of the most venerable institutions in France—they confronted each other under the eyes of a select group of intellectuals. The “dialogue between the greatest philosopher and the greatest physicist of the 20th century” was dutifully written down. It was a script fit for the theater.¹ The meeting, and the words they uttered, would be discussed for the rest of the century.

The philosopher’s name was Henri Bergson. In the early decades of the century, his fame, prestige, and influence surpassed that of the physicist—who, in contrast, is so well known today. Bergson’s reputation was at risk after he confronted the younger man. But so was Einstein’s. The criticisms leveled against the physicist were immediately damaging. When the Nobel Prize was awarded to Einstein a few months later, it was not given for the theory that had made the physicist famous: relativity. Instead, it was given “for his discovery of the law of the photoelectric effect”—an area of science that hardly jolted the public’s imagination to

the degree that relativity did. The reasons behind the decision to focus on work *other* than relativity were directly traced to what Bergson said that day in Paris.

The president of the Nobel Committee explained that although “most discussion centers on his theory of relativity,” it did not merit the prize. Why not? The reasons were surely varied and complex, but the culprit mentioned that evening was clear: “It will be no secret that the famous philosopher Bergson in Paris has challenged this theory.” Bergson had shown that relativity “pertains to epistemology” rather than to physics—and so it “has therefore been the subject of lively debate in philosophical circles.”²

The explanation that day surely reminded Einstein of the previous spring’s events in Paris. Clearly, he had provoked a controversy. These were the consequences. He had been unable to convince many thinkers of the value of his definition of time, especially when his theory was compared against that of the eminent philosopher. In his acceptance speech, Einstein remained stubborn. He delivered a lecture that was not about the photoelectric effect, for which he had been officially granted the prize, but about relativity—the work that had made him a star worldwide but which was now in question.

The invocation of Bergson’s name by the presenter of the Nobel Prize was a spectacular triumph for the philosopher who had lived his life and made an illustrious career by showing how time should *not* be understood exclusively through the lens of science. It had to be understood, he persistently and consistently insisted, *philosophically*. But what exactly did he mean by that? As it turns out, Bergson’s philosophy was as controversial as Einstein’s physics.

What led these two brilliant individuals to adopt opposite positions on nearly all the pertinent issues of their era? What caused a century to end as divided as the twentieth did? Why did two of the greatest minds of modern times disagree so starkly, dividing intellectual communities for years to come?

THAT EVENING

On that “truly historic” day when the two met, Bergson was unwillingly dragged into a discussion he had explicitly intended to avoid.³ The

philosopher was by then much more senior than Einstein. He spoke for about half an hour. He had been prodded by an impertinent colleague, who had been in turn pressured to speak by the event organizer. “We are more Einsteinian than you, Monsieur Einstein,” he said.⁴ His objections would be heard far and wide. “Bergson was supposed by all of us to be dead,” explained the writer and artist Wyndham Lewis, “but Relativity, oddly enough at first sight, has resuscitated him.”⁵

The physicist responded in less than a minute—including in his answer one damning and frequently cited sentence: “*Il n’y a donc pas un temps des philosophes.*”⁶ Einstein’s reply—stating that the time of the philosophers did not exist—was incendiary.

Einstein had traveled to the City of Lights from Berlin. When his train arrived at the Gare du Nord, “photographers, reporters, filmmakers, officials and diplomats awaited him in imposing numbers.” The scientific celebrity decided to descend by the other side of the tracks, escaping surreptitiously, like a robber. He made his way through dangerous cables and warning signs before arriving at a tiny door that led to the boulevard de la Chapelle, which, in the afternoon, was as empty as the Sahara Desert. Safe from the cameras and the crowds, Einstein laughed like a child.⁷

The physicist’s visit was “a sensation that the intellectual snobbery of the capital could not pass up.”⁸ Intellectuals were not the only ones excited by his presence. It literally set off “crowds in a craze,” quickly enthralled unsuspecting Parisians.⁹ An observer described an “unfettered frenzy by the public at large around certain of Einstein’s commentators.”¹⁰ Einstein’s trip “reanimated and brought to the stage of a paroxysm the curiosity of the public for the scientist and his work.”¹¹

What Einstein said next that evening was even more controversial: “There remains only a psychological time that differs from the physicist’s.” At that very moment, Einstein laid down the gauntlet by considering as valid only two ways of understanding time: physical and psychological. These two ways of examining time, although scandalous in the particular context that Einstein uttered them, had a long history. With Einstein, they would have an even longer one—becoming two dominant prisms inflecting most investigations into the nature of time during the twentieth century.

The simple, dualistic perspective on time advocated by Einstein appalled Bergson. The philosopher responded by writing a whole book

dedicated to confronting Einstein. His theory is “a metaphysics grafted upon science, it is not science,” he wrote.¹²

Einstein fought back with all his energy, strength, and resources. In the years that followed, Bergson was largely perceived to have lost the debate against the younger physicist. The scientist’s views on time came to dominate most learned discussions on the topic, keeping in abeyance not only Bergson’s but many other artistic and literary approaches, by relegating them to a position of secondary, auxiliary importance. For many, Bergson’s defeat represented a victory of “rationality” against “intuition.”¹³ It marked a moment when intellectuals were no longer able to keep up with revolutions in science due to its increasing complexity. For that reason, they should stay out of it. Science and its consequences should be left to those who arguably knew something about it—the scientists themselves.¹⁴ Thus began “the story of the setback, after a period of unprecedented success, of Bergson’s philosophy of absolute time—unquestionably under the impact of relativity.”¹⁵ Most important, *then* began the period when the relevance of philosophy declined in the face of the rising influence of science.

Biographers who write about Einstein’s life and work rarely mention Bergson. One exception, a book written by a colleague, paints a picture of eventual rapprochement between the two men.¹⁶ But other evidence shows just how divisive their encounter was. A few years before their deaths, Bergson wrote about Einstein (1937), and Einstein mentioned Bergson (1953) one last time. They underlined—once again—just how wrong the perspective of the other remained. While the debate was for the most part removed from Einstein’s legacy, it was periodically brought up by many of Bergson’s followers.¹⁷ The simple act of reviving the discussion that took place that day in April 1922 was not a matter that could be taken lightly. Not only is the incident itself divisive—its relevance *for history* is still contested.

The two men dominated most discussions about time during the first half of the twentieth century. Thanks to Einstein, time had been finally “deposed from its high seat,” brought down from the lofty peak of philosophy to the practical down-to-earth territory of physics. He had shown that “our belief in the objective meaning of simultaneity” as well as that of absolute time had to be forever “discarded” after he had successfully “banished this dogma from our minds.”¹⁸ The physicist

had shown that “space by itself, and time by itself” were two concepts “doomed to fade away into mere shadows.”¹⁹

Bergson, in contrast, claimed that there was more to Time than scientists had ever wagered—and he meant scientists of all stripes, ranging from Darwinian evolutionists to astronomers and physicists. To explain those aspects of Time that were most important and that scientists constantly disregarded, Bergson would frequently capitalize the term. He associated it with *élan vital*, a concept translated worldwide as “vital impulse.” This impulse, he argued, was interwoven throughout the universe giving life an unstoppable impulse and surge, ever productive of new unexpected creations, and imperfectly grasped by science. Although science could only deal with it imperfectly, it was the backbone of artistic and creative work. Bergson’s influence on literature was seen as spreading to Gertrude Stein, T. S. Elliot, Virginia Woolf, William Faulkner, and numerous others who introduced breaks, twists, and turns in narratives where the future appeared before the past and the past after the future.²⁰

Einstein’s and Bergson’s contributions appeared to their contemporaries forcefully at odds, representing two competing strands of modern times. Vitalism was contrasted against mechanization, creation against ratiocination, and personality against uniformity. During these years, Bergson’s philosophy was often placed next to the first in these pairs of terms; Einstein’s work frequently appeared alongside the second.²¹ Bergson was associated with metaphysics, antirationalism, and vitalism, the idea that life permeates everything. Einstein with their opposites: with physics, rationality, and the idea that the universe (and our knowledge of it) could stand just as well without us. Each man represented one side of salient, irreconcilable dichotomies that characterized modernity.

This period consolidated a world largely split into *science* and *the rest*. What is unique about the appearance of these divisions and subsequent incarnations is that after the Einstein and Bergson encounter, science frequently appeared firmly on one side of the dichotomy. Other areas of culture appeared on the other side—including philosophy, politics, and art.

The stature of both men was envied by many of their contemporaries. Sigmund Freud, the founder of psychoanalysis, once described himself as having “little claim to be named beside Bergson and Einstein as one

of the intellectual sovereigns” of his era.²² The confrontation between them was “a controversy that presently separates the two most renowned men of our times.”²³ Although Einstein’s brain was paraded in formaldehyde as the perfect embodiment of the organ of genius, the locks of Bergson’s hair kept at his barbershop were “treated as holy relics.”²⁴

“Early in this century, two very prominent, and originally independent, lines of thought collided,” explained a physicist and historian who put his career on the line by siding with Bergson. “On the one hand . . . was the system of Bergson. . . . On the other hand, the physical theory of relativity, which . . . dominated scientific thought,” he continued. “It was inevitable that one or the other of these views should give way,” he concluded.²⁵ More recently, the debate between them continues to be widely perceived as *inevitable*. “Bergson’s confrontation with Einstein was inevitable,” wrote the famous philosopher Gilles Deleuze, more than half a century after their meeting.²⁶ And thus we find these two men playing key roles in the salient divisions of modern times. Can we move beyond them?

Bergson’s defeat was a decisive turning point for him personally, when the fame, wisdom, and caution of the elder was tested by the impetuous braggadocio of the younger, but it was also a key moment marking the rise of the authority of science vis-à-vis other forms of knowledge. In the years that followed their meeting, the philosopher and physicist became engaged in numerous other disputes that would touch on just about everything. Some of their differences were highly abstract—about the nature of time, the role of philosophy, and the reach and power of science. Others were more concrete, such as the role of the government, the place of religion in modern societies, and the fate of the League of Nations. But almost anywhere that we look—from vegetarianism to war, from race to faith—we find that the two men took pretty much opposite stands on almost all pertinent issues of their time.

There are many reasons why we know much about Einstein and little about Bergson. Most of them have to do with how the debate intensified after their first meeting; the debate took off like wild fire.²⁷ The tension between the two men escalated after Bergson published a no-holds-barred book devoted to relativity theory. The controversial tome, designed to be carefully followed with pencil or pen in hand, appeared later that year. *Duration and Simultaneity* inspired hundreds of responses

by prominent thinkers centrally engaged with the disagreement between the physicist and the philosopher. The book was as contentious as it was successful. Nearly a decade after its publication, a writer and eager reader of the work of both men still asked: “Would the book by the most brilliant of the contemporary philosophers clarify the ideas of the most brilliant of the scientists?”²⁸ In 1936, less than a decade and a half after it first appeared, a successful biologist warned prospective buyers that they “might have difficulty in finding” a copy of *Duration and Simultaneity* “as the last edition is exhausted.”²⁹

Einstein is well known and respected today; Bergson is much less. Yet at the time of their meeting the situation was quite the opposite. Bergson was an established figure as a public intellectual and philosopher, hobnobbing in the mornings with heads of state, filling lecture rooms in the afternoon, and providing bedtime reading for many at night; Einstein had only recently become a rising star in the eyes of the public and was still finding his voice outside of scientific spheres.

Bergson and Einstein met a few more times and exchanged a couple of letters. Einstein sent a friendly postcard from Rio de Janeiro to Bergson after their problematic encounter in Paris.³⁰ They never debated publically again. Instead, they propagated their respective positions in publications and letters to others. Some of these letters eventually reached the public; others remained in private hands until they found their way to archives. Through them, we can trace clear instances of highly effective backbiting. A number of prominent disciples took it upon themselves to end the debate in favor of the man they supported. The debate grew to engulf the public at large. Few remained neutral.

After their first encounter, Einstein insisted that the philosopher simply did not understand the *physics* of relativity—an accusation with which most of Einstein’s defenders agreed and which Bergson forcefully resisted. In light of these accusations, Bergson revised his argument in three separate appendices to *Duration and Simultaneity* that he included in a second edition and in a separate paper published in a specialized journal. Bergson’s response has frequently been ignored. By taking it in consideration, we can see that their dispute hinged on a lot more than mere technical disagreements pertaining to factual details of relativity theory. Bergson never acknowledged defeat. According to him, it was Einstein and his interlocutors who did not understand *him*.

In one sense this book is about one day, but in another it is much broader. Before the two men actually met, it seemed nearly impossible to foresee such a strong potential for conflict between them, their science, and their philosophies. We find some evidence of animosity on Einstein's part in 1914, when in a letter to a friend he described Bergson's philosophy as "flaccid" and not even worth reading for the purpose of improving his command of the French language.³¹ For Bergson, evidence reveals the contrary: an initial fascination with Einstein and his theory. A friend of his recalled how, upon hearing about it, the philosopher plunged himself into a careful study of its mathematics. At that time, Bergson thought he would publish only a "note" on it, with an overall positive assessment. It would "show the agreement between relativity and my views on space and spatial time," he confided to a friend. But these conciliatory intentions soon waned. It became clear that Bergson's concept of *duration*—a label used by the philosopher to describe aspects of time that could never be grasped quantitatively—had to be "set apart."³²

At the 1921 Oxford Congress of Philosophy, papers on Bergsonian philosophy and Einsteinian physics were delivered side-by-side with no apparent problems. What happened on that sixth of April that changed the status quo?

This book is about two men and one day. But it is also about what these two men have come to represent. Most important, it is about how these men and their respective advocates *came to be who they were*. Specific events and interactions shaped them as much as they, in turn, shaped the world around them. After arguing for nearly a century in terms of *for* or *against*, we can now search for a third route: to understand *both* of their positions, their emergence, and their context.

A REVOLUTION AGAINST BERGSON

We know Einstein by reputation—a man frequently compared to Newton and to Columbus. By publishing "what is arguably the most famous scientific paper in history," he created a revolution comparable to that of Copernicus.³³ In 1919 an eclipse expedition brought international fame to the controversial scientist. Partly because of his vocal pacifist

and antinationalist stance, Einstein was one German-born scientist supported by many members of war-torn countries and admired by those who shunned the dangerous rising tide of German nationalism. As one scientist of the period put it, when talking about time, one needed to talk about Einstein. Otherwise it would be like “not talking about the sun when discussing daylight.”³⁴ Since then, Einstein was crowned as the man whose work took “sensorial perception and analytical principles as sources of knowledge,” nothing more and nothing less.³⁵ The theory of relativity broke with classical physics in three main respects: first, it redefined concepts of time and space by claiming that they were no longer universal; second, it showed that time and space were completely related; and third, the theory did away with the concept of the ether, a substance that allegedly filled empty space and that scientists hoped would provide a stable background to both the universe and their theories of classical mechanics.

In combination, these three insights were related to a startlingly new effect, *time dilation*, which profoundly shocked scientists and the general public. In colloquial terms, scientists often described it by saying that time slowed down at fast velocities and, even more dramatically, that it completely stopped at infinite ones. If two clocks were set at the same time with respect to each other, and if one of them separated from the other traveling at a constant speed, they would mark different times, depending on their respective velocities. Although observers traveling with the clocks would be unable to notice any changes in their own system, one of them was slow *in comparison* to the other. Researchers calculated a striking difference between “time₁” as measured by a stationary clock when compared to “time₂” as measured by a clock in motion. Which of these referred to time? According to Einstein, *both*—that is, all frames of references should be treated as equal. Both quantities referred equally to time. Had Einstein found a way to stop time?

Bergson was not convinced. Claiming that the sensational conclusions of the physicist’s theory were not so unlike the fantastical searches for the fountain of youth, he concluded: “We shall have to find another way of not aging.”³⁶

Relativity scientists argued that our common conception of “simultaneity” needed to be upgraded: two events that seemed to occur simultaneously according to one observer were not necessarily simultaneous for

another one. This effect was connected to other aspects of the theory: that the speed of light (in vacuo and in the absence of a gravitational field) was constant.³⁷ The velocity of most physical objects could successively be increased by piggy-backing on other fast-moving objects. For example, a train traveling at a certain speed could be made to travel faster if placed on top of another fast train. While the first train could be traveling at, say, 50 mph, the one on top would go at 100 mph, the next one at 150 mph, and so on. Not so with light waves. The speed of light, in Einstein's account of special relativity, was not only constant; it was an unsurpassable velocity. This simple fact led scientists not only to abandon the concept of absolute simultaneity, it also led them to a host of additional paradoxical effects, including *time dilation*.

As with Einstein, we also know Bergson mostly by reputation.³⁸ Bergson was compared to Socrates, Copernicus, Kant, Simon Bolívar, and even Don Juan.³⁹ The philosopher John Dewey, known as one of the main representatives of American pragmatism, forcefully claimed that “no philosophic problem will ever exhibit just the same face and aspect that it presented before Professor Bergson.”⁴⁰ William James, the Harvard professor and famed psychologist, described Bergson's *Creative Evolution* (1907) as “a true miracle,” marking the “beginning of a new era.”⁴¹ For James, *Matter and Memory* (1896) created “a sort of Copernican revolution as much as Berkeley's ‘Principles’ or Kant's Critique did.”⁴² The philosopher Jean Wahl once said that “if one had to name the four great philosophers one could say: Socrates, Plato—taking them together—Descartes, Kant and Bergson.”⁴³ The philosopher and historian of philosophy Étienne Gilson categorically claimed that the first third of the twentieth century was “the age of Bergson.”⁴⁴ He was simultaneously considered “the greatest thinker in the world” and “the most dangerous man in the world.”⁴⁵ Students described him as “an enchanter” credited with “saving France and the liberty of Europe.”⁴⁶ Many of his followers embarked on “mystical pilgrimages” to his summer home in Saint-Cergue, Switzerland.⁴⁷ Lord Balfour followed his work carefully, and “when a past prime minister of England engages in a controversy with the principal philosophical thinker of the era, everyone should listen.”⁴⁸ Theodore Roosevelt, the president of the United States, was one of the many who listened carefully to what Bergson had to say, writing an article directly addressing Bergson's philosophy.⁴⁹ Yet others considered his

work as marking the passing of winter and the coming of a new spring for Western civilization.⁵⁰

Bergson was widely viewed as the main man leading the “insurgence against reason” that many diagnosed as a contemporary disease of the interwar period. As a result, he was accused of denigrating the “physical sciences” to “at best a merely practical device for manipulating dead things.”⁵¹ The historian and theorist Isaiah Berlin associated him with the “abandonment of rigorous critical standards and the substitution in their place of casual emotional responses.”⁵² The mathematician and philosopher Bertrand Russell charged him with anti-intellectualism, a dangerous disease affecting “ants, bees and Bergson” in which intuition ruled over reason.⁵³ Bergson’s *Introduction to Metaphysics* was “the *Discourse on Method* for modern anti-rationalism.”⁵⁴ He was reputed to be spiritualist, antiscience, and the leading representative of the “modern occult revival,” the “revolt against mechanism,” and the “new spiritualism.”⁵⁵ Believed to have been influenced by religious beliefs, and frequently associated with the Catholic Church, Bergson was Jewish. Rumors circulated that he had converted to Catholicism. Were they true? Yet his work was also placed on the Catholic Church’s Index of Prohibited Books, forbidding believers from reading it and disseminating it.⁵⁶

At the Lycée Condorcet, Bergson obtained prizes in English, Latin, Greek, and philosophy. He was acclaimed for his mathematical work, receiving a national prize and publishing in the *Annales de mathématiques*. He published two theses, one a highly specialized dissertation on Aristotelian philosophy and another, titled *Time and Free Will*, which would go through countless editions. In 1898 he became a professor at the École Normale; in 1900, he moved to the prestigious Collège de France.

His fifth book, *Creative Evolution* (1907), brought him universal fame. His lectures were so crowded with *tout Paris*, that his students could not find seats. It was rumored that socialites sent their servants ahead of time to reserve them, and “in illustrations of the time, we see people climbing windows to get a glimpse of the celebrated philosopher.”⁵⁷ During his reception at the Académie française he received so many flowers and applause that underneath the clamor he was heard protesting “But I am not a ballerina!” Even the Paris Opera, it was evident, was

not spacious enough for him.⁵⁸ Two thousand students turned up for a lecture at New York's City College (1913).⁵⁹

This universal fame followed him until 1922, when he published *Duration and Simultaneity*, a book that he described as a “confrontation” against Einstein’s theory. It unabashedly intended to out-Einstein Einstein by interpreting all known scientific facts associated with relativity theory in a new way. It was in press during their meeting and appeared later that year. It did not produce the author’s hoped-for effect.

“The Jew is told: ‘You’re not at the level of the Arab because at least you are white, and you have Bergson and Einstein,’” explained Frantz Fanon, who fought for decolonization and for Algeria’s independence from France. For him, the two men exemplified the racial tensions of the post–World War II era.⁶⁰ The French allegedly used them to foster the “so-called dependency complex of the colonized” to prove the superiority of whites against blacks, and to play Jews and Arabs against each other. Bergson and Einstein were frequently cited together as icons of modernity and of cultural and literary modernism. Their fame reached across the world.⁶¹

The confrontation between the two intellects was particularly shocking because those involved believed that agreement in scholarly matters, especially in scientific ones, should be reached. We were all accustomed to “endless discussion without resolution over the best structure to give a government, or over the most perfect form of art, or over a certain problem of metaphysics or ethics,” but this should *not* happen in a case “dealing only with logical deductions based on *facts* that none of the adversaries even dream of contesting.”⁶² This was a “disconcerting thing, and perhaps, without precedent.”⁶³ There needed to be an end to something that could only be explained as “a colossal misunderstanding” or a “monstrous mistake.” Something urgent had to happen in order to have “everyone agree.”⁶⁴ The arguments advanced had the disconcerting flavor of a “double monologue” that seemed to resemble those of “the tower of Babel” filled with “contradictory discussions where the affirmations are as categorical on one side as they are on the other.”⁶⁵ “Bergson and the relativists might both be wrong but cannot be right,” explained a physicist who dedicated most of his adult life to figuring out who should be the winner.⁶⁶ By the end of the twentieth century, the debate was still a “head-on clash of rival conceptions.”⁶⁷

To this day one can safely refer to it as a “*locus classicus*” and conclude that “The historical debate between Bergson and Einstein on the theory of relativity is . . . a classic.”⁶⁸ In the words of the poet Paul Valéry, their confrontation was the singular “*grande affaire*” of the twentieth century.⁶⁹ Did their debate end a “golden age before the divorce between the two cultures?”⁷⁰ It opened up a veritable “can of worms” that lasted for the next hundred years.⁷¹

Einstein, on that day, had good reasons to be worried about how the philosopher’s attack would affect him. He had promised to give the money from the Nobel Prize, which he was expecting to get, as alimony to his ex-wife. But before the prize was awarded that same year, some wondered if Bergson’s critique had thrown “the whole relativity doctrine into the lap of metaphysics, from which . . . Einstein was determined to rescue it.”⁷² Others started to consider Einstein’s theory as simply irrelevant for everyday human concerns. Alain, a widely read author who would become an important antifascist writer, claimed that, “from an algebraic point of view all [of Einstein’s work] is correct; from a human point of view all is puerile.”⁷³

The years that followed their encounter in Paris can be compared to those of the religious wars—with one major difference: instead of debating about how to read the Bible, thinkers across a wide variety of disciplines debated about how to read the complex *unfolding of nature through time*.