



***Einstein: His Life and Universe*
by Walter Isaacson**

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Reviewed by F. David Winter Jr., MD, MSc

What would the world be like if Albert Einstein had never existed? Would the atomic bomb have been

made in time to influence the outcome of World War II? Would Israel and those of the Jewish faith be where they are today?

Only a few individuals make a profound impact on this world. Some do this by deeds, some by might, some by brilliance, and some by force of personality. Albert Einstein did so by the last of these two. Walter Isaacson portrays his distinctive character and gives insight into the nature and the significance of his scientific discoveries in a well-written story of this legendary man.

This most recent biography of the famous scientist adds to the body of knowledge, drawing new information from numerous private papers that were released last year. From these in particular, we gain more insight into Einstein's relationships. Friendly and benevolent to friends, he could be aloof and unsympathetic to family. His two marriages and his children—one born out of wedlock, another who became schizophrenic, and a third who became an engineer—all suffered from lack of attention.

As a child, Einstein was slow to talk and was labeled “the dopey one” by the family maid. Several family members considered him to be “almost backwards.” He grew up as a loner and “occupied himself with quieter things.” Later in school Einstein was said to be different from other children in several ways. First, he had an insatiable curiosity. He would later explain that “curiosity has its own reason for existing.” He felt that there was a purpose for curiosity and used it as his motivation to continually look at the world and ask why.

His other distinguishing trait was a rebellion against dogma. As a student, Einstein incessantly questioned his textbooks and his professors. In frustration, one of his instructors concluded that he would never amount to much. Einstein's college performance was admirable and he had ambitions to teach in a university, but none of his professors would recommend him. He was forced to look outside of the academic world for employment.

The author speculates that Einstein's rebellious nature was necessary for his discoveries. Several contemporary physicists were unable to see beyond the foundations of classical physics at that time. The revered scientist Lord Kelvin went so far as to announce, “There is nothing new to be discovered in physics. All that remains is more and more precise measurement.” Einstein would subsequently upend the scientific community with what another Nobel Prize winner would label “the greatest scientific discovery ever made.” President Dwight Eisenhower would later proclaim, “No other man contributed so much to the vast expanse of 20th century knowledge.”

Einstein's discoveries are encapsulated in this biography. One of his early discoveries concerned light and how it can be regarded not only as a wave but also as a stream of tiny particles. His thoughts about this would later lead to the invention of the laser, an acronym for "light amplification by the stimulated emission of radiation."

A second theory related to the existence of atoms and molecules, which previously had been disputed. And then his special theory of relativity linked time and space, discarding Isaac Newton's pronouncements that both were absolute, constant, and independent. To the delight of science fiction writers, this theory allows for time to change and for people to age differentially.

His general theory of relativity, "one of the most beautiful theories in all of science," is summarized by the famous $E = mc^2$. The idea that mass and energy are interchangeable has led to nuclear energy and, of course, to the big bomb.

The scientific discoveries of Albert Einstein have left their mark on civilization, but so have his leadership in politics and with the Jewish faith. An avowed pacifist, he would change his position in response to Hitler's atrocities. He spoke and counseled about the need for world order and a global authority, with conclusions such as "the only salvation for civilization and the human race lies in the creation of world government." Initially opposed to the concept of a Jewish state, he would also change his mind on this issue after World War II and even considered accepting the presidency of Israel.

Albert Einstein was a complex individual. He possessed a brilliant mind, an expansive imagination, and a rebellious

temperament. He could be proud and arrogant. When his theory of the bending of light by gravity was confirmed, a young graduate student asked him what he would have done if the experiment had proved him to be wrong. He replied, "Then I would have been sorry for the dear Lord as my theory is correct."

Einstein's eccentricity spawned many stories. Once during a walk about town, he became lost and called his office asking for his address. The secretary, not recognizing his voice, refused to give out the information. Einstein then whispered, "Please don't tell anybody, but I *am* Dr. Einstein, and I have forgotten where my house is." Another account tells of his response to the onset of rain while driving in a convertible. Einstein pulled off his hat and stuck it in his coat, explaining to his companions, "My hair has withstood water many times before, but I don't know how many times my hat can." There are also stories about his inattentiveness. Not listening during a banquet in his honor, he began applauding with the audience when his name was announced.

Walter Isaacson is a wonderful storyteller and writes engagingly about this enigmatic, characterful genius. You will have a better understanding of Einstein's impact, his motivations, and his personality after reading this powerful biography.

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