

Einstein & Faith

In an exclusive excerpt from a new biography, the great physicist wrestles with what it means to believe in God

BY WALTER ISAACSON

HE WAS SLOW IN LEARNING HOW to talk. "My parents were so worried," he later recalled, "that they consulted a doctor." Even after he had begun using words, sometime after the age of 2, he developed a quirk that prompted the family maid to dub him "der Depperte," the dopey one. Whenever he had something to say, he would try it out on himself, whispering it softly until it sounded good enough to pronounce aloud. "Every sentence he uttered," his worshipful younger sister recalled, "no matter how routine, he repeated to himself softly, moving his lips." It was all very worrying, she said. "He had such difficulty with language that those around him feared he would never learn."

His slow development was combined with a cheeky rebelliousness toward authority, which led one schoolmaster to send him packing and another to declare that he

would never amount to much. These traits made Albert Einstein the patron saint of distracted schoolkids everywhere. But they also helped make him, or so he later surmised, the most creative scientific genius of modern times.

His cocky contempt for authority led him to question received wisdom in ways that well-trained acolytes in the academy never contemplated. And as for his slow verbal development, he thought that it allowed him to observe with wonder the everyday phenomena that others took for granted. Instead of puzzling over mysterious things, he puzzled over the commonplace. "When I ask myself how it happened that I in particular discovered the relativity theory, it seemed to lie in the following circumstance," Einstein once explained. "The ordinary adult never bothers his head about the problems of space and time. These are things he has thought of as a child. But I developed so slowly that I began to wonder about space and time only when I was already grown up. Consequently, I probed more deeply into the problem than an ordinary child would have."

It may seem logical, in retrospect, that a combination of awe and rebellion made Einstein exceptional as a scientist. But what is less well known is that those two traits also combined to shape his spiritual journey and determine the nature of his faith. The rebellion part comes in at the beginning of his life: he rejected at first his parents' secularism and later the concepts of religious

His credo For Einstein, here circa 1930, faith meant a reverence for the creation of the universe and its laws—and the mysteriousness of their nature

ritual and of a personal God who intercedes in the daily workings of the world. But the awe part comes in his 50s when he settled into a deism based on what he called the "spirit manifest in the laws of the universe" and a sincere belief in a "God who reveals Himself in the harmony of all that exists."

Einstein was descended, on both parents' sides, from Jewish tradesmen and peddlers who had, for at least two centuries, made modest livings in the rural villages of Swabia in southwestern Germany. With each generation they had become increasingly assimilated into the German culture they loved—or so they thought. Although Jewish by cultural designation and kindred instinct, they had little interest in the religion itself.

In his later years, Einstein would tell an old joke about an agnostic uncle who was the only member of his family who went to synagogue. When asked why he did so, the uncle would respond, "Ah, but you never know." Einstein's parents, on the other hand, were "entirely irreligious." They did not keep kosher or attend synagogue, and his father Hermann referred to Jewish rituals as "ancient superstitions," according to a relative.

Consequently, when Albert turned 6 and had to go to school, his parents did not care that there was no Jewish one near their home. Instead he went to the large Catholic

Devoted siblings
Einstein and his younger sister Maja in about 1884. She later recalled his childhood difficulty with language



FROM LEFT: HULTON ARCHIVE—GETTY IMAGES; BETTMANN—CORBIS

school in their neighborhood. As the only Jew among the 70 students in his class, he took the standard course in Catholic religion and ended up enjoying it immensely.

Despite his parents' secularism, or perhaps because of it, Einstein rather suddenly developed a passionate zeal for Judaism. "He was so fervent in his feelings that, on his own, he observed Jewish religious strictures in every detail," his sister recalled. He ate no pork, kept kosher and obeyed the strictures of the Sabbath. He even composed his own hymns, which he sang to himself as he walked home from school.



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Einstein's greatest intellectual stimulation came from a poor student who dined with his family once a week. It was an old Jewish custom to take in a needy religious scholar to share the Sabbath meal; the Einsteins modified the tradition by hosting instead a medical student on Thursdays. His name was Max Talmud, and he began his weekly visits when he was 21 and Einstein was 10.

Talmud brought Einstein science books, including a popular illustrated series called *People's Books on Natural Science*, "a work which I read with breathless attention," said Einstein. The 21 volumes were written by Aaron Bernstein, who stressed the interrelations between biology and physics, and reported in great detail the experiments being done at the time, especially in Germany.

Talmud also helped Einstein explore the wonders of mathematics by giving him a textbook on geometry two years before he was scheduled to learn that subject in school. When Talmud arrived each Thursday, Einstein delighted in showing him the problems he had solved that week. Initially, Talmud was able to help him, but he was soon surpassed by his pupil. "After a short time, a few months, he had worked through the whole book," Talmud recalled. "Soon the flight of his mathematical genius

was so high that I could no longer follow."

Einstein's exposure to science and math produced a sudden transformation at age 12, just as he would have been readying for a bar mitzvah. He suddenly gave up Judaism. That decision does not appear to have been drawn from Bernstein's books because the author made clear he saw no contradiction between science and religion. As he put it, "The religious inclination lies in the dim consciousness that dwells in humans that all nature, including the humans in it, is in no way an accidental game, but a work of lawfulness that there is a fundamental cause of all existence."

Einstein would later come close to these sentiments. But at the time, his leap away from faith was a radical one. "Through the reading of popular scientific books, I soon reached the conviction that much in the stories of the Bible could not be true. The consequence was a positively fanatic orgy of free thinking coupled with the impression that youth is intentionally being deceived by the state through lies; it was a crushing impression."

Einstein did, however, retain from his childhood religious phase a profound faith in, and reverence for, the harmony and beauty of what he called the mind of God as it was expressed in the creation of the universe and its laws. Around the time he turned 50, he began to articulate more clearly—in various essays, interviews and letters—his deepening appreciation of his belief in God, although a rather impersonal version of one. One particular evening in 1929, the year he turned 50, captures Einstein's middle-age deistic faith. He and his wife were at a dinner party in Berlin when a guest expressed a belief in astrology. Einstein ridiculed the notion as pure superstition. Another guest stepped in and similarly disparaged religion. Belief in God, he insisted, was likewise a superstition.

At this point the host tried to silence him by invoking the fact that even Einstein harbored religious beliefs. "It isn't possible!" the skeptical guest said, turning to Einstein to ask if he was, in fact, religious. "Yes, you can call it that," Einstein replied calmly. "Try and penetrate with our limited means the secrets of nature and you will find that, behind all the discernible laws and connections, there remains something subtle, intangible and inexplicable. Veneration for this force beyond anything that we can comprehend is my religion. To that extent I am, in fact, religious."

Shortly after his 50th birthday, Einstein also gave a remarkable interview in which he was more revealing than he had ever been about his religious sensibility. It was with George Sylvester Viereck, who had been born in Germany, moved to America



as a child and then spent his life writing gaudily erotic poetry, interviewing great men and expressing his complex love for his fatherland. Einstein assumed Viereck was Jewish. In fact, Viereck proudly traced his lineage to the family of the Kaiser, and he would later become a Nazi sympathizer who was jailed in America during World War II for being a German propagandist.

Viereck began by asking Einstein whether he considered himself a German or a Jew. "It's possible to be both," replied Einstein. "Nationalism is an infantile disease, the measles of mankind."

Should Jews try to assimilate? "We Jews have been too eager to sacrifice our idiosyncrasies in order to conform."

To what extent are you influenced by Christianity? "As a child I received instruction both in the Bible and in the Talmud. I am a Jew, but I am enthralled by the luminous figure of the Nazarene."

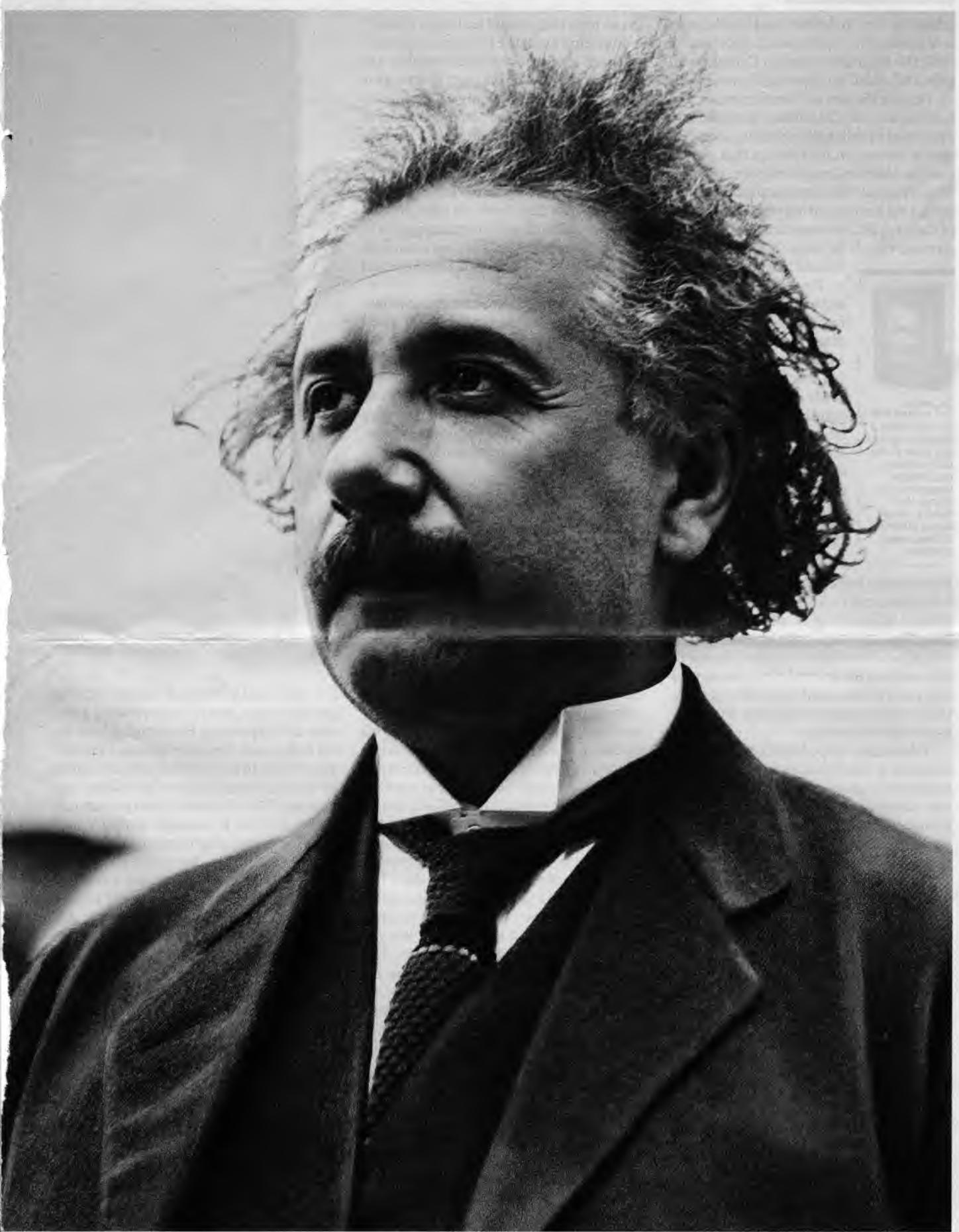
You accept the historical existence of Jesus? "Unquestionably! No one can read the Gospels without feeling the actual presence of Jesus. His personality pulsates in every word. No myth is filled with such life."

Do you believe in God? "I'm not an atheist. I don't think I can call myself a pantheist."

FROM LEFT: A.P. (2); BETTMANN-CORBIS

"Entirely irreligious" Einstein's parents, Pauline and Hermann, considered Jewish rituals "ancient superstitions"







Music lover In 1930 Einstein, an accomplished violinist, participated in a concert at a Berlin synagogue that raised money for Jewish causes

'Human beings in their thinking, feeling and acting are not free but are as causally bound as the stars in their motions.'

—ALBERT EINSTEIN

The problem involved is too vast for our limited minds. We are in the position of a little child entering a huge library filled with books in many languages. The child knows someone must have written those books. It does not know how. It does not understand the languages in which they are written. The child dimly suspects a mysterious order in the arrangement of the books but doesn't know what it is. That, it seems to me, is the attitude of even the most intelligent human being toward God. We see the universe marvelously arranged and obeying certain laws but only dimly understand these laws."

Is this a Jewish concept of God? "I am a determinist. I do not believe in free will.

Jews believe in free will. They believe that man shapes his own life. I reject that doctrine. In that respect I am not a Jew."

Is this Spinoza's God? "I am fascinated by Spinoza's pantheism, but I admire even more his contribution to modern thought because he is the first philosopher to deal with the soul and body as one, and not two separate things."

Do you believe in immortality? "No. And one life is enough for me."

Einstein tried to express these feelings clearly, both for himself and all of those who wanted a simple answer from him about his faith. So in the summer of 1930, amid his sailing and ruminations in Caputh, he composed a credo, "What I Believe," that he recorded for a human-rights group and later published. It concluded with an explanation of what he meant when he called himself religious: "The most beautiful emotion we can experience is the mysterious. It is the fundamental emotion that stands at the cradle of all true art and science. He to whom this emotion is a stranger, who can no longer wonder and stand rapt in awe, is as good as dead, a snuffed-out candle. To sense that behind anything that can be experienced there is something that our

minds cannot grasp, whose beauty and sublimity reaches us only indirectly: this is religiousness. In this sense, and in this sense only, I am a devoutly religious man."

People found the piece evocative, and it was reprinted repeatedly in a variety of translations. But not surprisingly, it did not satisfy those who wanted a simple answer to the question of whether or not he believed in God. "The outcome of this doubt and befogged speculation about time and space is a cloak beneath which hides the ghastly apparition of atheism," Boston's Cardinal William Henry O'Connell said. This public blast from a Cardinal prompted the noted Orthodox Jewish leader in New York, Rabbi Herbert S. Goldstein, to send a very direct telegram: "Do you believe in God? Stop. Answer paid. 50 words." Einstein used only about half his allotted number of words. It became the most famous version of an answer he gave often: "I believe in Spinoza's God, who reveals himself in the lawful harmony of all that exists, but not in a God who concerns himself with the fate and the doings of mankind."

Some religious Jews reacted by pointing out that Spinoza had been excommunicated from Amsterdam's Jewish community for holding these beliefs, and that he had also been condemned by the Catholic Church. "Cardinal O'Connell would have done well had he not attacked the Einstein theory," said one Bronx rabbi. "Einstein would have done better had he not proclaimed his non-belief in a God who is concerned with fates and actions of individuals. Both have handed down dicta outside their jurisdiction."

But throughout his life, Einstein was consistent in rejecting the charge that he was an atheist. "There are people who say there is no God," he told a friend. "But what makes me really angry is that they quote me for support of such views." And unlike Sigmund Freud or Bertrand Russell or George Bernard Shaw, Einstein never felt the urge to denigrate those who believed in God; instead, he tended to denigrate atheists. "What separates me from most so-called atheists is a feeling of utter humility toward the unattainable secrets of the harmony of the cosmos," he explained.

In fact, Einstein tended to be more critical of debunkers, who seemed to lack humility or a sense of awe, than of the faithful. "The fanatical atheists," he wrote in a letter, "are like slaves who are still feeling the weight of their chains which they have thrown off after hard struggle. They are creatures who—in their grudge against traditional religion as the 'opium of the masses'—

cannot hear the music of the spheres."

Einstein later explained his view of the relationship between science and religion at a conference at the Union Theological Seminary in New York. The realm of science, he said, was to ascertain what was the case, but not evaluate human thoughts and actions about what should be the case. Religion had the reverse mandate. Yet the endeavors worked together at times. "Science can be created only by those who are thoroughly imbued with the aspiration toward truth and understanding," he said. "This source of feeling, however, springs from the sphere of religion." The talk got front-page news coverage, and his pithy conclusion became famous. "The situation may be expressed by an image: science without religion is lame, religion without science is blind."

But there was one religious concept, Einstein went on to say, that science could not accept: a deity who could meddle at whim in the events of his creation. "The main source of the present-day conflicts between the spheres of religion and of science lies in this concept of a personal God," he argued. Scientists aim to uncover the immutable laws that govern reality, and in doing so they must reject the notion that divine will, or for that matter human will, plays a role that would violate this cosmic causality.

His belief in causal determinism was incompatible with the concept of human free will. Jewish as well as Christian theologians have generally believed that people are responsible for their actions. They are even free to choose, as happens in the Bible, to disobey God's commandments, despite the fact that this seems to conflict with a belief that God is all knowing and all powerful.

Einstein, on the other hand, believed—as did Spinoza—that a person's actions were just as determined as that of a billiard ball, planet or star. "Human beings in their thinking, feeling and acting are not free but are as causally bound as the stars in their motions," Einstein declared in a statement to a Spinoza Society in 1932. It was a concept he drew also from his reading of Schopenhauer. "Everybody acts not only under external compulsion but also in accordance with inner necessity," he wrote in his famous credo.

Sparring partner

Physicist Max Born thought Einstein's determinist view of human actions undermined the foundations of morality



A moment of reflection Einstein on the deserted beach at Santa Barbara, Calif., in 1933

"Schopenhauer's saying, 'A man can do as he wills, but not will as he wills,' has been a real inspiration to me since my youth; it has been a continual consolation in the face of life's hardships, my own and others', and an unfailing wellspring of tolerance."

This determinism appalled some friends such as Max Born, who thought it completely undermined the foundations of human morality. "I cannot understand how you can combine an entirely mechanistic universe with the freedom of the ethical individual," he wrote Einstein. "To me a deterministic world is quite abhorrent. Maybe you are right, and the world is that way, as you say. But at the moment it does not really look like it in physics—and even less so in the rest of the world."

For Born, quantum uncertainty provided an escape from this dilemma. Like some philosophers of the time, he latched onto the indeterminacy that was inherent in quantum mechanics to resolve "the discrepancy between ethical freedom and strict natural laws."

Born explained the issue to his wife Hedwig, who was always eager to debate Einstein. She told Einstein that, like him, she was "unable to believe in a 'dice-playing' God." In other words, unlike her husband, she rejected quantum mechanics' view that the universe was based on uncertainties and probabilities. But, she added, "nor am I able to imagine that you believe—as Max has told me—that your 'complete rule of law' means that everything is predetermined, for example whether I am going to have my

child inoculated." It would mean, she pointed out, the end of all moral behavior.

But Einstein's answer was to look upon free will as something that was useful, indeed necessary, for a civilized society, because it caused people to take responsibility for their own actions. "I am compelled to act as if free will existed," he explained, "because if I wish to live in a civilized society I must act responsibly." He could even hold people responsible for their good or evil, since that was both a pragmatic and sensible approach to life, while still believing intellectually that everyone's actions were predetermined. "I know that philosophically a murderer is not responsible for his crime," he said, "but I prefer not to take tea with him."

The foundation of morality, he believed, was rising above the "merely personal" to live in a way that benefited humanity. He dedicated himself to the cause of world peace and, after encouraging the U.S. to build the atom bomb to defeat Hitler, worked diligently to find ways to control such weapons. He raised money to help fellow refugees, spoke out for racial justice and publicly stood up for those who were victims of McCarthyism. And he tried to live with a humor, humility, simplicity and generosity even as he became one of the most famous faces on the planet.

For some people, miracles serve as evidence of God's existence. For Einstein it was the absence of miracles that reflected divine providence. The fact that the world was comprehensible, that it followed laws, was worthy of awe. ■

