An iconic 20th-century scientific intellectual, theoretical physicist J. (Julius) Robert Oppenheimer was the director of the Los Alamos Laboratory in the remote New Mexico desert where the atomic bombs that destroyed Hiroshima and Nagasaki were designed and assembled in World War II. Biographical studies have placed his life at the crucial point of intersection in modern scientific and American history between managerialist science, technocratic authority, and military power. Scholars, writers, and journalists of science studies have variously interpreted Oppenheimer as embodying core ideas about the modern representation of science and technology, ideas including the role of the scientific statesman, the function of the scientific intellectual, the political authority of science, the morality of science, tensions between science and humanism, and the conflict between a scientist's individual conscience and the national interest.

The Embodiment of the Nuclear Age

An early account of the development of the atomic bomb, Robert Jungk's *Brighter Than a Thousand Suns* (1958) portrayed Oppenheimer as a classic tragic figure, a theme that has recurred in subsequent biographies, historical studies, novels, plays, and films. Sociologist Charles Thorpe in his book *Oppenheimer: The Tragic Intellect* (2006) argued that his subject represented science for the nuclear and mass media age, embodying science for radio, television, and *Time* and *Look* magazines.

Oppenheimer was born on April 22, 1904, in New York, to a wealthy German-Jewish immigrant family. He attended the Ethical Culture School in New York, graduated from Harvard in 1925, and studied at physicist Ernest Rutherford's celebrated Cavendish laboratory at Cambridge University, England. In 1927, he obtained his PhD in Georg-August-Universität in Göttingen, Germany. In Europe, he worked with several leading physicists of the time, including Max Born, Paul Ehrenfest, and Wolfgang Pauli, making important contributions to the then-emerging quantum theory.

In 1929, he was appointed to academic positions at the University of California, Berkeley, and the California Institute of Technology. An exceptional and productive theorist in the 1930s, his brilliant teaching and research abilities, coupled with the devotion he inspired in students, accounted for the creation of the American school of theoretical physics.

Studies have repeatedly referred to Oppenheimer as a complex and enigmatic figure. He was a pacifist who oversaw the creation of a devastating instrument of war. He was a brilliant scientist who never won a Nobel Prize or made a major signature contribution to science. He was a patriot who was publicly humiliated by his government. Tall, thin, cerebral, cultivated, and charismatic, he was an aesthetic and disciplined intellectual, with a developed interest in languages, literature, art, spirituality, international affairs, food, and drink. Friends, students, and colleagues called him Oppy, Oppie, or Opje and recalled the intense gaze from his blue eyes and his trademark porkpie hat, which appeared in May 1948 on the cover of the first edition of *Physics Today*.

Oppenheimer had been indifferent to politics before the 1930s, but during that decade he became involved in liberal and left-wing causes, inspired by rising fascism in Europe, the Spanish civil war, personal relationships, and the domestic economic depression that left unemployed several talented...
young physicists he had trained.

Los Alamos

Responding to the threat that the Nazis could develop powerful weapons, President Franklin Roosevelt established the Manhattan Project in 1941 to design and build an atomic bomb. A year later, Oppenheimer had a leading role in the creation of the project’s key research facility, the Los Alamos Laboratory, possibly the most expensive scientific project in history.

Oppenheimer contributed to the choice of Los Alamos, located on a mesa 7,300 feet above sea level and nicknamed “The Hill” by its staff, arguing successfully that research should be centralized so a network of scientists, including physicists, chemists, engineers, mathematicians, and metallurgists, could work in intense collaboration. Oppenheimer recruited most of the senior scientists personally, with researchers motivated by the promise of ending the war and contributing to a historic project in physics.

In 1943, Oppenheimer was formally made director of the facility, where scientists worked alongside military personnel. Its total population, including the researchers’ families, had reached its highest level of 8,750 in June 1945. Scientists working there attributed the effort’s success to Oppenheimer’s breadth of scientific knowledge and his emphatic and charismatic management style.

On July 16, 1945, Oppenheimer viewed the first explosion of an atomic bomb, named “Trinity,” in the New Mexico desert, and a passage from the Bhagavad Gita, the Hindu scripture that was a major influence on his worldview, passed through his mind, which he later related as: “I am become Death, the destroyer of worlds,” a statement that has come to represent the potential destructive power of scientific knowledge.

As part of a four-scientist panel that discussed the case for using the weapon on a military target in a populated area, Oppenheimer acquiesced in the use of the atomic bomb on Japanese cities. Within the next 2 months, bombs were dropped on Hiroshima and Nagasaki, and Japan surrendered on August 10.

Although he was exulted with his key part in the bomb project and stated that he never regretted his role, he became haunted by his wartime work and was quoted in Time magazine in 1948 as saying: “In some sort of crude sense which no vulgarity, no humor, no overstatement can quite extinguish, the physicists have known sin; and this is a knowledge which they cannot lose” (p. 52). When he met President Harry S. Truman in 1947, Oppenheimer said he felt he had blood on his hands.

The Oppenheimer Case

After the war, his concern over the moral complexities of the bomb emerged during his service as a senior scientific adviser to the U.S. government. As chairman (1947-1952) of the general advisory committee of the Atomic Energy Commission (AEC), he opposed the development of the more powerful hydrogen bomb. He also advocated the internationalization of atomic energy under civilian control.

This opposition angered prominent government, military, and scientific figures, including physicist Edward Teller and AEC chairman Admiral Lewis Strauss, who began political maneuvers to remove Oppenheimer from government duty. This campaign culminated in the AEC’s security hearings of 1954, which took place at the height of U.S. anti-communist feeling. Oppenheimer’s past left-wing associations were reexamined, as was a wartime incident where he temporarily failed to give military
intelligence the name of a man who he claimed approached him for information on atomic energy on behalf of the Soviet Union.

The AEC personnel security board stripped Oppenheimer of his security clearance, published a 993-page transcript detailing aspects of his personal and early political life, and concluded that he had "substantial defects of character." This decision ended Oppenheimer's influence on government science policy.

**Scientific Intellectual**

Afterward, Oppenheimer lectured around the world on the philosophy of science and the relationship between science and society, portraying himself as a liberal humanist and public moralist. He viewed science as a vocation and argued that decisions about the use of science should be made by politicians, not scientists. His book of lectures, *The Open Mind* (1955), advocated international control of atomic energy and discussed how technically fashioned violence had become a central concern of modern science, opposing the Enlightenment ideals of science-driven progress.

In November 1943, he delivered the Reith Lectures for the British Broadcasting Corporation (BBC), describing science as a manifestation of liberal democratic values. He hoped that science and scientific ideas could contribute to culture. The misunderstandings between scientists and lay audiences were rooted in science's historical constitution as an elite endeavor, its work fully understandable only to its practitioners. Difficult in parts to understand by nonspecialists but praised for their poetic quality, these lectures were published as *Science and the Common Understanding* (1954).

Oppenheimer continued to be influential in postwar academic physics. He was appointed director of the Institute of Advanced Study at Princeton in 1947, remaining there after his retirement in 1966, nurturing young physicists including Freeman Dyson and Murray Gell-Mann, and later assumed Albert Einstein's former position as senior professor of physics. President Lyndon Johnson conferred the prestigious Enrico Fermi Award on him in 1963, the highest honor awarded by the AEC, signifying a public rehabilitation of Oppenheimer's reputation.

Oppenheimer received a Presidential Citation and the Medal for Merit for his work at Los Alamos and was a fellow of the National Academy of Arts and Sciences, the American Physical Society, Britain's Royal Society, the National Academy of Sciences, and the American Philosophical Society. More of Oppenheimer's lectures were published as *Some Reflections on Science and Culture* (1960), *The Flying Trapeze: Three Crises for Physicists* (1964), *Uncommon Sense* (1984), and *Atom and Void: Essays on Science and Community* (1989). He was married to Katherine (Kitty) Puening Harrison and together they had two children, Peter and Katherine. He died of throat cancer on February 18, 1967, at age 62.

**See also**

Manhattan Project, Nuclear Weapons

**Further Readings**


https://search.credoreference.com/content/topic/oppenheimer_julius_1904_1967

Fahy, Declan
APA

Chicago

Harvard

MLA