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**Edited by Peter L. Galison, Gerald Holton & Silvan S. Schweber:
Einstein for the 21st Century**

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WHO WAS EINSTEIN? WHY IS HE STILL SO ALIVE?

Gerald Holton

THE SPEAKERS FOR OUR SYMPOSIUM have come from six nations to consider the work and influence of a man who, only a century ago, started to overturn the scientific *Weltbild* of the time. Of all twentieth-century scientists, only he could possibly be the subject of such a wide-ranging meeting as ours, with nineteen contributions to follow, from art historians and chemists, political scientists and philosophers, musicologists and physicists, historians of science, and more. Not since Isaac Newton's *Principia* can one imagine an analogous symposium to mark a physical scientist's legacy in such a wide spectrum of fields.

This fact demands some commentary: Who was Einstein? And why, fifty years after his death, is he still so alive, with the year 2005 having been declared an International Year of Physics by the United Nations, by UNESCO, even by the U.S. House of Representatives, all of them citing his publications in 1905 as the main reason for their decision?

My task as introducer of this volume requires me to begin with a precaution: When we contemplate the work and influence of a person with such gigantic and manifold characteristics as Einstein, a remark of Werner Heisenberg is appropriate here: "The space in which a person developed as an intellectual/spiritual being [*geistiges Wesen*] has more dimensions than the space which he occupied physically." Einstein himself, in a letter of 1914, gave us an even better metaphor. He wrote in high spirits: "I succeeded in proving . . . that the hypothesis of the equivalence of acceleration and the gravitational field is absolutely correct. Now the harmony of the mutual relationships in the theory is such that I no longer have the slightest doubt about its correctness." But then he added at once: "Nature shows us of the lion only the tail. But there is no doubt in my mind that the lion belongs with it, even if he

cannot reveal himself to the eye all at once because of his huge dimensions." It seems to me that the Einstein phenomenon itself is, as it were, a grand, multi-dimensional lion, and that in this conference, acting together, we shall try to coax the lion from his lair. Although we cannot hope to comprehend the whole n-dimensional being once and for all, each of us, from our individual perspectives, may try to map one or another of the lion's dimensions and influence, from his days to ours.

Who was Einstein? We need not be discouraged by the obvious gap between him and those who study and write about his work. After all, Einstein too did not fully and properly describe himself. He tried to do so in his Royal Albert Hall speech in London, in October 1933, where he said only: "I am a man, a good European, a Jew." One must honor this heartfelt self-description, but Einstein's most obvious omission was his role as *scientist*. Being a scientist was also the reason he had accepted the offer to come to Berlin in 1914, to *the* place where, at that time, physical science was the best in the world, *the* place to be for a physicist. Even during the war years and in the hard decade that followed, despite all the hardships, Berlin could boast of a constellation of extraordinary physical scientists, and the exciting atmosphere in their colloquia and publications.

How much did these facts contribute to Einstein's unique ability and daring to develop, between 1915 and late 1917, his General Relativity Theory in Berlin? Could he have done so if he had accepted a grand offer from a city in another country? My own answer is: No other man than Einstein could have produced General Relativity, and in no other city than in Berlin, with its critical mass of close colleagues at the Academy and the University—Max Planck, Walther Nernst, Max von Laue, Fritz Haber, among many—all setting for themselves and one another the highest standards and expectations. Moreover, during that "Great War," which let loose the hounds of hell for the rest of the century, during that war when much of humanity devoted itself to senseless destruction, Einstein, even though wracked by severe challenges to body and spirit, completed his work on General Relativity by near superhuman effort and so revealed the outlines of the grand construction of the universe. That must count as one of the most moral acts of its day.

The science that Einstein left us appeared in some 300 publications. But those are not sitting on some dusty shelf as research material for historians. No. Although there was often a substantial delay before Einstein's ideas could be tested or used, they are alive today among active scientists around the globe, in a great variety of new work that testifies to his genetic role, in the explicit and implicit citations of new publications as well as in the rise of new technologies. Thus the so-called ether drift, which Einstein dismissed in 1905

in one sentence, has now been experimentally determined to be absent, with extraordinary accuracy. The gravitational lensing effect, which he published in 1936, turned out later to work also for galaxies and much else besides. The Bose-Einstein condensate, predicted in 1925, helped to explain superfluidity in 1928, and only a few years ago even trapped light. Einstein's 1924 prediction that matter waves would show interference effects was fulfilled three years later. In many parts of the world, a good portion of the electricity used daily comes from $E=mc^2$. The Equivalence Principle of General Relativity, initially only a courageous speculation, was confirmed most elegantly in the experiments by Robert V. Pound and his students more than five decades after Einstein had first intuited it. Gravitational waves, predicted in an article in 1918, have now become near certainty, as demonstrated by remarkable experimental techniques unknown in Einstein's days. Again and again, the headlines shout, Einstein was right.

To be sure, his image is also alive in banal advertisements, on T-shirts, in the fantasies of people who know nothing about physics. I will have to say more about this puzzling phenomenon. But a significant factor in Einstein's ubiquity among lay persons is surely that today's *scientists* find it safe and necessary to build many of their theories and experiments on what he achieved so many years ago.

In the last few decades, scholars have had glimpses of how Einstein's mind worked when he was doing science. I was privileged to come upon many such glimpses. In the late 1950s, the Estate of Einstein asked me to help put together the vast collection of his correspondence and manuscripts, then kept at the Institute for Advanced Study in Princeton, and to convert it into an archive accessible to scholars. Soon after having immersed myself at length in the glorious materials, two things struck me most. One was Einstein's utter self-confidence, despite many setbacks. Max Planck called it *freudige Sicherheit* ["joyful certainty"]. Of course, Einstein knew well that eventually good experiments would decide. For example, the very first response in the *Annalen der Physik* to Einstein's Relativity paper of 1905 came in early 1906. It claimed Einstein's theory to be empirically a failure, revealed by the foremost experimental physicist in the field, Walter Kaufmann of Göttingen. Einstein paid no attention to it for two years. Somehow he knew Kaufmann's to be a bad experiment, which eventually turned out to be the case. In the meantime Einstein left it to Planck to defend Relativity in the absence of experimental confirmation. Planck, who said he valued "simplicity and intuitiveness," was pushed to the wall in a scientific meeting in 1906, and finally had to fall back on declaring why he believed in Einstein's paper: *Mir ist das eigentlich sympathischer* [To me it is really more sympathetic]. On his part, Einstein was apt to let himself be guided by what he called his *Fingerspitzengefühl*, rather than

by the inductive method taught in schoolbooks—or, as he put it in a letter to Max Born: “I try to capture [the ‘objectively existing world’] in a wildly speculative way.” Indeed he was one of the rare scientists who had, again and again, an insight of what was still around the corner—a talent that Hans Christian Oersted had so memorably named “an anticipatory consonance with Nature.”

The other point that struck me early in reading his documents in his *Nachlass* was that Einstein very often let himself be guided, through thick and thin, by a few thematic presuppositions, which he called “non-Kantian categories,” and above all by these seven: unity (Kant’s own first category), simplicity, generalization, logical parsimony, deterministic causality, completeness, and the continuum.

So, Einstein’s self-description should have been, at least: *scientist* and man.

MAN

I shall later add under the heading of *Man*, but one main point must suffice for the moment: It is the disparity between, on the one hand, the humanitarian, kindly person with those eyes of a saint, always generous and vulnerable to pity, from his Berlin years on, constantly using his fame on behalf of equality, liberty, moral conviction—and on the other hand, the puzzling and chilling picture Einstein often gave of himself. The louder the acclaim from the world outside, the more did he feel lonely, isolated, unable to have truly close relationships like those he had had joyfully in the early decade of life with Mileva Marić, and with a few close friends, with Michele Besso, Marcel Grossmann, Paul Ehrenfest, and Max von Laue.

Moreover, while seemingly always approachable, those who knew him well noted that Einstein would sometimes suddenly seem to leave our world for a time, withdrawing into his own, the other one—perhaps the kind of transformation which Goethe called “a loving self-drowning into Nature.”

Einstein’s complexity is hinted at by these and other apparent internal opposites that we shall encounter again. In studying the lives and works of others, such as Kepler, Bohr, and Fermi, I came in each case also upon puzzling diametricals, whether in their science or in their personal characteristics. But I suspect that such perceptions, made by us earth-bound people, may often be only optical illusions. What appear to us down here as contrary parts may well be, up there, elements that combine and help to *produce* that extraordinary scientist’s particular brilliance. It is analogous to what one may call the Rainbow Illusion, because that bright, intangible display, appearing to us in its very different colors, is not really up in the sky. It exists only on our own retinas.

Perhaps just because Einstein could live with, and bridge, what seem to us puzzling contradictions in his life and character, this man was able to find unities among the contradictions and dualities in the *physics* of his time, such as removing the antitheses between the electromagnetic and mechanistic world-views, between space and time, between inertial mass and energy—all resolved by Relativity Theory; attacking also the antithesis between the wave theory of light and photoelectric emission; and even overcoming the epistemological differences between empiricism and rationalism, as well as emotionally, within himself, the contrary pulls of realism and romanticism.

So: scientist, man, and now good European.

A GOOD EUROPEAN

The historian Fritz Stern once wrote: “Einstein and Germany: they illuminate each other.” Especially because we are meeting in Berlin, we must not overlook Einstein’s apparent complexity on the topic of his nationality. Certainly he was a German, born to a family that on both sides could trace its origins in southern Germany to at least the seventeenth century. He was educated to his mid-teens in Munich, and later, starting from age thirty-five, was the holder of very distinguished academic positions in Berlin for nearly twenty years. As I noted, during the worst part of World War I, Einstein refused a very attractive offer from abroad, saying he would not want to separate himself from his excellent colleagues in Berlin. And in the immediate aftermath of that war, he worked energetically against the isolation of German scholars.

But it is equally well established that, when it came to declaring a choice, more often than not he rejected that nationality label, starting with his early flight from Munich to Italy and Switzerland, renouncing his German citizenship at the time. Especially from 1914, most memorably in 1933, after having again discarded his German citizenship, he declared himself to be a European at a time when Europe meant barely more than a geographical entity. Long before the pioneering vision of Konrad Adenauer, Jean Monnet, Robert Schuman, and Paul Henry Spaak, Europe existed as a political and economic entity chiefly in the imagination of the likes of G. F. Nicolai, whose ill-fated manifesto of October 1914 called for the creation of “an organic unity of Europe,” or in Count Coudenhove-Kalergi and his supranational Pan-Europa movement of the 1920s. That movement counted among its members Sigmund Freud, Thomas Mann, Rainer Maria Rilke, Miguel de Unamuno—and Einstein, who even wrote an article on Pan-Europa and spoke out in defense of what he called “European civilization.” Again, as in his science, Einstein prophesied Europe’s eventual unification, just when that was thought by almost all others to be blatantly utopian and impossible.

Today, with all its difficulties, there is of course an EU, and given the current hegemonic ambitions on other continents, there will soon have to be a stronger EU. But Einstein, the most famous and self-declared internationalist of his time, looked even beyond an organic unity of Europe, and lent his fame to that cause. He lived to see with pleasure the beginnings of one of the most promising developments in Western history—the rise of a previously unimaginable set of internationalizing institutions. With all their flaws and faults, with their wrong starts and mistakes, today there is a United Nations and a UNESCO, a World Health Organization, and similar ones for Food, Trade, and Banking, an International Criminal Court, international protocols on the Environment, on Arms Inspection, and on and on. Equally significantly, in science itself, where Einstein contributed to chemistry, cosmology, mathematics, and inventive engineering as well as to physics, there is forming now a kind of Bose-Einstein condensate. To cite only one parochial example of a worldwide trend toward interdisciplinary research: A new building with the remarkable name “Laboratory for Integrated Science and Engineering” is now going up next to our old physics building at my university. That lab can unite in common research faculty and students from about a dozen fields. So, both in international relations and in science, something is trying to be born, just as the man from Ulm had intuited, had hoped for, had worked for, long ago.

Still, there is here again another dimension to Einstein. While in his years in Germany he was, in sociopolitical terms, only ambivalently a German, preferring to be a good European and even a world citizen, he presents another, different view if we look at another characteristic that he did not mention in his brief self-description: Einstein was quite recognizably a German *Kulturträger*.

THE PREPARATION OF A *KULTURTRÄGER*

To be sure, Einstein’s reputation as an obstinate, antiauthoritarian nonconformist and defiant rebel—even as a vagabond and gypsy, as he repeatedly described himself—is solidly grounded in many of his actions, and is lively in the popular imagination. But we find equal evidence for viewing Einstein as a cultural traditionalist, even of the kind that the sociologist Karl Mannheim had identified as a free-floating intellectual [*freischwebende Intelligenz*], one without a well-defined anchor in society. More than that, there is evidence that even Einstein’s science itself had roots in the standard *Kultur* of his youth and his early years, in the European and especially in the German literary and philosophical cultural tradition.

I need not linger long over Einstein’s German-based *scientific* education as part of his cultural preparation. In his very early youth, he read with

enthusiasm popular science books by Ludwig Büchner, Aaron Bernstein, and Alexander von Humboldt. We know from his so-called love letters to Mileva, written while he was hatching those key papers during the very period we are celebrating, that this bookworm—as even his mother called him—who always preferred self-cultivation, was carefully studying books and articles in physics. Here is the list of works he said he studied, in the order in which he gave them in those early letters to Mileva: Paul Drude, Hermann von Helmholtz, Heinrich Hertz, Ludwig Boltzmann (“absolutely magnificent”), Ernst Mach, Wilhelm Wien, Gustav Kirchhoff, Wilhelm Ostwald, Planck, Philipp Lenard, Hendrik Lorentz, Woldemar Voigt, and as we know from other sources, importantly, August Föppl. It is a splendid, almost entirely German diet for any young physicist in Wilhelmian Germany.

Bildung, the process by which the German of his day acquired the products and attitudes of *Kultur*, far exceeded learning from science books. A biographer who was also a member of the family (Rudolf Kaiser) revealed that in the home of Einstein’s childhood, evenings would typically include listening to his mother playing classics on the piano or getting her help with his violin lessons from age six, perhaps introducing him already then to his life-long favorites, Bach and Mozart. His father would assemble the family around the lamplight to read aloud from writers such as Friedrich Schiller and Heinrich Heine. Through a regular guest of the family, Max Talmey, the precocious youngster was introduced to the philosophy of Immanuel Kant, starting with the *Critique of Pure Reason*, at the tender age of thirteen. He reread it at sixteen, and while a student at the Technical Institute in Zürich, young Einstein enrolled in an optional lecture course on Immanuel Kant. In 1918 he wrote to Max Born that he was reading Kant’s *Prolegomena*, saying he was “beginning to comprehend the enormous suggestive power that emanated from that fellow [*von diesem Kerl*].” Later, Einstein wrote a lengthy review on a book analyzing Kant’s philosophy, and he referred repeatedly to Kant’s ideas in his conversations and correspondence.

All this of course did not at all make Einstein a follower of transcendental idealism; but it is the background to Einstein’s own twist. He explicitly freed Kantian Categories from their unalterable a priori, letting his own version be chosen freely, and thus making them a central tool in his epistemology.

One could further elaborate the *Bildung* of this German *Kulturträger*. Here it must suffice to refer to some rough indicators, such as the curricula at his Munich *Gymnasium* and in his school in Aarau, designed for the preparation of young aspirants to the *Bildungsbürgertum*. We have also the extensive reading list of books Einstein discussed at length with two friends in Bern at their private *Akademie Olympia*, meeting sometimes several times a week, during Einstein’s most creative period in science: there we find, for example,

Baruch Spinoza, David Hume, Georg Riemann, Henri Poincaré, Mach, Kirchhoff, Helmholtz, as well as literary classics from Sophocles on. Throughout his life Einstein was a man of the book, to a much higher degree than other scientists whom I have studied. The remarkably diverse collection of volumes in his library grew constantly. Even if we look only at the German-language books published before 1910 that survived in Einstein's Princeton household, the list includes much of the canon of the time: Boltzmann, Büchner, Friedrich Hebbel, the collected works of Heine in two editions, Helmholtz, von Humboldt, many books of Kant, Gotthold Lessing, Mach, Friedrich Nietzsche, and Arthur Schopenhauer. But what looms largest are the collected works of Johann von Goethe in a thirty-six volume edition and another of twelve volumes, plus two volumes on his Optics, one on the exchange of letters between Goethe and Friedrich von Schiller, and a separate volume of *Faust*. So it is no surprise that young Einstein, while a student at the Zürich Polytechnic and still regarding himself as a kind of bohemian at war with the "philistines," had also taken a second optional course while preparing to become a high school science teacher. The title of the course was nothing less than *Goethe, Werke und Weltanschauung*.

Goethe was of course the prime exemplar in the cultural context of the time from which, I maintain, some major German scientists seemed to draw courage for their originality. Some of Goethe's writings were to be thought about, written about, and quoted to each other, usually without attribution, like a secret Masonic handshake of mutual recognition and cultural legitimation. Physicists of those days, such as Wien, Boltzmann, Arnold Sommerfeld, Born, and Erwin Schrödinger, interspersed their lectures and books with quotations from Goethe. In Helmholtz's volume of popular lectures, mostly on science—on which, by the way, Einstein wrote a review—the first and last essays are on Goethe. And when Einstein wrote to Sigmund Freud, he listed three "moral and spiritual leaders"—Jesus, Kant, and of course Goethe, the iconic center of a movement of German idealism and neo-Romanticism.

Within that aesthetic-philosophical movement—to which Einstein, the obsessed questor for *Verallgemeinerung*, was exposed all his life—the insistent message was, as David Cassidy put it, the search for

some sort of transcendent higher unity, for the existence of permanent ideas or forces that supersede or underlie the transient, ephemeral world of natural phenomena, practical applications, and the daily struggle of human existence. The scholar, the artist, the poet, the theoretical physicist, all strove to grasp that higher reality, a reality that because of its permanence and transcendence must reveal ultimate "truth," and hence serve as a unifying basis for comprehending . . . the broader world of existence in its many manifestations.

And the historian of science, Anne Harrington, agreed when she wrote: "Goethe's resulting aesthetic-teleological vision of living nature would subsequently function as one of the later generation's recurrent answers to the question of what it 'meant' to be a holistic scientist in the grand German style."

To these messages, emanating from the surrounding culture, Einstein resonated in his central preoccupation: above all, the search for a general *Verallgemeinerung*, for unity. As he put it in an essay on one of his heroes, Johannes Kepler, the aim of the search for unity in science was to find "the mysterious harmony of the world into which we are born."

When considering Einstein as a traditional carrier of culture, one must also not omit mentioning his love for Spinoza and for Schopenhauer. He often read, referred to, and quoted both of these authors. They furnished emotional and intellectual support for his desperate hold on the theme of scientific determinism, even while the large majority of his contemporaries in physics went triumphantly over to the counter theme, indeterminism. Today almost all scientists regard Einstein to have been wrong on that point, misled by that particular thematic loyalty.¹

So, Einstein as scientist, as man, as European, as culture carrier.

A JEW

And, last but not least, as on his own list, Einstein the Jew—but a Jew whose theological views few rabbis would approve. On that dimension in Einstein, with typical fluctuations between extremes, I need say little here. He reported on the first page of his *Autobiographical Notes* that as a child, through reading "the stories of the Bible," he "came to a deep religiosity," which he called his first "religious paradise of youth," "a first attempt to free myself from the chains of the 'merely personal.'" He then abandoned it on finding his second paradise, science. When about fifteen, he had himself formally withdrawn from the roles of the synagogue. For some seventeen years more, he was essentially without denomination, or *konfessionslos*, as he wrote on his 1901 application for Swiss citizenship. But his friend and biographer, Philipp Frank, told me that when Einstein was appointed Professor at the German University in Prague in 1911, he had to fill out a questionnaire before delivering his oath of loyalty to the reigning monarch, Kaiser Franz Joseph, mandatory for all civil servants. For his religious affiliation, Einstein began to write *konfessionslos*. A friend stopped him, saying, "You must have some religion, otherwise you can't take the oath." So Einstein wrote, reluctantly, "Mosaisch," and he later joked, "It was Franz Joseph who made me into a Jew."

But what really reestablished Einstein's life-long identification with what he called "our tribe" was this city, Berlin. As Einstein put it, "there I discovered

for the first time that I *was* a Jew.” From 1914 on, soon after his arrival in Berlin and more and more intensely in the wake of his fame of 1919, he became all too aware of the increasingly brutal anti-Semitism and the vicious attacks on him from extreme segments of the public, as well as from scientists, including one Nobel Prize scientist, Philipp Lenard, who openly called Einstein’s theories “a Jewish fraud.”

Much of the rest of the world was also and indeed still is infected by some variant of that persistent virus. But of course, Germany was a special case. In 1919, General Paul von Hindenburg had to testify why Germany had lost the war. He had a ready answer, one that resonated for decades: Germany’s brave soldier had been betrayed, “stabbed in the back,” by communists, Jews, and women. In 1920, the German ambassador in London felt it necessary to write confidentially to his Ministry of Exterior that “Professor Einstein is just at this time for Germany a cultural factor of first rank. . . . We should not drive such a man out of Germany with whom we can carry on real *Kultur* propaganda.” One year later, with Nazi gangs already roaming the streets, Einstein told Philipp Frank that he was unlikely to remain in Germany for another ten years. As usual, his prediction was close to the mark. By May 1933, his books were among those being burned and his property confiscated. In 1922, he left Berlin for some months after his friend, Germany’s Foreign Minister Walther Rathenau, had been assassinated in June of that year, in one of about 300 of such murders since 1918 by right-wing Nationalist fanatics. Einstein’s name was reported to be on the list of the next intended victims. He cancelled his lectures, some of which had been interrupted by rowdies, and left, feeling it wise to accept invitations from abroad that required a lengthy absence from Germany. As he put it frankly in a letter at the time, he felt he had to “escape the increasing danger.”

After his journey to Japan, during which he heard about the award of his Nobel Prize, he went in February 1923 to Jerusalem. There he gave what was effectively the first major lecture at Hebrew University, whose establishment had become one of Einstein’s passions. After his return to Berlin in 1923, Einstein was told of a continuing danger to his life, and he felt he had to flee again, this time to Leyden in the Netherlands.

From that time on, with the stubbornness he often declared to be one of his most evident characteristics, Einstein became more and more openly and emotionally explicit about and involved in a Jewish identity. He wrote finally to Abba Eban in 1952: “My relationship to the Jewish people has become my strongest human bond.” From his Berlin days on, Einstein was attracted to Zionism for two major reasons. One was that he thought a Jewish commonwealth in Palestine, then under British rule, would be a solution for the suffering and the precarious predicament of young Jews who were being denied

access to education and employment in much of Europe, but who might flourish at the planned Hebrew University in Jerusalem. The other reason was to give the widely dispersed fellow religionists a spiritual home. As Isaiah Berlin put it in an essay, *Einstein and Israel*, Einstein's "Zionism was grounded in the belief that basic human needs create a right to their satisfaction: men have an inalienable right to freedom from hunger, nakedness, insecurity, injustice, and from homelessness too." One may imagine that if Einstein somehow returned today, he would be most preoccupied with two topics—surely with the brilliance of today's physics, but also with the tragedy of the Middle East.

Concluding this brief sketch of Einstein's complex Jewish identity, one must note that, just as he devised his own physics in resonance with German science and German culture, he also invented his mature religiosity in resonance with earlier European philosophy and theology, above all with that of Spinoza, whom Einstein read and quoted and reread for half a century and whose conception of the Deity as Reason embodied in Nature he fully accepted. In several essays starting in 1930, Einstein described his own so-called Cosmic Religion, in which he tried, as usual, to bring together seeming incommensurables, this time the awe of religiosity and the passion for science. Einstein fashioned thereby what effectively was his Third Paradise, the unification of his early, first, and second ones. In the pursuit of his elevated thoughts in science, he had found himself caught up in an emotionally deep religious experience, a glimpse of the vision of a divine Nature in its unity and harmony. He once defined his search for a Cosmic Religion in highly charged words: "The individual feels the vanity of human desires and aims, and the nobility and marvelous order which are revealed in Nature and in the world of thought. He feels the individual destiny as an imprisonment, and seeks to experience the totality of existence as a unity full of significance."

Those few lines seem to me to describe well one main theme running through Einstein's life and thoughts, from beginning to end.

EPILOGUE

A *Kulturträger*, properly speaking, not only imbues and represents the culture of his time and place, but also stimulates others, widens their horizon, imagination, and vocabulary. That process certainly was the fate of Einstein's ideas and publications as others used them, often to his surprise and puzzlement. One can trace Einstein's influence on the shaping of the imagination of his contemporaries and their followers in a great variety of fields, from theologians such as Paul Tillich, philosophers including Henri Bergson, Alfred North Whitehead, and Ernst Cassirer, to logical empiricists in Europe and pragmatists in the United States. All adopted or struggled with some of Einstein's

ideas as they understood them. So did cultural anthropologists and psychologists, such as Claude Lévy-Strauss and Jean Piaget. Einstein had special trouble with some art historians who wanted him to be the father of cubism. And most of us have seen an Einstein impersonated on the stage, in plays and in an opera. Poets and novelists by the dozen tried their hands at celebrating or incorporating some Einsteiniana.

A special case is Thomas Mann, whose skillful transference of ideas from physics, biology, and medicine ran through many of his books, and particularly his *Zauberberg*. Mann recorded as an emotional highpoint of his life his meeting with Einstein in 1939, when he received from the physicist-philosopher the Einstein Medal. In his response, Mann said, "I am able at least to divine that in physics, of which Albert Einstein is the world renowned representative, there happen things more fantastic than all that fiction can invent, and more important, more transformative for mankind and its world picture than everything literature can bring about."

This accolade hints at one answer to the question, why is Einstein still so alive today, in the imagination of people high and low, in all segments of the globe—a fact that Einstein, who experienced that phenomenon constantly, was himself completely unable to explain, dismissing it as a case of mass hysteria. But a good part of the explanation may be this: The lives and works of some scientists project to the wider populace a charismatic view of science. Building on Max Weber's original discussion of "charismatic authority," this concept has been the subject of scholarly study extending the concept to scientists, for example in Joseph Ben-David's *Scientific Growth* and earlier in Robert K. Merton's book, *Science, Technology, and Society in Seventeenth-Century England*. The social scientist Bernard H. Gustin elaborated on this perception, writing that science at the highest level is charismatic because scientists devoted to such tasks are "thought to come into contact with what is essential in the universe."

This observation catches precisely why so many people the world over, despite or perhaps because they know little about Einstein's science, still seek after him and feel somehow elated, uplifted, when contemplating his iconic image. They extend to their conception of Einstein what the historian Jacob Burckhardt identified long ago as the essential "power of veneration within us." Happily, mankind has a need to admire and seeks out objects that satisfy that need.

I began by posing the question, Who is Einstein for us, and what accounts for his being still so alive. I have hinted at the rich complexity of that great lion. He will of course never be fully fathomed, but we can now dare to set our sights, one by one, on his many extraordinary roles in history. Let our symposium begin.