



**Nuclear Proliferation  
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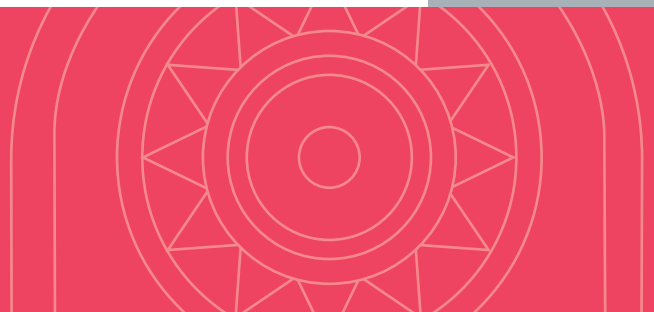
**Woodrow Wilson  
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## **Nuclear Proliferation International History Project**

### **Political Authority or Atomic Celebrity?**

The Influence of J. Robert Oppenheimer on American  
Nuclear Policy after the Second World War

By Marco Borghi  
NPIHP Working Paper #14  
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**Christian F. Ostermann and Leopoldo Nuti, Series Editors**

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# Political Authority or Atomic Celebrity?

## The Influence of J. Robert Oppenheimer on American Nuclear Policy after the Second World War

Marco Borghi

The study of nuclear history offers one of the most pristine instances of paradigm-shifting scientific advancements altering the international status quo. This paper focuses on the influence which Oppenheimer, as scientific celebrity and consultant for the US government, had on American nuclear policy at a time when scientists were understood in the social imaginary as the quintessence of wisdom, and discusses his contributions to the emerging of the nuclear age. Three key fields, each representing fundamental stages in the unfolding of the Cold War, are assessed: Oppenheimer's vision for the international control of atomic energy; his opposition to the development of the hydrogen bomb; and, lastly, his advocacy for tactical nuclear weapons. Analyzing Oppenheimer's fluctuating influence, this paper traces the development of his understanding of atomic armaments, separating facts from the mythology which came to surround one of the most iconic and age-defining figures of the 20th century.

Julius Robert Oppenheimer, the father of the atomic bomb, became one of the most iconic figures of the twentieth century through his work as director of the Los Alamos team, which produced the first atomic weapons in the summer of 1945. Often portrayed as a charismatic and devilishly persuasive man, he was quick to embrace the role of scientific celebrity that he acquired after the Second World War. Due to his fame, Oppenheimer was often misrepresented in both the media and fiction – in some instances he rejected these distorted representations to

the point of threatening legal actions.<sup>1</sup> Despite decades of scholarly efforts, romanticized characterizations of Oppenheimer as a tragic hero and guilt-ridden anti-nuke pacifist persist today.<sup>2</sup> The lack of personal writings or journals has forced scholars researching Oppenheimer to rely on official documents, correspondence and colleagues' accounts. Nonetheless, these have proved more than sufficient to build an image of a complex, multifaceted and supremely ambitious figure, with a penchant for surrounding himself in enigma and mystique.

After the end of the Second World War, Oppenheimer sought to employ his new-found position of authority in the scientific community, media and government to influence American nuclear policy. His formal relationship with the American government was effectively ended in 1954, when his Q clearance was revoked due to harsh political rivalries. This paper will discuss the extent to which Oppenheimer successfully influenced American policies in three fields: international control of atomic energy, the development of the hydrogen bomb, and the adoption of tactical nuclear weapons in defensive plans for Western Europe. These three topics represent key stages in the unfolding of the Cold War and reveal the development of Oppenheimer's understanding of nuclear weapons from shortly after the bombings of Hiroshima and Nagasaki through to the early-1950s.

The first section of this Working Paper will assess Oppenheimer's influence on American efforts towards the establishment of an international control regime. Discussing his adoption of Niels Bohr's internationalist 'open-world' visions, it will draw focus to Oppenheimer's extensive contributions to the 1946 Acheson-Lilienthal Report. The paper will also discuss Oppenheimer's lobbying efforts in both the media and the scientific community as representative of the Association of Los Alamos Scientists. Ultimately it will argue that despite his success in winning the support of Acheson's Committee and his Board of Consultants, tasked by President Truman to devise a plan for international control, Oppenheimer failed to influence American policy. His

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<sup>1</sup> Oppenheimer, discussing Heinar Kipphardt's play *In the Matter of J. Robert Oppenheimer* on the 1954 security hearings, complained that the author "turned the whole damn farce into a tragedy," and was particularly opposed to the final monologue in which his character expressed regret for having built the atomic bomb. See Ferenc M. Szasz, "Great Britain and the Saga of J. Robert Oppenheimer," *War in History* 2, no. 3 (1995): 329-330.

<sup>2</sup> See Alex Wellerstein, "Oppenheimer, Unredacted: Part II – Reading the Lost Transcripts," *Restricted Data: The Nuclear Secrecy Blog*, January 16<sup>th</sup>, 2015, <<http://blog.nuclearsecrecy.com/2015/01/16/oppenheimer-unredacted-part-ii/>>, accessed August 7<sup>th</sup>, 2018.

strained relationship with the President and his failure to convince key figures such as Secretary of State James Byrnes of the benefits of a wide-ranging international control regime resulted in the breakdown of negotiations with the Soviet Union, as the American delegation to the United Nations Atomic Energy Commission (UNAEC) headed by Bernard Baruch revised the Acheson-Lilienthal Report and added conditions the USSR found unacceptable.

The second section will focus on Oppenheimer's opposition to the development of the hydrogen bomb. As chair of the General Advisory Committee of the Atomic Energy Commission, he attempted to stop a crash program for the development of the 'Super' due to both technical reservations and moral qualms. While the technology to build a fusion bomb did not exist yet, the Ulam-Teller design would not be perfected until 1951, Oppenheimer faced serious challenges from senators and military officials intent on investing manpower and capital for the Super's development as early as 1945. These challenges came especially from Strategic Air Command, supporting Edward Teller, who believed that the hydrogen bomb would counterbalance Soviet achievements. While his stern opposition limited the funds directed for thermonuclear research though effective lobbying in favor of fission weapons until the first Soviet atomic test in August 1949, he was once again unsuccessful in influencing longer term American nuclear policy, as President Truman came to support the crash program in January 1950.

The third section will tackle Oppenheimer's advocacy, as early as 1948, for tactical nuclear weapons.<sup>3</sup> It will analyze reports from various panels and committees of which he was a part to highlight arguments which ultimately won the support of the military and the Truman administration. The transcripts of the 1954 security hearings will also be referenced extensively, as Oppenheimer's proactivity in support of battlefield nuclear weapons and his influence on military officers was discussed in detail. It will be argued that Oppenheimer had substantial influence on the adoption of low-yield tactical nuclear weapons in American war planning at a

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<sup>3</sup> After the 1987 Intermediate-Range Nuclear Treaty, tactical nuclear weapons (TNWs) have been defined as involving a short range (less than 500 kilometers) and low yield. This is a problematic definition, as modern bombers could deliver TNW-like bombs with yields of tens of kilotons over longer ranges for strategic campaigns. The tactical weapons here discussed refer to devices such as the Mk-7 gravity bomb, which supporters in the late-1940s and early-1950s believed could be used against military forces or assets on the battlefield. See Paul Schulte, "Tactical Nuclear Weapons in NATO and Beyond: A Historical and Thematic Examination," in Tom Nichols, Douglas Stuart and Jeffrey D. McCausland (eds.), *Tactical Nuclear Weapons and NATO*, Strategic Studies Institute, Online (2012), 14, <<https://ssi.armywarcollege.edu/pubs/display.cfm?pubID=1103>>, accessed July 9<sup>th</sup>, 2018.



time when the strategic bombing of Soviet cities appeared to dominate military strategy in defense of Western Europe. Finally, a conclusion reviewing Oppenheimer's fluctuating degree of influence on American nuclear policy will be offered, discussing the non-linear and often contradictory development in his understanding of nuclear weapons.

### International Control and the Acheson-Lilienthal Proposal

After his appointment as head of the Manhattan Project, Oppenheimer's main preoccupations lay with the vexing administrative tasks and responsibilities which characterized the position at Los Alamos. According to Bird and Sherwin, during the early stages of the project he became "less and less a theoretical physicist and more and more a science administrator," causing no small amount of intellectual stifling.<sup>4</sup> This pattern, however, was severely altered by the arrival of Niels Bohr at Los Alamos in 1943. Bohr was greatly influential in shaping Oppenheimer's understanding of the political implications of the atomic bomb, as well as reinforcing his faith in international control.

Bohr came to Los Alamos to talk about international control of atomic weapons, and to persuade American policymakers that a world based upon the values of the scientific community was the only way to prevent a nuclear security dilemma and subsequent arms race.<sup>5</sup> Bohr's vision was to spread the openness of science to the field of international relations, building an 'open world' based on the communitarian culture governing the international scientific community. Bohr wrote his arguments and hopes in a memorandum in the spring of 1944, which he later shared with Oppenheimer and sent to John Anderson, Chancellor of the Exchequer.<sup>6</sup>

While acknowledging the "importance of the project for the immediate military objectives," Bohr asserted that nuclear armaments offered a global opportunity, recognizing the

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<sup>4</sup> Kai Bird and Martin J. Sherwin, *American Prometheus: The Triumph and Tragedy of J. Robert Oppenheimer* (New York: Vintage Books, 2005), 272.

<sup>5</sup> Bohr's contributions to the Manhattan Project were not only moral or psychological and did not solely inspire "the physicists to think about the consequences of their work." For instance, he helped develop the neutron initiator codenamed 'Urchin' which was later used in the Trinity and Nagasaki bombs. See Alex Wellerstein, "What did Bohr do at Los Alamos?" *The Nuclear Secrecy Blog*, Online, May 11<sup>th</sup>, 2015, <[http://blog.nuclearsecrecy.com/2015/05/11/bohr-at-los-alamos/#footnote\\_6\\_5761](http://blog.nuclearsecrecy.com/2015/05/11/bohr-at-los-alamos/#footnote_6_5761)>, accessed July 8<sup>th</sup>, 2018.

<sup>6</sup> See Graham Farmelo, *Churchill's Bomb: A Hidden History of Science, War and Politics* (London: Faber & Faber, 2013), chapter 22.

weapon's potential in shaping the post-war international environment. He stated that cooperation during the bomb's development could offer strong foundations upon which to build a regime of international control. This initiative would be aimed at "forestalling a fateful competition about the formidable weapon" and would "serve to uproot any cause for distrust between the powers on whose harmonious collaboration the fate of coming generations will depend." Bohr went on to prophetically announce that "unless some agreement about the control of new active materials can be obtained in due time, any temporary advantage, however great, may be outweighed by a perpetual menace to human security."<sup>7</sup>

Both Bohr and subsequently Oppenheimer believed that an agreement between the war-time allies based upon the sharing of information, including the existence of the Manhattan Project, could prevent the surfacing of a nuclear-armed world.<sup>8</sup> In addition, as Margaret Gowing asserted, Bohr's correspondence with Peter Kapitza, who invited him to the USSR, had convinced the Danish scientist that the Soviets knew about the American atomic project and had commenced their own research on nuclear weapons. He thus argued to no avail that the maintaining the project's secrecy would only diminish trust between the Soviet Union and her allies, as well as hinder any chance of preventing a nuclear arms race.<sup>9</sup>

Bohr's visions and arguments had a great impact on Oppenheimer, as he reflected on the possibility of a nuclear arms race and the implications which atomic energy could have on domestic and international politics. After the successful completion of the Trinity test on July 16<sup>th</sup>, 1945, Oppenheimer advised the Interim Committee headed by Secretary of War Henry Stimson to inform the Soviets about the bomb and its future use against Japanese cities. He later received confirmation from Vannevar Bush of the Committee's unanimous acceptance of his

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<sup>7</sup> Niels Bohr, "Confidential comments on the project of exploiting the latest discoveries in atomic physics for industry and warfare," April 2<sup>nd</sup>, 1944, box 34, Frankfurter-Bohr folder, J. Robert Oppenheimer Papers.

<sup>8</sup> Martin J. Sherwin, *A World Destroyed: Hiroshima and Its Legacies* (Redwood City: Stanford University Press, 2003), 93-96, and Peter Goodchild, *J. Robert Oppenheimer: Shatterer of Worlds* (New York: Fromm International Publishing Corporation, 1985), 92.

<sup>9</sup> Oppenheimer too eventually became a fervent critic of the secrecy surrounding nuclear policy decisions, especially regarding the development of the hydrogen bomb. Margaret Gowing, "Niels Bohr and Nuclear Weapons," in A. P. French and P. J. Kennedy (eds.), *Niels Bohr: A Centenary Volume* (Cambridge, Massachusetts: Harvard University Press, 1985), 266-277. See also Kapitza to Bohr, October 28<sup>th</sup>, 1943, in Niels Bohr Political Papers, 1939-1962, Journal no.9.4-5: Correspondence with Kapitza, and for Bohr's non-committal response see Bohr to Kapitza, April 29<sup>th</sup>, 1944, in Niels Bohr Political Papers, 1939-1962, Journal no.9.4-5: Correspondence with Kapitza.

recommendation.<sup>10</sup> He was outraged to learn, however, that instead of an open discussion concerning the atomic weapon and its nature, on July 24<sup>th</sup>, 1945, at the Potsdam conference Truman had only “casually mentioned to Stalin that we had a new weapon of unusual destructive force. The Russian premier showed no special interest. All he said was that he was glad to hear it and hoped we would make ‘good use of it against the Japanese.’”<sup>11</sup> Alice Kimball Smith, historian and wife of the Los Alamos metallurgist Cyril Smith, became a harsh critic of Truman’s failure to accept recommendations regarding nuclear matters. She asserted that “what actually happened at Potsdam was a sheer travesty”; an evaluation which Oppenheimer undoubtedly shared.<sup>12</sup>

After the disappointment of the Potsdam conference, which he perceived as a missed opportunity for international collaboration, Oppenheimer soon found himself representing the Los Alamos civilian scientists in Washington. On August 30<sup>th</sup>, 1945, a new organization was created, the Association of Los Alamos Scientists (ALAS), which shortly after its formation produced a statement detailing the dangers of an atomic arms race and stressing the need for international control. Hans Bethe, Robert Christy and Oppenheimer’s brother Frank were amongst the writers of what became known as ‘The Document’.<sup>13</sup> Oppenheimer, in light of his notoriety and prestige both in the media and Washington, was asked to forward the report to the War Department, which he did on September 9<sup>th</sup>, sending it to Stimson’s assistant George Harrison. Although he had not taken part in the writing of the report, Oppenheimer stressed that his personal views were reflected by the document, adding that only three out of three-hundred scientists had refused to sign it.<sup>14</sup>

Despite the lobbying of the scientists and the support of Stimson, who was close to retirement, the War Department decided to suppress the report, which was classified by the end of September 1945 with Oppenheimer’s consent. The physicist believed that expediency was necessary for international control. He had thus come to support the May-Johnson bill which

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<sup>10</sup> Bird and Sherwin, *American Prometheus*, 314.

<sup>11</sup> Harry S. Truman, *Year of Decisions* (Garden City, NY: Doubleday and Company, 1955), 416.

<sup>12</sup> Alice Kimball Smith, *A Peril and a Hope: The Scientists' Movement in America, 1945-47* (Chicago: University of Chicago Press, 1965), 53.

<sup>13</sup> Bird and Sherwin, *American Prometheus*, 324.

<sup>14</sup> J. Robert Oppenheimer to George Harrison, September 9<sup>th</sup>, 1945, in Alice Kimball Smith and Charles Weiner (eds.), *Robert Oppenheimer: Letters and Recollections* (Stanford: Stanford University Press, 1980), 304.

called for strict punishments for security violations and the establishment of a nine-member commission on which military personal could sit with centralized power over atomic policy.<sup>15</sup> Although the bill was defeated, Truman signed the Atomic Energy Act in August 1946 based on Senator Brien McMahon's proposal for a fierce security regime and the establishment of an exclusively civilian Atomic Energy Commission (AEC), which was given control over nuclear energy policy.

Many ALAS members had actively lobbied against the May-Johnson bill, but later came to regard the Atomic Energy Act as an unsatisfactory substitute due to the draconian security regime surrounding the nuclear sector.<sup>16</sup> Despite the concerns of his fellow scientists on issues of secrecy and security, Oppenheimer's focus was entirely on preventing nuclear rivalries and a spiraling arms race through international control of atomic energy. He stated in October 1945 that "if atomic bombs are to be added as new weapons to the arsenals of a warring world, or to the arsenals of nations preparing for war, then the time will come when mankind will curse the names of Los Alamos and Hiroshima."<sup>17</sup>

Oppenheimer's aim, deeply shaped by the visions and concerns of Bohr and, to a lesser extent, Isidor Rabi, was the creation of an international atomic authority which would control both weapons and peaceful uses of nuclear energy.<sup>18</sup> After the establishment of the United Nations Atomic Energy Commission in late January 1946, Truman set up a committee headed by Under Secretary of State Dean Acheson tasked with the drafting of an international control proposal. Acheson quickly created a Board of Consultants, chaired by David Lilienthal. Bird and Sherwin argued that as the only physicist on the Board, "Oppenheimer naturally dominated the discussions and impressed these strong-minded men with his clarity and his vision."<sup>19</sup>

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<sup>15</sup> Bird and Sherwin, *American Prometheus*, 326.

<sup>16</sup> See for instance William Lanouette, *Genius in the Shadows: A Biography of Leo Szilard, the Man Behind the Bomb* (Chicago: University of Chicago Press, 1992), 286, and Richard G. Hewlett and Oscar E. Anderson Jr., *The New World: 1939-1946*, Vol. I: A History of the Atomic Energy Commission (Philadelphia: University of Pennsylvania Press, 1962), 532.

<sup>17</sup> J. Robert Oppenheimer, speech given at an award ceremony on October 16<sup>th</sup>, 1945, reprinted in Alice Kimball Smith and Charles Weiner (eds.), *Robert Oppenheimer: Letters and Recollections* (Redwood City: Stanford University Press, 1995), 310-311.

<sup>18</sup> On Rabi's influence, see John S. Rigden, *Rabi: Scientist & Citizen* (New York: Basic Books, 1987), 195-197.

<sup>19</sup> Bird and Sherwin, *American Prometheus*, 340.

By mid-March 1946, Oppenheimer had persuaded the members of the Board that, as Bohr had argued, the internationalism of science offered a comprehensive solution. He proposed the establishment of an Atomic Development Authority (ADA), with jurisdiction over “all intrinsically dangerous operations in the nuclear field,” including “mining, manufacturing, research, licensing, inspecting, selling, or any other necessary operations.”<sup>20</sup> Oppenheimer wrote that world government was a precondition for permanent peace, and that without peace came atomic warfare.<sup>21</sup> While recognizing the impossibility that a world government could blossom from the ashes of the Second World War, he believed that a “partial renunciation” of sovereignty over nuclear power plants, laboratories and uranium mines would enable the ADA to “protect the world against atomic weapons and provide it with the benefits of atomic energy.”<sup>22</sup> The drafters of the Acheson-Lilienthal Report hoped that this renunciation in favor of the ADA “may contain the seeds which will in time grow into that cooperation between nations which may bring an end to all war.”<sup>23</sup>

The gravity of the post-war nuclear threat coupled with Oppenheimer’s undeniable eloquence and persuasiveness earned him the support of both the Board of Consultants and Acheson’s Committee. This was no small feat. He charmed men as diverse as Lilienthal, a liberal New Dealer, Charles Thomas, vice-president of Monsanto and later NSC consultant under President Eisenhower, and John McCloy, a Republican Wall Street lawyer.<sup>24</sup> Their recollections of Oppenheimer depicted a magnetic personality, a man possessing unique wit and, as McCloy posited, an “almost musically delicate mind.”<sup>25</sup> Lilienthal, the most entranced of the Board members, stated that “he is worth living a lifetime just to know that mankind has been able to

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<sup>20</sup> “A Report on the International Control of Atomic Energy—Prepared for the Secretary of State’s Committee on Atomic Energy by a Board of Consultants: Chester I. Barnard, Dr. J. Robert Oppenheimer, Dr. Charles A. Thomas, Harry A. Winne, David E. Lilienthal, Chairman,” Washington, D.C., March 16<sup>th</sup>, 1946, 34-35.

<sup>21</sup> J. Robert Oppenheimer, Memorandum on “Atomic Explosives,” April 6<sup>th</sup>, 1946, in *Foreign Relations of the United States, 1946*, Vol.1, 749-754.

<sup>22</sup> J. Robert Oppenheimer, speech given on May 16<sup>th</sup>, 1946, at the George Westinghouse Centennial Forum, Pittsburgh, reprinted in Oppenheimer, *The Open Mind* (New York City: Simon and Schuster, 1955), 3. See also Abraham Pais and Robert P. Crease, *J. Robert Oppenheimer: A Life* (Oxford: Oxford University Press, 2007), 152-154.

<sup>23</sup> “A Report on the International Control of Atomic Energy,” 34.

<sup>24</sup> Joseph I. Lieberman, *The Scorpion and the Tarantula: The Struggle to Control Atomic Weapons, 1945-1949* (Boston: Houghton Mifflin, 1970), 246.

<sup>25</sup> Kai Bird, *The Chairman: John J. McCloy & the Making of the American Establishment* (New York: Simon & Schuster, 1992), 277.

produce such a being,” while General Groves, describing the relationship between Oppenheimer and his colleagues, laconically recalled that “everybody genuflected.”<sup>26</sup> Acheson’s memoirs offer a more balanced yet still extremely flattering depiction of Oppenheimer, as he wrote that “all the participants agree that the most stimulating and creative mind among us was Robert Oppenheimer’s. On this task he was also at his most constructive and accommodating.”<sup>27</sup>

However, his influence and persuasiveness failed to extend to the State Department and the White House. Oppenheimer’s relationship with President Truman was strained by unresolved disagreements, and he was not alone in doubting the President’s diplomatic prowess. For instance, both McCloy and Rabi shared his concerns, considering Truman’s instincts to be “neither measured nor sound – and certainly not up to the challenge the country and the world now faced.”<sup>28</sup> These evaluations were reinforced when Secretary of State James Byrnes persuaded Truman to appoint Bernard Baruch as US Representative to the UNAEC. Oppenheimer, Lilienthal and Acheson all understood Baruch’s appointment as a great defeat and a severe setback for international control. Baruch was quick to propose several amendments to the Acheson-Lilienthal Report that would fundamentally alter its internationalist nature by reducing the ADA’s power over nuclear matters and allowing the United States to maintain a stockpile of nuclear weapons.<sup>29</sup> As Herken and Allen asserted, both Baruch and Byrnes were board members of Newmont Mining Corporation, which held significant stakes in uranium mines, and could stand to lose valuable assets if the provisions of renunciation of sovereignty detailed in the Acheson-Lilienthal Report were to be implemented.<sup>30</sup>

Baruch insisted upon punitive provisions against any state found violating the agreement, Soviet renunciation of veto power on actions taken by the ADA and regular onsite inspections. These amendments, aimed at the protection of an American nuclear monopoly, would effectively

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<sup>26</sup> David E. Lilienthal to Herbert Marks, January 14<sup>th</sup>, 1948, box 46, J. Robert Oppenheimer Papers, and Leslie Groves, in Goodchild, *J. Robert Oppenheimer*, 178. For good measure, Groves added that Lilienthal “would consult Oppie on what tie to wear.”

<sup>27</sup> Dean Acheson, *Present at the Creation* (New York: W. W. Norton & Company, 1969), 153.

<sup>28</sup> Bird and Sherwin, *American Prometheus*, 333.

<sup>29</sup> Gregg Herken, *The Winning Weapon* (Princeton, New Jersey: Princeton University Press, 1980), 364-366.

<sup>30</sup> *Ibid.*, and James S. Allen, *Atomic Imperialism: The State, Monopoly, and the Bomb* (New York: International Publishers, 1952), 108.

doom negotiations between the superpowers.<sup>31</sup> As recounted by Lilienthal in his journal, Oppenheimer predicted the unfolding of the negotiations and the consequences of their failure. After the American half-hearted proposal,

Russia will exercise her veto and decline to go along. This will be construed by us as a demonstration of Russia's warlike intentions. And this will fit perfectly into the plans of that growing number who want to put the country on a war footing, first psychologically, then actually. The Army directing the country's research; Red-baiting; treating all labor organizations as Communist and therefore traitorous...<sup>32</sup>

His notoriety as father of the atomic bomb offered Oppenheimer opportunities to assert his influence on American nuclear policies. After developing his understanding of nuclear weapons through discussions with colleagues such as his brother Frank, Isidor Rabi and, most influential of all, Niels Bohr, he attempted to steer American policy towards openness and international cooperation. During the drafting of the Acheson-Lilienthal Report, he contributed to its internationalist nature and suggested individual provisions concerning the power and scope of the ADA as the only physicist on the Board of Consultants. Ultimately, his influence on American efforts for international control was limited. He could not persuade policymakers such as Byrnes and Baruch, and experienced an increasingly tense relationship with President Truman, who came to describe him as a "cry-baby scientist."<sup>33</sup>

### Opposition to the Development of the Hydrogen Bomb

In accordance with the McMahon Act, Truman created the Atomic Energy Commission, headed by Lilienthal, as well as a General Advisory Committee (GAC). In 1947, Oppenheimer was unanimously elected chairman of the GAC by his colleagues, remaining in office until 1952. He found himself holding extremely coveted positions, as he was also appointed president of the American Physical Society and won membership of the Harvard Board of Overseers. After the debacle of the Acheson-Lilienthal Report, Oppenheimer became increasingly frustrated with the

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<sup>31</sup> Bird, *The Chairman*, 281-282.

<sup>32</sup> David E. Lilienthal, *The Journals of David E. Lilienthal, Vol. 2: The Atomic Energy Years 1945-1950* (New York: Harper & Row, 1964,) 69-70.

<sup>33</sup> See Nuel Pharr Davis, *Lawrence and Oppenheimer* (Boston: Da Capo Press, 1968), 257-262, and Peter Michelmore, *The Swift Years: The Robert Oppenheimer Story* (New York: Dodd, Mead & Co., 1969), 121-122.



superpowers' indifference to the prospects of a nuclear arms race and began to alter his understanding of American nuclear policy.

While he had not given up the goal of international control, he recognized that radical alterations in geopolitics would be required before his vision could be achieved. Oppenheimer perceptively argued that the renunciations and sacrifices intrinsic to his plan for international control stood in stark contrast to the political nature of the Soviet Union. He noted that "belief in the inevitability of conflict between Russia and the capitalist world would be repudiated by a co-operation as intense or as intimate as is required by our proposals."<sup>34</sup> This disheartening realization, coupled with his new responsibilities, led him to conclude that the AEC's main purpose was to "provide atomic weapons and good atomic weapons and many atomic weapons," which would act as the mainstay for the American defense posture.<sup>35</sup>

While most scientists had expected the Soviets to acquire atomic weapons, the USSR's first atomic test on August 29<sup>th</sup>, 1949 caused a significant rise in tensions as legislators and policymakers hastened to ensure the maintenance of US nuclear superiority. Oppenheimer had remarked to *Time* in late 1948 that "our atomic monopoly is like a cake of ice melting in the sun," and he understood the Soviet bomb as providing an opportunity to move away from excessive and unnecessary secrecy towards openness on nuclear matters.<sup>36</sup> However, figures such as McMahon and AEC Commissioner Lewis Strauss saw the Soviet test as a threat to US security. They came to support the ambition of scientists such as Edward Teller and Ernest Lawrence of building a hydrogen bomb, or Super, which, through the processes of nuclear fusion, could yield an explosion thousands of times greater than fission weapons.

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<sup>34</sup> J. Robert Oppenheimer, *The Open Mind*, 26-27. See also Michael A. Day, *The Hope and Vision of J. Robert Oppenheimer* (London: World Scientific, 2015), 94.

<sup>35</sup> J. Robert Oppenheimer, in Algis Valiunas, "The Agony of Atomic Genius," *The New Atlantis*, Fall Issue (2006): 97.

<sup>36</sup> J. Robert Oppenheimer in *Time*, Vol. LII, no. 19, November 8<sup>th</sup>, 1948, <<http://content.time.com/time/magazine/0,9263,7601481108,00.html>>, accessed July 16<sup>th</sup>, 2018. See Oliver Stone and Peter Kuznick, *The Untold History of the United States* (New York: Gallery Books, 2012), 222-224. On Oppenheimer's rejection of secrecy in favor of a "more rational security policy" see Richard G. Hewlett and Francis Duncan, *Atomic Shield: A History of the United States Atomic Energy Commission: Volume II 1947-1952* (University Park, Pennsylvania: Pennsylvania State University Press, 1969), 367-370, and Bird and Sherwin, *American Prometheus*, 417-418. Lilienthal recalled Oppenheimer telling him that the Soviet test "could be the end of the miasma of secrecy." Lilienthal, *The Journals of David E. Lilienthal*, Vol. 2, 570.



As Bernstein argued, until the Soviet test, research on the hydrogen bomb had “foundered on shortages of scarce scientific personnel, critical materials, and limited funds,” which were predominantly directed to the production and improvement of fission bombs.<sup>37</sup> Discussion of the Super’s development had commenced as early as September 1945, when a report written by the Scientific Advisory Panel, composed of Oppenheimer, Fermi, Compton and Lawrence, concluded that “no such effort should be invested at the present time.”<sup>38</sup> The scientists’ official report had omitted moral qualms concerning thermonuclear devices. However, in a letter written to Secretary of Commerce Henry Wallace the day before the report was sent, Compton asserted that the four physicists opposed the development because “we should prefer defeat in war to victory obtained at the expense of the enormous human disaster that would be caused by its determined use.”<sup>39</sup>

By late-1949, Lawrence and Compton had come to support the development of the Super, while Fermi’s position became ambiguous. Oppenheimer, despite stating that “it would be folly to oppose this weapon” in a letter to James Conant, appeared undecided to his colleagues.<sup>40</sup> However, on October 28<sup>th</sup>, 1949, only a week after his letter to Conant, Oppenheimer chaired the eighteenth meeting of the GAC, which convened to discuss the proposed crash program for the Super.

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<sup>37</sup> Barton J. Bernstein, “Four physicists and the bomb: The early years, 1945-1950,” *Historical Studies in the Physical and Biological Sciences* 18, no. 2 (1988): 257. See also AEC, *In the Matter of J. Robert Oppenheimer: Transcript of Hearing Before Personnel Security Board, Washington D.C., April 12, 1954, through May 6, 1954* (Washington DC: Government Printing Office, Online, 1954), 3-18.

<[https://archive.org/stream/unitedstatesatom007206mbp/unitedstatesatom007206mbp\\_djvu.txt](https://archive.org/stream/unitedstatesatom007206mbp/unitedstatesatom007206mbp_djvu.txt)>, accessed July 30<sup>th</sup>, 2018.

<sup>38</sup> Scientific Advisory Panel, “Proposal for Research and Development of Atomic Energy,” September 28<sup>th</sup>, 1945, in Gregg Herken, *Cardinal Choices: Presidential Science Advising from the Atomic Bomb to SDI* (Redwood City: Stanford University Press, 1992), 35-36.

<sup>39</sup> Karl Compton to Henry Wallace, September 27<sup>th</sup>, 1945, series 5, file 312.1, box 48, Harrison-Bundy file, US National Archives and Records Administration.

<sup>40</sup> Oppenheimer to James Conant, October 21<sup>st</sup>, 1949, quoted in James G. Hershberg, *James B. Conant: Harvard to Hiroshima and the Making of the Nuclear Age* (Redwood City: Stanford University Press, 1995), 473. On Oppenheimer’s apparent undecidedness, see Priscilla J. McMillan, *The Ruin of J. Robert Oppenheimer: And the Birth of the Modern Arms Race* (Baltimore, Maryland: John Hopkins University Press, 2018), 30. See also Interview of Hans Bethe by Charles Weiner on May 8<sup>th</sup>, 1972, Niels Bohr Library & Archives, American Institute of Physics, College Park, Maryland, Online, <[www.aip.org/history-programs/niels-bohr-library/oral-histories/4504-3](http://www.aip.org/history-programs/niels-bohr-library/oral-histories/4504-3)>, accessed July 19<sup>th</sup>, 2018.

The report which was produced asserted that the development of the hydrogen bomb presented arduous technical problems and would result in an inefficient and unnecessary deterrent. The report explained that due to its enormous destructive force, a thermonuclear weapon could not “be used exclusively for the destruction of material installations of military or semi-military purposes. Its use therefore carries much further than the atomic bomb itself the policy of exterminating civilian populations.” In addition, due to the uncertainty surrounding the weapon’s development process, Oppenheimer and the other members of the GAC questioned “whether the super will be cheaper or more expensive than the fission bomb.”<sup>41</sup> The report thus argued that the armament was simply too powerful for any reasonable military target, and the production and improvement of low-yield tactical nuclear weapons could prove both militarily and economically advantageous.

Furthermore, the opposition of the GAC did not only stem from technical issues. In the majority annex which Oppenheimer co-wrote, moral considerations became intertwined with political issues of international reputation and national security. The report argued that the use of the Super “would involve a decision to slaughter a vast number of civilians,” making it “a weapon of genocide.” According to Oppenheimer, the development and possession of hydrogen bombs would have serious effects on world opinion, and “the psychological effect of the weapon in our hands would be adverse to our interest.” Finally, the document stated that “our undertaking it will not prove a deterrent to them,” refuting pro-hydrogen bomb arguments that stemmed from fear of the Russians developing the Super. Instead, it argued that a “large stock of atomic bombs” should be maintained, as they were understood to be flexible, efficient and “comparably effective to the use of a Super” in matters of deterrence.<sup>42</sup>

The views expressed in the GAC report were echoed by the Director of Policy Planning George Kennan shortly before his replacement by Paul Nitze which heralded, through NSC-68, a move away from containment in favor of rollback. Kennan, who had developed a close relationship with Oppenheimer in the late-1940s, argued that successful deterrence could be guaranteed by a small number of atomic weapons combined with “the present and prospective

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<sup>41</sup> “General Advisory Committee’s Majority and Minority Reports on Building the H-Bomb,” October 30<sup>th</sup>, 1949, Online, <<http://www.atomicarchive.com/Docs/Hydrogen/GACReport.shtml>>, accessed July 19<sup>th</sup>, 2018.

<sup>42</sup> *Ibid.*, Majority Annex.

stockpile of conventional bombs.” Reiterating Oppenheimer’s position, Kennan asserted that the hydrogen bomb would ultimately prove unnecessary, as “anything further in the way of mass destruction weapons would be redundant, or would fall into an area of diminishing returns.”<sup>43</sup> Both Kennan and Oppenheimer were concerned about the implication the Super might have on American foreign policy, as the weapon could not “be reconciled with a political purpose directed to shaping, rather than destroying, the lives of the adversary.”<sup>44</sup>

Oppenheimer and Kennan had worked with grueling effort. The former was naïvely satisfied with the GAC recommendations, hoping they would suffice to sway the Truman administration. The latter would come to view his memorandum as being “in its implications one of the most important, if not the most important” document he wrote in government.<sup>45</sup> However, although the GAC report had been endorsed by the AEC with a vote of three to two, its arguments were strongly countered by supporters of the Super through energetic lobbying. This led President Truman to appoint Secretary of State Dean Acheson, Secretary of Defense Louis Johnson, and AEC Chairman Lilienthal to a special committee of the NSC to review the arguments and make a final recommendation.

As Lilienthal and Johnson were respectively opposed and in favor of a crash program, Acheson held the deciding vote. The Secretary of State recalled that domestic pressures eventually convinced him to support the Super, as “the American people simply would not tolerate a policy of delaying nuclear research.”<sup>46</sup> Rejecting Kennan’s paper, Acheson met with Oppenheimer to discuss alternatives to a crash program but was not swayed by his arguments, which led the physicist “to realize how few allies he had inside the Administration.”<sup>47</sup>

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<sup>43</sup> George F. Kennan, “Memorandum: International Control of Atomic Energy,” January 20<sup>th</sup>, 1950, *Foreign Relations of the United States, 1950, National Security Affairs; Foreign Economic Policy*, Vol. I, 30. On Kennan’s relationship with Oppenheimer see David Mayers, *George Kennan and the Dilemmas of US Foreign Policy* (Oxford: Oxford University Press, 1988), 240-241, and Bird and Sherwin, *American Prometheus*, 424-427, 526.

<sup>44</sup> Kennan, “Memorandum,” 39. See also Jeffrey Salmon, “Dean Acheson,” in Morton J. Frisch and Richard G. Stevens (eds.), *American Political Thought: The Philosophic Dimension of American Statesmanship*, Piscataway (New Jersey: Transaction Publishers, 1983), 435-436.

<sup>45</sup> George F. Kennan, *Memoirs: 1925-1950*, Vol. I (New York: Pantheon Books, 1967), 427. On Kennan’s determination and investment in the subject, see Wilson D. Miscamble, *George F. Kennan and the Making of American Foreign Policy, 1947-1950* (Princeton, New Jersey: Princeton University Press, 1993), 302-304.

<sup>46</sup> Acheson, *Present at Creation*, 349.

<sup>47</sup> Bird and Sherwin, *American Prometheus*, 424. This only worsened with Nitze’s replacement of Kennan as Director of Policy Planning in 1950, especially concerning the development of the Super, which Nitze endorsed in NSC-68.

Oppenheimer had been at the center of technical and political discussions surrounding the development of the hydrogen bomb, but held opinions not widely shared in the contemporary political climate. Despite his positions of influence, much like in his endeavor in support of international control, his effort to slow the arms race in defiance of an increasingly hostile understanding of the Soviet Union proved ultimately unsuccessful. President Truman announced the program for the development of “the so-called hydrogen or superbomb” on January 31<sup>st</sup>, 1950.<sup>48</sup>

Although Oppenheimer could not stop the development of the Super, his influence on thermonuclear policy was not negligible. According to the most ardent supporters of the hydrogen bomb, Oppenheimer had successfully impeded its development during the late-1940s. In several essays and publications, Teller explicitly blamed Oppenheimer for delaying research into fusion bombs, arguing that without his interference a larger number of scientists would have worked on the challenges posed by thermonuclear processes, thus accelerating the Super’s development.<sup>49</sup> Without openly attacking Oppenheimer, Teller wrote in a 1952 memorandum on Hans Bethe’s chronology of the hydrogen bomb that “we have pursued the thermonuclear development throughout the past seven years at much too slow a rate; and even since the Presidential Directive progress has been slower and certainly narrower than is consistent with national security.”<sup>50</sup>

Supporters of the hydrogen bomb believed Oppenheimer, among others, to be opposing “work on the H-bomb even after President Truman’s January 1950 decision to develop the weapon.”<sup>51</sup> According to Herken, Teller sought support from both the Air Force and the Joint Committee on Atomic Energy for the establishment of a second nuclear weapons laboratory

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<sup>48</sup> Harry S. Truman, “Statement by the President on the Hydrogen Bomb,” January 31<sup>st</sup>, 1950, *The American Presidency Project*, Online, <<http://www.presidency.ucsb.edu/ws/?pid=13634>>, accessed July 21<sup>st</sup>, 2018.

<sup>49</sup> See for instance Edward Teller with Allen Brown, *The Legacy of Hiroshima* (New York: Doubleday, 1962), 23-57.

<sup>50</sup> Edward Teller, “Comments on Bethe’s History of the Thermonuclear Program,” August 14<sup>th</sup>, 1952, Online, <<https://nsarchive2.gwu.edu/nukevault/ebb507/docs/doc%206%2052.08.15%20Teller%20on%20Bethe%20history.pdf>>, accessed July 21<sup>st</sup>, 2018. Hans Bethe rejected Teller’s criticism of Oppenheimer as he stated that the Ulam-Teller design, which effectively allowed for the development of the hydrogen bomb, “came about by a number of accidents.” He also argued that “the invention in our project could probably not have been accelerated by harder work.” See Hans A. Bethe, “Memorandum on the History of the Thermonuclear Program,” May 28<sup>th</sup>, 1952, Online, <<https://fas.org/nuke/guide/usa/nuclear/bethe-52.htm>>, accessed July 21<sup>st</sup>, 2018.

<sup>51</sup> Barton J. Bernstein, “Review of ‘Better a Shield than a Sword: Perspectives on Defence and Technology’ by Edward Teller,” *Technology and Culture* 31, no. 4 (1990): 854.

“away from the influence of Oppenheimer and Los Alamos.”<sup>52</sup> This was a two-fold attempt to safeguard the weapon’s development and spark competition between the laboratories, leading to the establishment in 1952 of what became the Lawrence Livermore National Laboratory.

Oppenheimer’s continued opposition to the hydrogen bomb featured heavily in a letter from K. D. Nichols, General Manager of the AEC, informing him that his security clearance had been suspended. Nichols wrote that Oppenheimer was accused of obstructing research “even after it was determined, as a matter of national policy, to proceed with development of a hydrogen bomb,” and of being

instrumental in persuading other outstanding scientists not to work on the hydrogen-bomb project, and that the opposition to the hydrogen bomb, of which you are the most experienced, most powerful, and most effective member, has definitely slowed down its development.<sup>53</sup>

At the security hearings, Oppenheimer rejected these accusations, arguing that after the Ulam-Teller design had proven the bomb’s technical feasibility he did not exert his influence to slow its progress, stating that “when you see something that is technically sweet, you go ahead and do it.”<sup>54</sup>

However, despite his attempts to play down his resistance to the Super at the security hearings, Oppenheimer had endeavored to steer national policy towards low-yield tactical nuclear weapons. Notably, the Defense Department created an advisory panel on the long-term uses of atomic weapons, which wrote its report in December 1950. The panel considered both recent progress at Los Alamos in fission research and the conflict raging in Korea and concluded that “priority should be given to work on the fission bombs,” as tactical nuclear weapons (TNWs) were increasingly gaining support within the military.<sup>55</sup> Oppenheimer wrote the report with unanimous agreement from the other eleven members, including “three generals and an admiral.”<sup>56</sup>

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<sup>52</sup> Herken, *Cardinal Choices*, 54.

<sup>53</sup> AEC, *In the Matter of J. Robert Oppenheimer*, 6.

<sup>54</sup> *Ibid.*, 81.

<sup>55</sup> McMillan, *The Ruin of J. Robert Oppenheimer*, 95.

<sup>56</sup> *Ibid.*

AEC Commissioner Strauss and Senator McCarthy found in Oppenheimer's opposition an excuse to target him in their investigations.<sup>57</sup> Shortly before his 1954 security hearings, McCarthy asked "why did we delay our research on the hydrogen bomb? [...] I ask who caused it? Was it loyal Americans – or was it traitors in our government?"<sup>58</sup> Despite these farcical attacks, Oppenheimer's influence on the hydrogen bomb's development remained limited in scope. While he successfully lobbied for tactical nuclear weapons due to their alleged military and political benefits, he failed to persuade the Truman administration to renounce research into thermonuclear weapons. Whether he was successful in delaying the Super's development has remained a matter of contention, as men like Bethe argued that it was a product of an unforeseeable stroke of genius.<sup>59</sup> However, Oppenheimer certainly played a fundamental role in maintaining fission bombs as the focus of Los Alamos researchers through the late-1940s despite constant pressures from proponents of the Super. Ultimately however, he could not influence American nuclear policy enough to see his goals fulfilled, deepening his frustrations with the secrecy surrounding policy decisions and with the increasingly hostile political climate.

### Oppenheimer's Advocacy of Tactical Nuclear Weapons

National policies have been repeatedly influenced by fierce competition and rivalry between the different branches of the armed forces. American Nuclear directives during the late-1940s and early-1950s were no exception. After the rise in tensions between the US and the USSR following the 1948 Berlin Blockade, strategic bombardment of Soviet cities increasingly became the planned response to an eventual invasion of Western Europe. While the Air Force and Strategic Air Command (SAC) headed by Curtis LeMay pushed for the development of thermonuclear weapons as supplements to strategic campaigns, both the Navy and the Army criticized the American reliance on atomic weapons for continental defense.<sup>60</sup> Oppenheimer,

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<sup>57</sup> According to most accounts, Strauss sought revenge on Oppenheimer after the latter had humiliated him in Congress in June 1949. See for instance Pais and Crease, *J. Robert Oppenheimer: A Life*, 165, or Rigden, *Rabi: Scientist and Citizen*, 221-222.

<sup>58</sup> Joseph McCarthy, quoted in John M. Brown, *Through These Men Some Aspects of Our Passing History* (New York: Harper and Brothers, 1956), 242.

<sup>59</sup> Bethe, "Memorandum."

<sup>60</sup> See Philip Morse, *In at the Beginnings: A Physicist's Life* (Cambridge, MA: MIT Press, 1977), 258.

opposing the development of the hydrogen bomb, attempted to redirect American war planning, which focused on the Air Force, towards the Army by lobbying for the production and improvement of a large stockpile of low-yield tactical nuclear weapons.

Oppenheimer posited that TNWs offered major benefits which strategic bombardment could not provide. As Freeman Dyson argued, proponents viewed tactical fission weapons as militarily and politically more efficient than larger armaments. The advantages in quantity and quality of American bombs would allow for effective deterrence and defense of Western Europe without incurring damages to the belligerent nations.<sup>61</sup> In addition, Oppenheimer believed that the possibility of localized uses of atomic devices would enhance the resolve of European governments in defiance of Soviet pressure, effectively envisioning TNWs stationed in Western Europe as a way of alleviating allied fears of American decoupling.<sup>62</sup>

Oppenheimer's support for TNWs was a result of his disdain for the Air Force's war plans, as he later recalled that "to understand what I did then, one should look at the Air Force's war plans in 1951. It was the goddamnest thing I ever saw."<sup>63</sup> Plans such as HALFMOON and its successor OFFTACKLE, written between 1948 and 1949, maintained that the most effective method of fighting a war against the Soviet Union was through the strategic bombardment of Soviet cities.<sup>64</sup> HALFMOON, based upon the Air Force's 'Harrow' plan, called for the dropping of fifty atomic bombs on twenty Soviet cities, effectively amounting to the entire American nuclear stockpile in the spring of 1948.<sup>65</sup>

Although Truman looked for an alternative to the annihilation of the Soviet population, war planning in the United States became increasingly apocalyptic. For instance, in 1950, Curtis LeMay pushed for the implementation of SAC Emergency Plan 1-49, involving the delivery of "the

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<sup>61</sup> Freeman Dyson, *Weapons and Hope*, Italian version, translated by Andrea Cane (Torino: Boringhieri, 1984) 154.

<sup>62</sup> *Ibid.*, 154-155.

<sup>63</sup> *Ibid.*, 154. Herken discussed scientists' opposition to strategic bombing at length in Gregg Herken, *Counsels of War* (Oxford: Oxford University Press, 1985), chapter 7.

<sup>64</sup> HALFMOON and OFFTACKLE are reprinted in Thomas H. Etzold and John L. Gaddis (eds.), *Containment: Documents on American Policy and Strategy, 1945-1960* (New York: Columbia University Press, 1978). See US Joint Chiefs of Staff, "JCS 1844/13: Brief of Short Range Emergency War Plan (HALF-MOON)," July 21<sup>st</sup>, 1948, 315-323, and US Joint Chiefs of Staff, "JSPC 877/59: Brief of Joint Outline Emergency War Plan (OFFTACKLE)," May 26<sup>th</sup>, 1949, 324-334.

<sup>65</sup> David Alan Rosenberg, "American Atomic Strategy and the Hydrogen Bomb Decision," *The Journal of American History* 66, no. 1 (1979): 68.



entire stockpile of atomic bombs in a single massive attack,” calculated as one-hundred and thirty-three nuclear weapons on seventy Soviet cities.<sup>66</sup> Oppenheimer sought to alter American war plans, hoping to avoid the destruction of Soviet cities and the inevitable reprisals on London, Paris, or other Western European allied cities. He speculated that through TNWs and small ground forces “battle could be brought back to the battlefield.”<sup>67</sup>

Despite his lobbying in the late-1940s, Oppenheimer had not always been a supporter of the atomic bomb’s tactical uses. In protest against the Bikini Tests planned for July 1946, which assessed the employment of nuclear weapons against naval targets, he wrote to Truman stating that “surely the overwhelming effectiveness of atomic weapons lies in their use for the bombardment of cities, and of centers of production and population.”<sup>68</sup> However, due to growing dissatisfaction with strategic bombing plans, coupled by technical and moral reservations concerning the thermonuclear program, by 1948 he had become a proponent of TNWs.

Oppenheimer chaired the Committee on Atomic Energy’s Panel on Long-Range Objectives, which presented its report on August 18<sup>th</sup>, 1948. The committee favorably portrayed battlefield nuclear weapons as a valid solution to both US and Western European security problems.<sup>69</sup> Although strategic bombing of cities dominated American plans, battlefield atomic weapons were rapidly gaining consensus. As Matthew Evangelista argued, Oppenheimer and other supporters of TNWs were successful because “they held a monopoly on information about nuclear weapons and they enjoyed tremendous prestige within the US government and among the public at large.” After their recognition of the technical possibilities of battlefield nuclear

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<sup>66</sup> Tom Engelhardt, *The End of Victory Culture: Cold War America and the Disillusioning of a Generation* (Amherst, Massachusetts: University of Massachusetts Press, 2007), 155. See also Fred Kaplan, *The Wizard of Armageddon* (New York: Torchstone/Simon and Schuster, 1984), 4.

<sup>67</sup> J. Robert Oppenheimer, quoted in Lawrence Freedman, *The Evolution of Nuclear Strategy*, Basingstoke (UK: Palgrave Macmillan, 1981), 65.

<sup>68</sup> J. Robert Oppenheimer to Harry S. Truman, May 3<sup>rd</sup>, 1946, in Records of the Department of State, Records of the Special Assistant to the Secretary for Atomic Energy and Outer Space, General Records Relating to Atomic Energy Matters, 1948-1962, box 37, 16. US Government 11, Navy Test 1946-1952, 2, <<https://nsarchive2.gwu.edu//dc.html?doc=2995388-Document-10-Robert-Oppenheimer-to-President>>, accessed July 31<sup>st</sup>, 2018.

<sup>69</sup> The content of the report was discussed by General Roscoe Wilson and Luis Alvarez at the hearings concerning Oppenheimer’s security clearance in 1954. See AEC, *In the Matter of J. Robert Oppenheimer*, 683-685 (Wilson) and 777-780 (Alvarez). See also Robert Gilpin, *American Scientists and Nuclear Weapons Policy* (Princeton, NJ: Princeton University Press, 1962), 113-114.



weapons, the scientists “made great efforts to promote their finding through the work of the various government advisory groups in which they were involved, as well as within the labs.”<sup>70</sup>

At his security hearings, Oppenheimer offered his own view as to why the AEC’s focus had been successfully redirected towards battlefield weapons, arguing that the GAC did not limit itself to responding to “questions that the Commission put,” but rather suggested “programs that it ought to undertake.”<sup>71</sup> He posited that this was due to the GAC members knowing “more collectively about the past of the atomic energy undertaking and its present state, technically and to some extent even organizationally or some parts of it, than the Commission did.”<sup>72</sup>

In terms of Oppenheimer’s personal role, Walter Whitman, a GAC member and director of the Pentagon’s Research and Development Board, offered a telling account. Whitman suggested that due to his opportunity to advise both the Atomic Energy Commission and the military services in the Department of Defense, Oppenheimer “more than any other man served to educate the military to the potentialities of the atomic weapon for other than strategic bombing purposes.”<sup>73</sup> As Evangelista noted, his influence in the early stages of development was magnified by his consultancy with organizations such as the Weapons System Evaluation Group (WSEG), the Military Liaison Committee of the AEC and the Pentagon’s Research and Development Board, which greatly expanded Oppenheimer’s military contacts.<sup>74</sup> Whitman concluded that these connections ensured that “his advice and his arguments for a gamut of atomic weapons” proved “more productive than [those of] any other individual,” as he “educated [...] practically all of the officers.”<sup>75</sup>

By late-1949, it seemed Oppenheimer’s lobbying had succeeded in redirecting American policy. In a report presented to President Truman in October 1949 by the Special Committee of the National Security Council, composed of Secretary of Defense Johnson, Secretary of State Acheson and AEC Chairman Lilienthal, TNWs were viewed as both technically and economically

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<sup>70</sup> Matthew Evangelista, *Innovation and the Arms Race: How the United States and the Soviet Union Develop New Military Technologies* (Ithaca, NY: Cornell University Press, 1988), 95.

<sup>71</sup> AEC, *In the Matter of J. Robert Oppenheimer*, 67.

<sup>72</sup> *Ibid.*

<sup>73</sup> *Ibid.*, 497.

<sup>74</sup> Evangelista, *Innovation*, 97.

<sup>75</sup> AEC, *In the Matter of J. Robert Oppenheimer*, 497.

viable.<sup>76</sup> These conclusions were based upon the *Sandstone* tests, which prompted the President's approval for the expansion of the American atomic program, with specific focus on TNWs. However, the deepening controversy of strategic bombing versus tactical weapons continued into 1950. After Truman's approval of a crash program for the development of fusion bombs, Oppenheimer increasingly advocated the tactical uses of the atom in public. Shortly after the conclusion of a panel on military objectives which he chaired, he gave a speech to the New York Bar Association exposing the limits of strategic bombing and discussing the benefits of TNWs.<sup>77</sup> Referencing the impact of the Korean War on the evaluation of atomic weapons, Oppenheimer argued that "they can be used only as adjuncts in a military campaign which has some other components, and whose purpose is military victory."<sup>78</sup>

The physicist was joined in his public advocacy of battlefield nuclear weapons by some influential figures in the Armed Forces, while increasing doubts arose among Department of State officials surrounding the validity of strategic bombing as a defense policy.<sup>79</sup> General Omar Bradley, Chief of the Joint Chiefs of Staff and a convinced supporter of TNWs, publicly stated that "the atomic bomb in its tactical aspect may well contribute towards a stable equilibrium of forces since it tends to strengthen the defensive army."<sup>80</sup> In addition, General James Gavin also advocated for battlefield weapons, becoming a member of the WESG project tasked with the study of this subject.<sup>81</sup> Both the Navy and the Army came to regard strategic bombing campaigns

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<sup>76</sup> Report to the President by the Special Committee of the National Security Council, "The Proposed Acceleration of the Atomic Energy Program," October 10<sup>th</sup>, 1949, *FRUS 1949, National Security Affairs, Foreign Economic Policy, Vol. I*, 560.

<sup>77</sup> For the November 1950 panel on military objectives, See Gilpin, *American Scientists*, 114.

<sup>78</sup> J. Robert Oppenheimer, "Comments on the Military Value of the Atom," speech reprinted in *Bulletin of Atomic Scientists* 7, no. 2 (February 1951): 45.

<sup>79</sup> For an early representation of doubts within the State Department concerning the political and military disadvantages of strategic bombing campaigns see William Walton Butterworth, "Memorandum by the Director of the Office of Far Eastern Affairs on NSC Paper No. 30 on US Policy on Atomic Warfare," September 15<sup>th</sup>, 1948, *FRUS, 1948, General: The United Nations, Vol. I, Part 2*, 630-631.

<sup>80</sup> Omar Bradley with Beverly Smith, "This Way Lies Peace," *Saturday Evening Post*, October 15<sup>th</sup>, 1949.

<sup>81</sup> Patrick J. Garrity, "Project ATTACK and Project VISTA: Benchmark Studies on the Road to NATO's Early TNF Policy," in R. L. Rinne, *The History of NATO TNF Policy: The Role of Studies, Analysis and Exercises - Conference Proceedings*, Vol. II (Sandia National Laboratories, 1994), 40, <[http://www.iaea.org/inis/collection/NCLCollectionStore/\\_Public/26/072/26072023.pdf](http://www.iaea.org/inis/collection/NCLCollectionStore/_Public/26/072/26072023.pdf)>, accessed July 29<sup>th</sup>, 2018. Gavin was perhaps the earliest military proponent of TNWs. As early as 1946, he attempted to involve the Army in nuclear warfare by "matching nuclear bomber attacks with a parachute assault." See James M. Gavin, *War and Peace in the Space Age* (New York: Harper Brothers, 1958), 111-113.

as ineffective, especially if Europe was overrun by the Soviet forces.<sup>82</sup> In October 1949, Admiral Ofstie argued that the strategic bombardment of urban areas was in severe contradiction to the “fundamental ideals, policies, and commitments of the United States.”<sup>83</sup>

The outbreak of the Korean War on June 25<sup>th</sup>, 1950, had a dual impact on Oppenheimer’s quest in support of TNWs. First, the war offered an opportunity for public discussion concerning the potentialities of tactical uses of atomic weapons. Oppenheimer made use of his public image and prestige to further shift American nuclear policy towards tactical weapons in defiance of the secrecy surrounding policy decisions. Second, as Evangelista noted, the war “provided the impetus to carry out a rearmament program that had been proposed in April 1950 in NSC-68.”<sup>84</sup> This caused a surge in military expenditure, allowing for consideration of large-scale build-up of the American TNWs stockpile and subsequent expansions of atomic production facilities. Although development of the hydrogen bomb was among the policies discussed within NSC-68, the document received Oppenheimer’s blessing in late February 1950.<sup>85</sup>

As part of Project Vista, a joint study between the military and the scientific community focusing on tactical warfare and the defense of Europe, Oppenheimer visited Paris in November 1951 for a series of meetings with General Eisenhower, Supreme Allied Commander Europe.<sup>86</sup> The project, which concluded in February 1952, argued that with smaller nuclear warheads available, “nuclear power could be used to offset deficiencies in conventional arms,” avoiding an expensive build-up of conventional forces and massive retaliation.<sup>87</sup> Vista, directly challenging

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<sup>82</sup> See General J. Lawton Collins, with Peter Axel, in *Bulletin of the Atomic Scientists* 7, no. 4 (April 1951): 123.

<sup>83</sup> Ralph Ofstie, quoted in Paul Y. Hammond, “Super Carriers and B-36 Bombers: Appropriations, Strategy and Politics,” in Harold Stein (ed.), *American Civil Military Decisions: A Book of Case Studies* (Tuscaloosa: University of Alabama Press, 1963), 524.

<sup>84</sup> Evangelista, *Innovation*, 115.

<sup>85</sup> Oppenheimer had been one of the first outsiders holding a Q clearance to whom Paul Nitze had shown drafts of NSC-68 as part of “a process of constituency building,” further attesting to the influence which the renowned physicist held in government as in the public sphere. See “Record of the Meeting of the State-Defense Policy Review Group, Department of State, Monday, February 27<sup>th</sup>, 1950, 3 p.m. to 6 p.m.,” *FRUS, 1950, National Security Affairs, Foreign Economic Policy*, 168-175, and Ernest May, *American Cold War Strategy: Interpreting NSC-68* (Boston: Bedford Books of St. Martin’s Press, 1993), 10-12.

<sup>86</sup> Vista members Charles Lauritsen and Lee DuBridge, together with Walter Whitman, accompanied Oppenheimer on his visit to the NATO Headquarters. Philip M. Stern, *The Oppenheimer Case: Security on Trial* (New York: Harper & Row, 1969), 181-183. See “Project Vista: A Study of Ground and Air Tactical Warfare with Especial Reference to the Defense of Western Europe,” 2 vols., February 2<sup>nd</sup>, 1952, in Modern Military Branch, National Archives, Washington D.C.

<sup>87</sup> David C. Elliot, “Project Vista and Nuclear Weapons in Europe,” *International Security* 11, no. 1 (1986): 164.

SAC as the United States' main atomic branch, recommended that one-third of the American nuclear stockpile be dedicated for tactical weapons in Europe, predicting that these armaments would allow a limited number of ground forces to efficiently counter the more numerous Soviet troops.<sup>88</sup> Oppenheimer was greatly influential in Project Vista, personally drafting chapter five of the study, "the core of the group's ideas on battlefield nuclear warfare."<sup>89</sup>

Scholarly evaluations of Vista's impact on American policy have ranged from Schwartz's claim that the project "became the rallying point" for TNWs to Elliot's more convincing discussion of the Air Force's burial of the report until the early-1980s.<sup>90</sup> Despite this, Vista did convince General Eisenhower of the benefits of TNWs and promoted a relaxation of the security regime through discussions with Allied commanders.<sup>91</sup> Ultimately, as the supporters of battlefield bombs increased to encompass senators, representatives and military officials, the influence of nuclear physicists waned, as "events were overtaking them."<sup>92</sup> Truman had in fact authorized a major expansion of TNW production before the Vista report had even been presented.

After various attempts to win support in favor of TNWs in the late-1940s, proponents publicly discussed the benefits and potential of tactical weapons in the context of the Korean War and a hypothetical Soviet expansion in Europe. The lobbying and influence of supporters such as Oppenheimer, Admiral Ofstie and General Bradley resulted in the mass production of TNWs as well as their inclusion in NATO defensive plans.<sup>93</sup> The physicist's influence on the scientific community, the military and the government played a significant role in the development and adoption of TNWs in American war planning, especially during the late-1940s. While he was unsuccessful in his goal to stop the development of thermonuclear weapons in favor of low-yield bombs, his participation in several panels and committees as well as his public

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<sup>88</sup> Gavin, *War and Peace*, 5, and Paul Schulte, "Tactical Nuclear Weapons," 17.

<sup>89</sup> Evangelista, *Innovation*, 137. See also AEC, *In the Matter of J. Robert Oppenheimer*, 616-617.

<sup>90</sup> David N. Schwartz, *NATO's Nuclear Dilemmas* (Washington, D.C.: Brookings Institution Press, 1983), 21, and Elliot, "Project Vista," 177.

<sup>91</sup> AEC, *In the Matter of J. Robert Oppenheimer*, 48.

<sup>92</sup> Evangelista, *Innovation*, 146.

<sup>93</sup> The Army's field manual "Tactical Uses of Atomic Weapons" (FM 100-31) was published in November 1951. It formed the basis for NATO war planning for several decades, later enshrined in FM 101-31-1, which planned to employ nuclear weapons "to destroy or degrade enemy combat capabilities." See Department of the Army, "Staff Officers Field Manual Nuclear Weapons Employment," FM 101-31-1, Washington D.C.: US Government Printing Office, Chapter 1, 2. The revised 1968 version of FM 101-31-1 is accessible online at <<http://www.bits.de/NRANEU/others/amd-us-archive/FM101-31-1C1%2869%29.pdf>>.

advocacy greatly enhanced support for battlefield atomic bombs. His influence prompted scholars such as Dyson to note how the thousands of nuclear weapons which would populate Western Europe for almost four decades were “a monument to Oppenheimer’s rhetoric skills.”<sup>94</sup>

## Conclusion

Oppenheimer’s contribution to ushering in the nuclear age as ‘father of the atomic bomb’ cemented his legacy as an iconic figure of the twentieth century. After the Second World War, he enjoyed great prestige both within parts of the US government as well as in the media, developing celebrity status. He quickly embraced his public image as voice for the American scientific community, especially for those who had worked at Los Alamos during the war. This prestige aided his ascent to positions of authority, including chairing the General Advisory Committee of the AEC. Exploiting his influential status, Oppenheimer attempted, with varying degrees of success, to redirect American nuclear policy. Between the end of the Second World War and the revocation of his Q clearance spurred by his political enemies in 1954, he engaged in numerous political controversies which further soured his political rivalries.

The evolution of Oppenheimer’s understanding of nuclear weapons after the Second World War was not linear, reinforcing his characterization as mercurial, often overly enigmatic and certainly fiercely ambitious. In 1946, he focused his efforts in favor of the internationalization of fissionable material as well as uranium mining and production facilities based upon Bohr’s vision of an open-world. Ultimately, he failed to achieve his goal as the Acheson-Lilienthal Report did not receive the support of Truman, Byrnes and Baruch. Despite his characteristic eloquence and public prestige, his quest for international control was cut short by members of the administration whom he had failed to convince. As a result, Oppenheimer later adapted to his responsibilities as GAC Chair, concluding that the Atomic Energy Commission’s purpose was to ensure that a multitude of nuclear weapons would support the American defense posture.

While this was undoubtedly more in line with the contemporary political climate, the controversies surrounding him did not subside. In 1948 he became a fervent proponent of low-yield tactical nuclear weapons under the jurisdiction of the Army, at a time when war planning

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<sup>94</sup> Dyson, *Weapons and Hope*, 153.

was dominated by the Air Force's strategic bombing campaigns. He deemed TNWs to be technically, militarily and morally superior to larger armaments, drawing his conclusions from recent technological advancements as well as the overwhelming superiority in quality and quantity of US atomic armaments in the early-1950s. This led to heated debates between supporters of TNWs and proponents, such as Edward Teller and Lewis Strauss, of a crash program to develop thermonuclear weapons.

Oppenheimer lobbied energetically to prevent the development of the hydrogen bomb while pushing for the adoption of TNWs in war plans. While he was ultimately unsuccessful in the former objective — the thermonuclear crash program was approved by Truman in January 1950 — his influence proved decisive for the incorporation of battlefield nuclear weapons in plans to defend Western Europe. Through his consulting with various committees and organizations, he was able to extend his military contacts, which proved instrumental for the mass-production of tactical weapons. Oppenheimer succeeded in building upon the interest of proponents of an Army-centered defense strategy in battlefield nuclear armaments during the late-1940s, earning increasing support for the new armaments from both military officials and senators.

In conclusion, Oppenheimer's impact on American nuclear policy fluctuated, as he had a limited effect on both the US efforts for international control and the development of the hydrogen bomb but had extensive influence on the inclusion of TNWs in the American nuclear posture. His eloquence and persuasiveness earned him the support of prestigious men such as Kennan and Lilienthal in his various battles for international control and against unnecessary secrecy, but ultimately proved to be insufficient to redirect American policy. Oppenheimer's legacy would, however, be represented by the thousands of nuclear weapons populating Western Europe for most of the Cold War. Ironically, these would ultimately jeopardize the security of the world once the preponderance of power upon which support for TNWs had been based was balanced by the Soviets.