

Reactions to the dawn of the atomic age

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The Shock of Discovery

The explosion of the first atomic bomb at the Trinity site in New Mexico on 16 July 1945 had a transforming impact on the scientists and military officials who witnessed it. Robert Jungk observed in *Brighter Than a Thousand Suns* that many of those present—who otherwise professed no religious faith—“recounted their experiences in words derived from the linguistic fields of myth and theology.” General Thomas Farrell, deputy director of the Manhattan Project, described the “strong, sustained, awesome roar which warned of doomsday and made us feel that we puny things were blasphemous to dare tamper with the forces heretofore reserved to the Almighty.” J. Robert Oppenheimer, director of the Los Alamos scientists and a savant of Eastern religion, reflected on passages from the Bhagavad-Gita, the sacred Hindu epic:

If the radiance of a thousand suns
were to burst into the sky,
that would be like
the splendor of the Mighty One

As the sinister mushroom cloud rose in the distance, Oppenheimer was reminded of another line from the Gita: “I am become Death, the shatterer of worlds.”

The bombings of Hiroshima and Nagasaki left many of the atomic scientists disturbed and bewildered. The scientists suddenly found themselves in an unprecedented and unaccustomed position of public acclaim. As Jungk writes, “the godlike magnitude of their performance had given them the standing of mythical figures. . . . They were called titans and compared with Prometheus.”¹ Yet many felt uneasy about the destructive power their discoveries had unleashed. Some began to contemplate how they might put their new-found status to use in urging international control of atomic energy. A few expressed the cautious hope, as biophysicist Eugene Rabinowitch phrased it, “that the fate of Hiroshima and Nagasaki would cause [humankind] to turn a new leaf.” Rabinowitch invited fellow scientists to be part of a “conspiracy to preserve our civilization by scaring [people] into rationality.”²

It is one of history's supreme ironies that Einstein, the great pacifist, played a key role in urging the development of atomic weapons. Einstein's August 1939 letter to President Roosevelt recommending the development of a US nuclear program became the basis for the creation of the Project. At the end of the war Einstein regretted his action and felt that he and the atomic scientists who worked on the Manhattan Project had been deceived. He had supported the bomb only to guard against possible German development of such a weapon. He assumed that the United States would never use the bomb except to deter or retaliate against the use of such a weapon by another country. The bombing of a prostrate Japan on the verge of surrender was not what he had envisioned.

The feared German bomb never materialized. American military leaders had unequivocal proof well before the end of the war that Germany did not have a functioning atomic bomb program. When allied troops entered Germany after D-Day, a special intelligence unit code-named Alsos followed close behind to search for the suspected nuclear program. They tested Germany's rivers and found no evidence of the radionuclides that would signal the presence of uranium processing. They searched German-controlled research facilities in occupied France and Germany. They reviewed documents and interviewed scientists. They discovered that the German atomic research program was at least two years behind that of the United States, and that Germany possessed no factories for the production of enriched uranium or plutonium. By early 1945 it was clear that the dreaded German bomb did not exist.

The fruitless search for the phantom German atomic bomb in 1944-45 had an eerie parallel nearly sixty years later in the search for weapons of mass destruction in Iraq. In both cases teams of scientists and technicians scoured conquered territory to find evidence of menacing weapons. In both cases the investigating scientists came up empty handed. Research and development activities were discovered, but no evidence was found of a functioning atomic weapons program. Of course there were many differences between the two episodes. In the case of Germany, the menace of expansionist tyranny was very real and had plunged Europe and much of the world into war. Eminent nuclear physicists expressed genuine concerns about the possibility of a German bomb program. In the case of Iraq, by contrast, the government of Saddam Hussein was weakened by defeat in previous war and years of sanctions and did not threaten international security. Nuclear scientists expressed concerns about Iraq's nuclear ambitions, but emphasized that international monitors from the International Atomic Energy Agency had already verified the destruction of Baghdad's nuclear weapons program in the early 1990s. Few experts believed the Bush administration's claim that Iraq actually possessed weapons of mass destruction.

Scientists Organize

One of the first scientists to sound the alarm about the danger of atomic weapons was Leo Szilard. As early as September 1942, Szilard drafted a memo outlining the ominous implications of the work upon which they were embarked. “We cannot have peace in a world in which various sovereign nations have atomic bombs in the possession of their armies.”³ At the Metallurgical Laboratory at the University of Chicago, where the first nuclear chain reaction took place in December 1942, a committee of atomic scientists began addressing the political problems of controlling and harnessing nuclear energy. The committee produced a 1944 report, “Prospectus on Nucleonics,” which warned that attempts to achieve atomic supremacy could not bring lasting security. The report argued for the creation of “an international administration with police powers which can effectively control . . . the means of nucleonic warfare.”⁴

In June 1945 the Chicago scientists produced a new report, largely written by Rabinowitch, which argued against the military use of the bomb against Japan. The report warned that there could be no effective defense against atomic weapons. It argued against bombing Japan because this could shatter the prospects for establishing the necessary degree of trust and mutual confidence to establish international control. “If the United States were to be the first to release this new means of indiscriminate destruction upon mankind, she would sacrifice public support throughout the world, precipitate the race for armaments, and prejudice the possibility of reaching an international agreement on the future control of such weapons,” the scientists wrote.⁵ The report argued for a public demonstration of the new weapon in a desert or on a barren island. It urged American leaders to renounce the use of such weapons in the future and to join in the establishment of an international control mechanism.

When the government rejected the scientists’ reports and proceeded with the bombings of Japan, the scientists joined together to form the Federation of Atomic Scientists, which soon changed its name to the Federation of American Scientists. Their mission was to enlighten the public about the new atomic danger and apply pressure on political leaders for international control. By early 1946 the FAS claimed seventeen local groups with nearly 3,000 members, including 90 percent of the scientists who had worked on the bomb. At the same time Rabinowitch and some of his colleagues in Chicago founded a new publication, the *Bulletin of Atomic Scientists*, which was to become, and remains today, the premier journal and most authoritative source of information on the state of the nuclear danger. Featuring the distinctive “doomsday clock,” designed by Edward Teller, the *Bulletin* by mid-1947 had a circulation of 20,000, including scientists in seventeen countries. Szilard and Einstein organized the parallel Emergency Committee of Atomic Scientists, to help

raise funds for the movement. Einstein served as chair of the committee, which was endorsed by other prominent scientists, including Hans Bethe and Linus Pauling. Szilard was the active force behind the Committee and played a crucial role in building the scientists movement.⁶

The atomic scientists' most urgent demand was for international control of atomic energy. For a brief time in early 1946 they helped to convince an otherwise skeptical US government to consider eliminating atomic weapons and establishing a system of international control of nuclear energy. When the bombs were dropped on Japan, President Truman had declared that Americans "must constitute ourselves trustees of this new force. . . . We thank God that it has come to us, instead of our enemies."⁷ Within a few weeks, however, the administration began to consider a different approach.

Future Secretary of State Dean Acheson drafted a message for the president in early October that declared "the hope of civilization lies in international arrangements looking, if possible, to the renunciation of the use and development of the atomic bomb."⁸ In November US, British, and Canadian leaders issued a remarkable statement echoing many of the views of the scientists. There is no defense against atomic weapons, they declared, and no nation can maintain a monopoly on the new technology. The path to security lies in preventing war and establishing international control over this new power. The joint declaration of November 1945 was followed by the meeting of US, British, and Soviet foreign ministers on 27 December 1945, which supported the proposal for international control and called for the formation of an atomic energy commission under the authority of the United Nations.

The very first resolution adopted by the UN General Assembly, meeting in London on 24 January 1946, called "for the elimination from national armaments of atomic weapons and of all other major weapons adaptable to mass destruction."⁹ The resolution created a UN Atomic Energy Commission charged with developing immediate plans for: a) control of atomic energy to the extent necessary to ensure its use only for peaceful purposes; b) the elimination from national armaments of atomic weapons and of all other major weapons adaptable to mass destruction; and c) effective safeguards by way of inspection and other means to protect complying states against the hazards of violations and evasions.

To formulate the details of the nuclear control policy adopted at the UN, Truman appointed a special committee headed by Acheson, with significant input from David Lilienthal, director of the Tennessee Valley Authority. In March 1946 the committee presented one of the most far-reaching proposals of the nuclear era, which became known as the Acheson-Lilienthal plan. The proposal offered a formula for controlling atomic energy and preventing a nuclear arms race. It provided for the creation of an international body, an Atomic

Development Authority, which would maintain a monopoly on the production of fissile materials and distribute them only in “denatured” form for peaceful purposes. The plan called for the elimination of atomic weapons then in existence (i.e. US weapons) and the creation of a system of international ownership and inspection to prevent the further development of such weapons and to guard against violations. Oppenheimer wrote that the report “proposes that in the field of atomic energy there be set up a world government, that in this field there be renunciation of national sovereignty.” The plan contained, he believed, “new and healthy avenues of approach [for] the problem of preventing war.”¹⁰ It was a remarkable reflection of pacifist insight in the development of public policy.

The Baruch Plan

The success of the scientists and their allies was short-lived, however, for Truman soon appointed financier Bernard Baruch to serve as the US representative to the UN Atomic Energy Commission and gave him a free hand to formulate the specific proposal that would be presented to the United Nations. When Oppenheimer, Lilienthal, and other scientists learned of Baruch’s appointment, they were deeply disappointed. Baruch was known as a self-promoter and a hardliner who disdained the proposals of the scientists. Baruch’s June 1946 address to the United Nations Atomic Energy Commission in New York began dramatically with an apocalyptic reference: “We are here to make a choice between the quick and the dead.” He spoke grandly of abolishing war, but the specific proposal he offered significantly diminished the prospects for creating a more secure world. The Baruch plan differed substantially from its predecessor. His plan called for a UN control body that would have the power to punish offending nations through enforceable sanctions, including military means. The destruction of existing [US] atomic weapons would come only at the end of the process, after the UN control body had conducted on-site inspections and had assured the dismantlement of all nuclear capabilities in other countries. The United States would have retained its monopoly on nuclear weapons until after the last stages of the disarmament process, when nuclear programs in other countries were dismantled.

Soviet Foreign Minister Andrei Gromyko promptly dismissed the Baruch plan and proposed instead that the United States destroy its existing nuclear stockpiles first, before creation of a system of international control. This was an equally one-sided proposal, from the opposite perspective, and would have allowed the Soviet Union to continue its rapidly developing nuclear program while the United States disarmed unilaterally. The two nations entered an immediate stalemate, which persisted for decades.

During the cold war and afterwards, a kind of historical mythology developed around the Baruch Plan. Realists described Moscow’s rejection of the plan as a sign of Soviet perfidy

and a cause of the cold war. Arms controllers looked back upon the plan as a significant US initiative for the elimination of atomic weapons and international control of nuclear energy. Neither assumption was entirely correct. Stalin no doubt intended to pursue the development of nuclear weapons regardless of any diplomatic commitments, but the Baruch proposal was obviously one-sided. It was an assertion of unilateral US advantage, not a serious proposal for the elimination of nuclear weapons or international control of atomic energy. From the very beginning of the atomic age, the United States insisted on retaining its nuclear weapons while demanding that other countries give up theirs. This has remained the basis of US nonproliferation policy to the present, and is a continuing obstacle to progress toward genuine disarmament.

Washington's declared intention to eliminate nuclear weapons might have been taken more seriously if the United States had not been at that very moment building additional bombs and preparing to begin nuclear testing on Bikini Atoll in the Pacific. On the very day Baruch spoke, the US Congress passed and President Truman signed a bill allowing the use of Navy ships as targets in the coming atomic tests.¹¹ Several Senators objected to the resolution and the tests, arguing that the US would be accused of double talk at the UN, but their concerns were swept aside. Two weeks later, on 1 July 1946, Test Able exploded over Bikini ending any further pretense of an American interest in eliminating nuclear weapons.

Meanwhile historical amnesia descended over the Acheson-Lilienthal plan and the first resolution of the United Nations that preceded it. Few historians acknowledged that for a few fleeting months in early 1946, the US government was committed to a plan for the elimination of nuclear weapons, and that the United States pledged to dismantle its existing nuclear capabilities in conjunction with the establishment of an international atomic control mechanism. The Acheson-Lilienthal plan had flaws, especially the lack of mechanisms for assuring international compliance, but it offered the promise of genuine diplomatic dialogue for the control of atomic weapons. The plan contained crucial provisions—a US commitment to eliminate its weapons in concert with the creation of an international control mechanism—that were then and remain today necessary foundations upon which to build international cooperation to prevent nuclear war.

In the wake of the collapse of the Baruch plan, and in the face of mounting hostility from an increasingly cold war-minded US government, the atomic scientists movement waned. The political atmosphere for nuclear disarmament became increasingly oppressive. Fear and distrust began to strain relations and friendships among the scientists. The anticommunist hysteria of the time was directed especially toward the foreign-born scientists who had helped to discover the secrets of the atom. More than half of those who were labeled

communists during the congressional hearings of the early 1950s were physicists and mathematicians. Hundreds of scientists were mercilessly hounded and dismissed from their jobs. By 1951 the Emergency Committee of Atomic Scientists dissolved, and the Federation of American Scientists dwindled to just 1,000 members.¹² The *Bulletin of Atomic Scientists* lost subscribers, but it continued to publish, and persisted to become a vital voice of sanity in the succeeding waves of disarmament activism which emerged in the late 1950s and again in the 1980s.

¹ Robert Jungk, *Brighter than a Thousand Suns: A Personal History of the Atomic Scientists* (New York: Harcourt Brace & Company, 1958), 201, 221-22.

² Eugene Rabinowitch, "Five Years After," *Bulletin of the Atomic Scientists* VII, no. 1 (January 1951): 3.

³ Quoted in Lawrence S. Wittner, *One World or None: A History of the World Nuclear Disarmament Movement Through 1953*, vol. 1 of *The Struggle Against the Bomb* (Stanford: Stanford University Press, 1993), 20.

⁴ "Prospectus on Nucleonics (the Jeffries Report)," in *A Peril and a Hope: The Scientists' Movement in America: 1945-47*, ed. Alice Kimball Smith (Chicago: University of Chicago Press, 1965), 554.

⁵ James Franck, et al., "A Report to the Secretary of War (June 1945)," in *The Atomic Age: Scientists in National and World Affairs*, ed. Morton Grodzins and Eugene Rabinowitch, 19-27 (New York: Basic Books, 1963), 27.

⁶ Wittner, *One World or None*, 60-61.

⁷ Harry S. Truman, "Radio Report to the American People on the Potsdam Conference" (radio address, White House, Washington, D.C., 9 August 1945).

⁸ Quoted in Wittner, *One World or None*, 249.

⁹ United Nations General Assembly, *Establishment of a Commission to Deal with the Problems Raised by the Discovery of Atomic Energy*, 1 (I), London, 24 January 1946.

¹⁰ Quoted in Wittner, *One World or None*, 250-51.

¹¹ Jonathan M. Weisgall, *Operation Crossroads: The Atomic Tests at Bikini Atoll* (Annapolis, Md.: Naval Institute Press, 1994), 101-03.

¹² Wittner, *One World or None*, 266-67, 326.