“Oppenheimer” Movie and the Hungarian Scientists

Tsuneo MORITA

The controversial American film "Oppenheimer" is difficult to watch without prior knowledge. It is not difficult to obtain information on the life of Robert Oppenheimer (1904-1967), as many books have already been published on the subject. Director Christopher Edward Nolan wrote the screenplay based on the book Prometheus: The Triumph and Tragedy of J. Robert Oppenheimer. The film seems to be sprinkled with devices and original ideas not found in the original work.

The film centers on the daily life of the Los Alamos Research Institute (established in 1943), which developed the atomic bomb, and the Oppenheimer hearings (April 1954).

The film begins with Oppenheimer at the hearing. In line with what was pursued at the hearing, the film depicts Oppenheimer's research career and friendships, even his personal relationships with women, before he became the head of research and development at Los Alamos.

After the war, Oppenheimer left Los Alamos and returned to the university, and then he was appointed director of the Institute for Advanced Study at Princeton University in 1947 and was welcomed by Institute Trustee Strauss (Lewis L. Strauss[/ˈstrɔːz/ STRAWZ]). Strauss was the one who was jealous of Oppenheimer, prepared a document accusing Oppenheimer, and sent it to the FBI. Although Strauss succeeded in getting Oppenheimer exonerated at the Oppenheimer hearings (1954), his own appointment as Secretary of Commerce was rejected by a Senate resolution (1959) based on the hearings (which lasted two months) that determined his appointment as Secretary of Commerce. Oppenheimer's honor is later restored, and the film ends with him being presented with the Enrico Fermi Award at the White House in 1963, where scientists who testified against him at the hearings also come to celebrate.

Strauss's one-sided envy and hostility resulted in Oppenheimer's decertification. Strouse is a founding member of the Atomic Energy Commission (AEC, United States Atomic Energy Commission). Still, he is a businessman (investment banker), not a scientist who studied physics in college. His academic complexes greatly influence Strouse's actions. It is through his financial and political power that Strauss* was able to exercise such influence as becoming a trustee of the Institute for Advanced Study at Princeton University and chairman of the AEC.

* In movies and various literature, Strauss is described as "a shoe salesman without a college degree who rose to prominence," but he is not that simple a man. His interest in nuclear power began when his mother died of cancer. When Strauss learned of the possibilities of radiation therapy, he sought the advice of the Hungarian physicist Szilard and funded Szilard's project. His interest in nuclear energy began there. He later made a fortune and entered politics, becoming a Republican politician who represented the views of military hawks.

When Oppenheimer was greeted by Strauss upon his arrival as director of the Institute for

Advanced Study, Strauss' self-esteem was severely damaged when he was asked whether he had studied physics at university and when Einstein, after a private conversation with Oppenheimer, left the scenery as if to ignore Strauss. He mistakenly believed that Einstein and Oppenheimer gossiped about Strouss and became hostile toward Oppenheimer, who boasted of his fame from this first encounter. He seems to have been a man obsessed with worldly honor and status, as evidenced by the fact that he included his name as the fifth on the list of director candidates prepared for submission to the faculty committee during the director selection process. He was also rooted in Oppenheimer's comments at the AEC Advisory Committee in 1949, in which Oppenheimer ridiculed his ignorance in relation to the export ban on experimental isotopes that Strauss had raised.

These events unfold out of chronological order, making it difficult for viewers with no prior knowledge to follow the film's plot. The Hungarian physicists played an important role in the development of the atomic bomb and subsequent international diplomacy over nuclear weapons. Edward Teller (Teller Ede), who feuded with Oppenheimer over the development of the hydrogen bomb and testified against him at the hearing, promoted the development of the bomb at Los Alamos after Oppenheimer left. John von Neumann (Neumann János), a professor at the Institute for Advanced Study in Princeton, was not part of the political fray, but led important numerical calculations at Los Alamos, including bomb detonation, and united young mathematicians, which is not depicted at all in this film. As an aside, Neumann was interested from this time on in developing a computer capable of high-speed numerical calculations. On the other hand, Szilard (Szilárd Leó) was politically influential in encouraging Einstein to send letters to Presidents Roosevelt and Truman, and after the war, he was instrumental in organizing the Pugwash conferences. Although these Jewish Hungarians in exile were able to argue with each other, it is not difficult to imagine that each of them had a rather strong personality.

Successful Fission Tests and the Discovery of Uranium Ore

In 1938, with Nazi Germany on the rise, news of a successful test of nuclear fission in Germany broke out, and Western scientists feared that Nazi Germany would proceed with the development of an atomic bomb. Szilard persuaded Einstein to write a letter to President Roosevelt, suggesting that they develop an atomic bomb ahead of Germany. Eugen Wigner (Wigner Jenő, one grade above Neumann at Budapest Fasori High School and a professor at Princeton University) joined Einstein in the meeting. This led to the realization of the Manhattan Project. Wigner was involved in the design of the nuclear reactor in the Manhattan Project and was awarded the Nobel Prize in Physics in 1964. In addition, Szilard and the Italian physicist Enrico Fermi (Nobel Prize in Physics, 1938) succeeded in building mankind's first nuclear reactor at the Metallurgical Laboratory in Chicago (Chicago Pile-1, 1942). Szilard and Fermi jointly applied for this reactor patent (1944).

The New York Times

Copyright © 1998 The New York Times FRIDAY, MARCH 20, 1998

Hungarian Fingerprints All Over the 20th Century

By JANE PERLEZ

BUDAPEST — He was a man of brilliant and diverse intellectual energy who discovered the nuclear chain reaction, went on to help develop the atom bomb and then tirelessly campaigned against it.

He soaked in the bath three hours a day, thinking up incredible inventions, needled his scientific colleagues with puckish humor and refused to flush the toilet in his room at the University of Chicago in the 1940's, insisting that it was "maid's work."

So it was with ambivalent pride and a sense of lost glory that Hungary celebrated the centenary of Leo Szilard, who died in 1964. Szilard (pronounced SIH-lahrd) was perhaps the most quixotic of the renowned physicists and mathematicians who were born and educated here but who fled, often, like Szilard, under the shadow of anti-Semitism, to the United States.

Hungarian scientists have had a deep impact on the 20th century. John von Neumann made fundamental contributions to quantum theory as well as the development of the atomic bomb and the high-speed electronic computer. Albert von Szent-Gyorgyi was credited with first isolating vitamin C. For a country of its population (10 million), Hungary has produced an immoderate number of Nobel Prize winners. Hungarians who became American citizens, including Szilard, Eugene Wigner and Edward Teller, played a major part in the Manhattan Project in World War II.

But few in this pantheon of Martians — a nickname spun from the scientists' superhuman intelligence and their unearthly Hungarian language — so keenly felt that the pursuit of science also carried political and personal responsibilities.

"The Hungarians have plenty of first-rate scientists and Nobel Laureates to celebrate," said Szilard's American biographer, William Lanouette, who was among those at the ceremonies in February. "Yet Szilard alone personifies the moral and ethical responsibilities of science. He had the drive to foresee the social and political consequences of discovery."

Mr. Lanouette records in his book "Genius in the Shadows" how Szilard, at the start of the war, drafted the letter signed by Albert Einstein that urged President Roosevelt to speed up work on the nuclear bomb before the Germans developed it; after the war he spent much of his time trying to ease the arms race that he helped create.

With a combination of banter and logic, Szilard persuaded Nikita S. Khrushchev, the Soviet leader, that a hot line between the Kremlin and the White House was a good idea. During the Eisenhower and Kennedy years, he flooded the State Department with nuclear disarmament programs that were mostly rebuffed.

A tubby figure who loved to eat fatty Hungarian delicacies, Szilard was often thought of as maddeningly eccentric. Sometimes this eccentricity produced breathtaking flights of fancy: He came up with the idea of electrifying barbers' chairs so that a man's hair would stand on end, allowing the barber to do a fast mowing job.

For Hungarian intellectuals who remained in Hungary, Szilard and his émigré colleagues represent a bittersweet phenomenon. On the one hand, there is pride that Hungary has produced so many important minds. Yet there is also sadness that so many fled — and that the new generation of best brains continues to leave.

Now, instead of being enticed by the ferment in German and American universities as their elders were between the two world wars, young Hungarian scientists are wooed abroad by Western companies.

"Today the most gifted Hungarians leave the country while they are graduate students," said Gabor Pallo, the deputy director of the philosophy institute at the Hungarian Academy of Sciences.

After more than 40 years of Communism and a rough transition to a market economy, Hungary lacked the financial resources to keep them.

In the popular mythology, this crew of geniuses are shadowy figures in Hungary. For most of the cold war, they were considered soldiers in the enemy camp and banned in the media and school texts. Then in the early 1980's, when the Hungarian leader Janos Kadar was eager to improve his nation's profile in the West and wanted to pump up sagging intellectual morale at home, the émigré scientists were dusted off.

Mr. Pallo said that by 1983, he was allowed to publish some of his research on the scientists and in 1985 he was asked to give a lecture at the prestigious Academy of Sciences on Hungarian-born Nobel Prize winners. Some of the scientists came back in their old age for short visits before the collapse of Communism; the fiercely anti-Communist Mr. Teller waited until after 1989.

But like Andrew Grove, who as a young science student fled Hungary after the failed 1956 uprising and is now chairman and chief executive of the computer giant Intel, Szilard showed little interest in Hungary, Mr. Pallo said.

Even so, Szilard is now buried here. At least, part of him.

Szilard's ashes, kept in a California crematory after his death, were reburied in a cemetery during the centenary ceremonies. According to his family's wishes, half of his ashes were sent to Budapest. The other half were dispatched to upstate New York, where his wife is buried.

This is not quite what Szilard had in mind. Before he died in La Jolla, Calif., he said he wanted his ashes tied to a helium balloon and sent into the sky. People, he said, should look up rather than down.

"March of Time"/Time-Life Films, courtesy of SFM Entertainment

A film "still" from a 1946 "March of Time" production in which Albert Einstein and Leo Szilard recreated the day in 1939 when they drafted a letter to President Roosevelt urging that work on an atom bomb be speeded before Germany developed one. This led to the formation of the Manhattan Project.

Remembering a giant of nuclear physics.

NHK's special documentary "Atomic Bomb, Secret Records: Mysterious Merchants and the Battle for Uranium" (broadcasted on August 6, 2023) revealed some interesting facts about uranium ore. Edgar Sengier, an engineer for the Belgian company Union Minière du Haut Katanga, who was engaged in copper mining in the Congo, accidentally discovered high-purity uranium ore in a copper mine (1920). Thinking that the ore might be useful for something in the future, Sengier began mining uranium ore and stored more than 1,000 tons of it in the Congo. However, mining of the uranium ore, which had no use, was halted in 1937, and the mine was closed.

However, in 1938, news of a fission reaction (a chain reaction of nuclear fission caused by bombarding uranium 235 with neutrons) sparked a surge of interest in uranium ore. In the film, Lawrence (Ernest Lawrence, Nobel Prize in Physics 1939) reads the newspaper article in his barber shop and runs out of the store. Sanger, fearing that the Congolese uranium ore would go to Nazi Germany, sent his entire inventory of 1,200 tons to New York. On the other hand, 100 tons of uranium

ore was sent to Belgium, which eventually fell into German hands, and then the Soviet Union, which had occupied Germany, searched for this uranium ore and took it to the Soviet Union.

Negotiations began (1942) between Sanjeh of Union Minières and U.S. military material procurers over the uranium ore sent to New York, and eventually, the U.S. government bought all 1,200 tons of uranium ore and not only reopened uranium mines in the Congo but also accelerated mining. In the U.S., a uranium enrichment facility was built in Oak Ridge, and the enriched uranium was shipped to Los Alamos, which was developing an atomic bomb.

By coincidence of history, the uranium ore discovered in Congo in 1920 was used to produce the atomic bomb that was dropped on Japan.

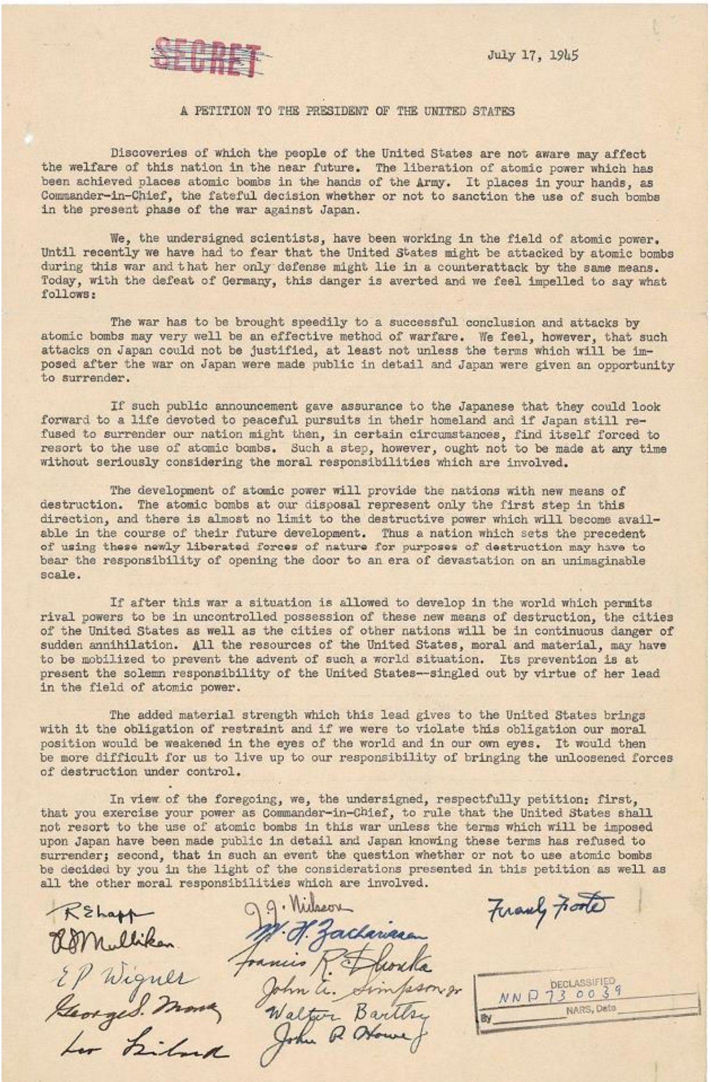
Los Alamos

The U.S., which had already set its sights on producing enriched uranium ahead of Germany, decided to devote all its energy to developing the atomic bomb. Under the general leadership of General Groves, the Atomic Bomb Research and Development City was built on the vast prairie of Los Alamos (1943). Oppenheimer was chosen as the director of the National Laboratory, which united the R&D workers. Lawrence, who had a proven record in physics, was also a candidate, but Oppenheimer was chosen because of his popularity. Los Alamos gathered the best minds in physics, mathematics, and engineering from all over the United States. Teller and Neumann set up their laboratories at Los Alamos, but Szilard, more of a scientific politician than a researcher, was uninvited from the start. However, it seems that he often visited Los Alamos, much to the annoyance of General Groves. Wigner stayed in Chicago to work on the development of the nuclear reactor and was not involved in Los Alamos's research, which was primarily aimed at bomb-making.

Neumann wanted to do something to meet the needs of the times as the world was going to war. The Ballistics Institute at Aberdeen had Theodor (Tódor) Kármán (an authority on fluid dynamics from Budapest known for his "Kármán Vortex Flow"), and there Neumann was working on shock wave analysis as a member of the scientific advisory board of the institute. At Los Alamos, Neumann worked on numerical calculations of implosion (the nuclear material set in the center of a bomb is subjected to a strong shock wave with an explosive to bring the nuclear material to a critical state). Without the accurate calculation of this shock wave, the atomic bomb would not have been completed. For this work, he invited Ulam, a Polish mathematician to Los Alamos. After the war, Ulam teamed up with Teller to pursue research on the hydrogen bomb.

Los Alamos was a place where experimental physicists and engineers were well represented, but Neumann, one of the world's leading authorities on mathematics, held a special position. With the completion of the atomic bomb in sight, The Interim Committee (chaired by Secretary of War Stimson) was established with the approval of President Truman to determine the target of the bombing. To prepare a draft proposal for this committee, General Groves held a meeting of "The Targeting

Committee" in Los Alamos. Neumann attended and presented the results of the explosion altitude calculations. He also endorsed the Air Force's proposals for Kyoto, Hiroshima, Yokohama, the Imperial Palace, the Kokura munitions depot, and Niigata as targets, but opposed the Imperial Palace and endorsed the three cities except Niigata and the Kokura munitions depot because of the lack of information on Niigata. Finally, the Target Committee submitted five targets to the Provisional Committee: Kyoto, Hiroshima, Yokohama, Niigata, and the Kokura Munitions Factory.



~~SECRET~~

July 17, 1945

A PETITION TO THE PRESIDENT OF THE UNITED STATES

Discoveries of which the people of the United States are not aware may affect the welfare of this nation in the near future. The liberation of atomic power which has been achieved places atomic bombs in the hands of the Army. It places in your hands, as Commander-in-Chief, the fateful decision whether or not to sanction the use of such bombs in the present phase of the war against Japan.

We, the undersigned scientists, have been working in the field of atomic power. Until recently we have had to fear that the United States might be attacked by atomic bombs during this war and that her only defense might lie in a counterattack by the same means. Today, with the defeat of Germany, this danger is averted and we feel impelled to say what follows:

The war has to be brought speedily to a successful conclusion and attacks by atomic bombs may very well be an effective method of warfare. We feel, however, that such attacks on Japan could not be justified, at least not unless the terms which will be imposed after the war on Japan were made public in detail and Japan were given an opportunity to surrender.

If such public announcement gave assurance to the Japanese that they could look forward to a life devoted to peaceful pursuits in their homeland and if Japan still refused to surrender our nation might then, in certain circumstances, find itself forced to resort to the use of atomic bombs. Such a step, however, ought not to be made at any time without seriously considering the moral responsibilities which are involved.

The development of atomic power will provide the nations with new means of destruction. The atomic bombs at our disposal represent only the first step in this direction, and there is almost no limit to the destructive power which will become available in the course of their future development. Thus a nation which sets the precedent of using these newly liberated forces of nature for purposes of destruction may have to bear the responsibility of opening the door to an era of devastation on an unimaginable scale.

If after this war a situation is allowed to develop in the world which permits rival powers to be in uncontrolled possession of these new means of destruction, the cities of the United States as well as the cities of other nations will be in continuous danger of sudden annihilation. All the resources of the United States, moral and material, may have to be mobilized to prevent the advent of such a world situation. Its prevention is at present the solemn responsibility of the United States--singled out by virtue of her lead in the field of atomic power.

The added material strength which this lead gives to the United States brings with it the obligation of restraint and if we were to violate this obligation our moral position would be weakened in the eyes of the world and in our own eyes. It would then be more difficult for us to live up to our responsibility of bringing the unloosened forces of destruction under control.

In view of the foregoing, we, the undersigned, respectfully petition: first, that you exercise your power as Commander-in-Chief, to rule that the United States shall not resort to the use of atomic bombs in this war unless the terms which will be imposed upon Japan have been made public in detail and Japan knowing these terms has refused to surrender; second, that in such an event the question whether or not to use atomic bombs be decided by you in the light of the considerations presented in this petition as well as all the other moral responsibilities which are involved.

DECLASSIFIED
NND 730039
By ______ NARS, Date ______

The committee to determine the targets was called the "Provisional Committee" (consisting of eight members, including Stimson) because it was temporarily set up under the direct control of the President, and it met eight times beginning on May 9, 1945. At this meeting, Stimson opposed dropping the bomb on Kyoto, Tokyo near Yokohama had already been bombed, and therefore Nagasaki far from Tokyo, was floated. In the film, Stimson stated that Kyoto would be dropped from

a list of 12 possible locations (the intelligence service had also listed munitions factory targets) because Kyoto was a cultural center and honeymoon spot. Thus, after much discussion, three targets were selected and one was finally dropped on Hiroshima on August 6, when the weather was good, and the second candidate, Nagasaki, was chosen as the target on August 9, because the weather in Kokura, the first candidate, was bad.

The Interim Committee, the supreme decision-making body for determining drop targets, established a Scientific Panel to hear from scientists who had participated in the Manhattan Project. The panel included Oppenheimer, Lawrence, Fermi, and Compton. The panel was established because of the growing frustration and fear among scientists about the effects of the atomic bomb and the postwar arms race, as well as the publicity of Szilard's petition.

Once the atomic bomb was completed, Szilard sent a petition to President Truman. The letter, also signed by Wigner, was dated July 17, 1945. The letter argued that the Japanese surrender should be sought first: "The bombing of Japan should not be carried out without prior warning and the offer of terms of surrender." Szilard, through Teller, asked for the signatures of the Los Alamos scientists, but none signed*

* Mainly the scientists who were working on the development of Chicago-Pile 1 signed. The movie depicts Oppenheimer meeting Szilard at a hotel in Washington, D.C., and being asked by the scientist accompanying him (D. Hill, an experimental physicist) to sign the petition, which he somewhat abruptly refuses.

Neither the scientists involved in the development of the bomb nor the government and military, which were aiming for military supremacy after the war, would have thought of letting it lie in storage after two years and a huge budget had been spent to complete it. Szilard appears only briefly in the film, and there is no place for him in the film.

Nevertheless, although the Interim Committee had on its agenda the "possibility of dropping the bomb with a warning" and the invitation of foreign observers to the test site, none of these were ever carried out. Also, at the Potsdam Conference in July, President Truman only hinted to Stalin about the existence of a new type of bomb. However, the Soviets had already obtained information from Los Alamos, and Stalin is said to have listened to Truman, pretending that he did not understand the importance of the atomic bomb.

Allegations against Oppenheimer

Without exception, anyone involved in Los Alamos development research or other work was subjected to rigorous security checks.

As for Oppenheimer, who was originally known to be a liberal thinker, his wife Kitty (Kitty Harison), Jean Tatlock (Jean Tatlock), his lover before he knew Kitty, and his parents and siblings were investigated. Kitty was a former Communist Party member, Oppenheimer’s brother (Frank

Oppenheimer, experimental physicist) was also a former Communist Party member (he left the party in 1939 and later worked on the Los Alamos atomic bomb tests at his brother's request), and Jean was an active Communist Party member. Although he was not a member of the Communist Party, he sent support money through the Communist Party to the People's Front fighting the Spanish Civil War. This political relationship became one important theme of the later hearings.

Oppenheimer, who had married Kitty in 1940 (Kitty was his fourth marriage), spent the night with Jean when he went to Berkeley in June 1943 to recruit assistants. The whole affair was monitored by the Intelligence Service. This was the last time Oppenheimer saw Jean, who committed suicide in January 1944 by putting his face in the bathtub. However, it is still considered inconclusive whether it was really suicide or murder by an intelligence officer. As if to suggest this, the film shows a black glove holding Gene's head in the bathtub for a moment. A scenario exists in which Jean was assassinated to completely cut off his ties to the Communist Party from the director of the Los Alamos Institute, which is a state secret.

Another allegation leveled against Oppenheimer is his reluctance to develop a post-atomic hydrogen bomb. At Los Alamos, Teller and Oppenheimer were often at odds. When Teller argued for the development of a more powerful hydrogen bomb (super) over the development strategy after the atomic bomb, Oppenheimer worried not only about the technical difficulty of producing a fusion bomb but also about the possibility of an unchecked arms race. Teller could not stand this reluctance.

Moreover, despite predictions that it would take the Soviet Union much longer to develop an atomic bomb, a successful Soviet atomic bomb test in 1949 took the United States by surprise. Suspicions were raised that the secrets of Los Alamos had been leaked and that there might have been spies. In fact, Klaus Fucks* (a British national), a German physicist who participated in the Los Alamos experiment, had been leaking information he learned to the Soviet Union from the beginning. In the film, Fucks appears at the site of the experiment. So, when Truman suggested to Stalin at the Potsdam Conference that he had completed a new type of bomb, Stalin already knew that it was an atomic bomb, but he acted as if he was indifferent to the development of the atomic bomb. Hitler never proceeded to develop an atomic bomb because he believed that quantum mechanics was a delusion of Jewish scientists, but American politicians underestimated the capabilities of Soviet scientists.

* Joint U.S.-U.K. Soviet code-breaking (the Venona Project) exposed Fuchs's espionage activities, and his confession in January 1950 earned him a 40-year sentence at his March trial; after his release in 1959, he moved to East Germany and helped develop the atomic bomb in the Soviet bloc.

Even with these problems, it is impossible to disparage Oppenheimer's career, in which he fulfilled his job as the person responsible for the development of the atomic bomb. However, the development of postwar world politics led to the Cold War and the rise of military hawks, and a political movement began to decry scientists, politicians, and government officials who were reluctant to engage in

military competition with the Soviet Union.

The rise of military hawks due to the intensification of the Cold War entered the political arena in the form of Senator McCarthy's "Red Hunt". Scientists who advocated peaceful coexistence with the Soviet Union and international control of nuclear weapons, as well as Communists and their sympathizers in various fields, became victims of this movement. Then, with the inauguration of President Eisenhower (January 1953), Strauss was approached to become chairman of the AEC. The condition that Strouse demanded at that time was that Oppenheimer be removed as an AEC advisor. This is where the political movement to oust Oppenheimer, led by Strauss, began.

Security Hearing

Against this political background, a hearing was held (April 1954) to question Oppenheimer on the allegations against him. This hearing was not a trial for espionage, but rather a background investigation committee within the AEC. Moreover, its final decision was simply to "revoke security clearance" from Oppenheimer, which would do no real harm to Oppenheimer, who was already not participating in active development. The fact that the small and shabby conference room at the AEC was used as the room for the hearing was also intended to damage Oppenheimer's self-esteem.

Because the hearing was not a trial, there was no prior disclosure of documents (documents sent by Strauss to the FBI) or confirmation of the credibility of the testimony, and the "defendant" Oppenheimer and his attorney were given various testimonies and documents on the spot at the hearing. Therefore, Oppenheimer's attorneys could not prepare in advance, and Oppenheimer was forced to repeat contradictory testimony from memory.

Ultimately, Teller's testimony at the hearing is said to have influenced the committee's final decision. McCarthy had publicly stated that the development of the H-bomb in the U.S. had been delayed because of leftist physicists, so Teller's testimony, which was constantly at odds with Oppenheimer on the development of the H-bomb, was extremely important. In this regard, Strauss expected Teller to give definitive testimony. In line with this expectation, Teller agreed with Oppenheimer's "revocation of his security clearance" on the grounds that "American nuclear policy should be entrusted to a more secure leader ". With this testimony, Teller lost the confidence of his fellow scientists.

The hearing judge ruled that "there is no doubt about Oppenheimer's patriotism, but by a 2-1 resolution, Oppenheimer's access to classified documents is revoked ".

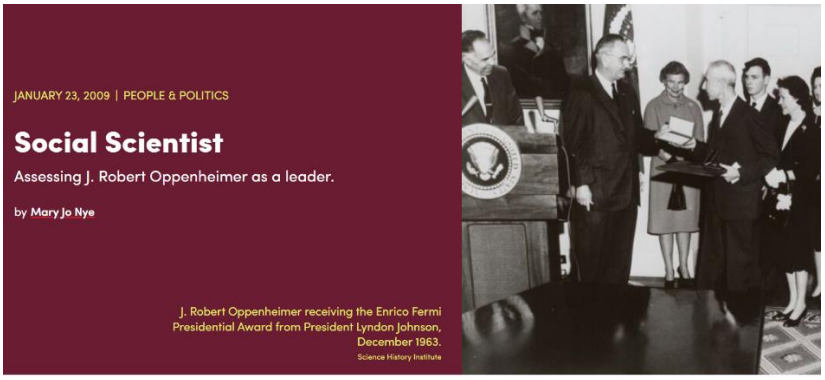
Strauss and Oppenheimer afterward

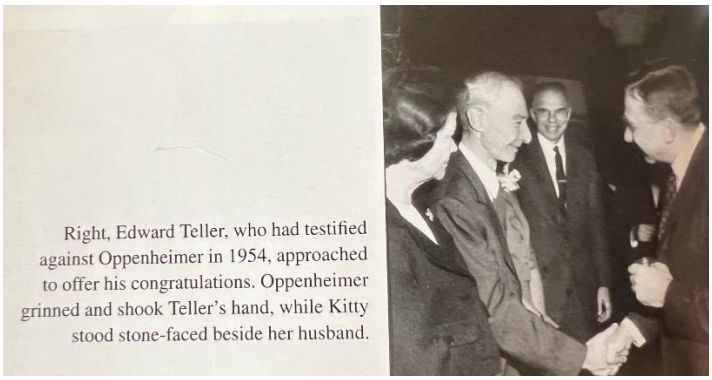
Although Strauss succeeded in removing Oppenheimer from the AEC, an unexpected pitfall awaited him. In June 1959, five years after the hearing, Strauss was to have been nominated by President Eisenhower to become Secretary of Commerce. At the hearing to review Strauss's suitability, an unexpected witness appeared. Hill (played in the film by actor Rami Malek), an experimental physicist

who had worked with Szilard, testified on behalf of the scientists. Hill affirmed that the Oppenheimer denial hearings had been orchestrated by Strauss's personal enmity and that many scientists would not support Strauss in assuming such a high position. By this time, it was common knowledge among scientists that the Oppenheimer hearings had been orchestrated by Strauss.

At the time, the Eisenhower administration was being lame ducked by the Democrats, who had flipped seats in Congress. Nevertheless, the nomination for Secretary of Commerce, a less important post, was expected to pass the Senate without a problem. At first, the Democrats were leaning toward accepting Strauss's appointment, but political forces were working to make this a decisive blow to the Republicans. Then came Hill's testimony.

The Senate voted just after midnight on May 19 to reject Strauss as Secretary of Commerce, with one of the three holdout senators being John F. Kennedy, who explained that he did not agree with Strauss's position on Oppenheimer. This was an unusual event, only the second time in the past 69 years that a presidential nomination for a cabinet position had been rejected and is remembered not only as a major embarrassment to Strauss but also as an incident that marked the end of Eisenhower's reign.





Source: *American Prometheus: The Triumph and Tragedy of J. Robert Oppenheimer*

Kennedy became president in 1961 and Oppenheimer's honor was restored; the 1963 Fermi Prize was awarded to Oppenheimer. However, due to the assassination of President Kennedy in November,

Johnson, who became president from vice president, was to present the Fermi Prize to Oppenheimer at the December award ceremony. Many of his scientist friends attended the award ceremony. Teller, who had won the Fermi Prize the previous year, also attended and shook hands with Oppenheimer, but his wife Kitty refused to shake Teller's hand.

The film ends with Strouse's defeat and Oppenheimer's reinstatement.

A Hungarian Scientist Who Lived in the Turbulent 20th Century

As the twilight of the Habsburg Empire approached, Hungary was in the throes of nation-building like the Meiji Restoration in Japan. Educational reforms led to the establishment of world-class high schools from the 19th to 20th centuries, and these schools produced many of the scientific leaders of the 20th century. Most of them were brilliant geniuses who grew up in wealthy Jewish families: Tódor Kármán (1881-1963), Károly Polányi (1886-1964), Mihály Polányi (1891-1976), Leó Szilárd (1898-1964), Jenő Wigner (1902-1995), János Neumann (1903-1957), Ede Teller (1908-2003).

All these geniuses graduated from high school in Budapest, studied at German or Swiss universities, and then fled the persecution of Jews to the United States. Although not a scientist, Koestler (Kestler Artúr, 1905-1983), known for his "Darkness at Noon," was also an intellect who lived during this period.

They were born in the twilight of the Habsburg Empire (the Austro-Hungarian Double Empire), experienced World War I, and spent their adolescence in the political storms of Hungary's socialist and then right-wing regimes. During the subsequent persecution of Jews and the outbreak of World War II, each played a historical role. Szilard joined the Socialist Student Union and supported the Hungarian socialist government in 1919 but fled to Vienna when the regime collapsed. Kármán became Undersecretary of Education in the socialist government and fled to Germany when the regime collapsed.

Because Kun Béla and other leaders of the socialist government were Jewish, the right-wing government that was formed after the collapse of the socialist regime pursued an anti-Semitic policy and restricted Jews from entering universities. This led Wigner to move to the engineering institute in Berlin to study under Michael Polanyi, who had emigrated earlier. Neumann grew up in Budapest in the family of a wealthy banker, and when a group of activists entered their home during the establishment of the socialist government, the family fled to Vienna and returned to Budapest with the fall of the socialist regime.

The youngest of these scientists, Teller was born into a family of lawyers, and when his father realized his son's potential, he took Teller to see Neumann, Wigner, and Szilard; in 1926, he left Hungary and enrolled at the University of Karlsruhe.

Koestler also moved to Vienna with the fall of the socialist regime, and from there he traveled the world. His masterpiece, Darkness at Noon (1940) is a novel based on the real-life experiences of Eva

Striker, the daughter of Polányi Laura (sister of M. Polányi). Laura married and took the surname Striker, and her daughter Eva (Eva Striker, 1906-2011) married Austrian physicist A. Weissberg and moved to the Soviet Union. There, her husband fell victim to the Stalinist regime, and she herself was arrested and imprisoned for allegedly plotting to kill Stalin. After many twists and turns, she returned to Vienna in 1937. Koestler, who heard the whole story, wrote a novel about it. Eva Striker and Koestler had been childhood friends since kindergarten in Budapest.

Hungarian scientists working in Europe and the United States kept in touch with each other and had read Kösztler 's novel. Neumann had lectured in Moscow and intuitively felt that Soviet socialism had not succeeded.

The thoughts and feelings of the Hungarian scientist were not simple, having gone through the historical vicissitudes of the collapse of the Habsburg Empire, World War I, The Naci anti-Semitism, the Stalinist regime of the Soviet Union, which combined socialist ideology with Russian imperialism, World War II, and the establishment of American military supremacy. Szilard believed that humanity could not survive without international cooperation between the U.S. and the Soviet Union, while Teller believed that maintaining absolute U.S. dominance through the development of the hydrogen bomb would contribute to world stability. Neumann did not take part in the political debate and watched the situation unfold.

Oppenheimer, Neumann, and Fermi were all diagnosed with cancer and passed away before they could reach their full potential. It is thought that this may have been due to their frequent presence at atomic bomb tests. Neumann himself seemed to have realized this. He underestimated the effects of radiation on the body.

Literature

Noman Macrae, *John von Neumann*, A Cornelia and Michael Bessie Book, 1992

Gyorgy Marx, *The Voice of Martians*, Akadémiai Kiadó, 1997

Richard Rhodes, *Dark Sun – The Making of the Hydrogen Bomb*, Simon & Schuster, 1996

Kai Bird and Martin J. Sherwin, *American Prometheus: The Triumph and Tragedy of J. Robert Oppenheimer,* Atlantic Books, 2008

NHK Documentary, *Atomic Bomb: The Secret Record - Mystery Merchant and the Battle for Uranium*, broadcasted on August 6, 2023

Arthur Koestler, *Darkness at Noon*, Vintage 2019 (new translation)