The July 1945 Szilard Petition on the Atomic Bomb

Memoir by a signer in Oak Ridge

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Well before the first test of a nuclear explosive device at Alamogordo (New Mexico) on July 16, 1945, many scientists of the Manhattan (Atomic Bomb) Project were very concerned about how nuclear bombs might be used in World War II. Meetings were held at the University of Chicago site and at Oak Ridge (Tennessee) to discuss the future of atomic energy and its political implications. As a result, a petition originated by Leo Szilard and addressed to President Truman in July 1945 discussed the moral responsibilities involved in using nuclear weapons. It recommended that such bombs not be used against Japan "unless the terms which will be imposed upon Japan have been made public in detail and Japan knowing these terms has refused to surrender."

The Szilard petition was displayed during 1989/1990 in a special exhibition at the National Archives in Washington, D.C. This article explains how I happened to be in Oak Ridge, where I signed the petition, and examines its background and complex, unfortunate history.

From bacteriology to nuclear chemistry

After graduating from the University of California at Los Angeles (UCLA) in 1942, with a major in bacteriology, I began graduate work with Max Delbrück at Vanderbilt University in Nashville, Tennessee (Delbrück was awarded a Nobel Prize in 1969 for his research on bacterial viruses). Because of the increasing intensity of World War II in 1942, however, research in universities was grinding to a halt. One evening I received a telephone call from Dr. Charles D. Coryell, one of my chemistry instructors at UCLA, who invited me to join his research group in a secret project at the University of Chicago, and I decided to accept. Coryell's group was an important unit of the Manhattan Project, and in the late summer of 1943 our group was transferred to the newly constructed Clinton Laboratories, part of the "Clinton Engineer Works," at Oak Ridge, Tennessee. At the time, the Oak Ridge townsite resembled a movie set of a frontier Western town--dirt streets and sidewalks made of wooden slats--but there were no saloons, which delighted the bootleggers who operated illegal stills outside of the barbed wire.

Oak Ridge, 1943-1945

Under tight military security, Clinton Laboratories was one of the major scientific installations within a large army reservation. It was the site of the uranium chain reaction “pile” used for early physics and chemistry research on atomic bombs. Associated with the pile, there was a pilot plant for the production of plutonium. Our responsibilities in the Chemistry Division, under Coryell’s leadership, focused primarily on characterization of more than 250 radioactive isotopes that are created by the fission of uranium and the development of a process for chemical isolation of plutonium. We also investigated chemical processes associated with the spontaneous disintegration of radioactive atoms. After declassification of some of our secret research, I became the co-author of eleven papers on the properties of radioactive isotopes [in the National Nuclear Energy Series, McGraw-Hill, 1951]. One of these papers, of which I was the senior author, dealt with the element Barium.

As a special assignment, our group prepared gigantic quantities of a radioactive isotope of Barium produced in uranium fission, that was needed by Los Alamos physicists for testing atomic bomb detonation characteristics. Preparation of the radioactive Barium (mass 140) required chemical processing by remote control, at a time when there was almost no equipment available for such work. Nevertheless, we managed somehow. Late on the night of September 18, 1944, from a considerable distance away, our group witnessed a dramatic transfer, by crane, of 280 curies of the isotope --a huge, glowing radioactive source--from a thick-walled preparation laboratory to a large lead vault in an unmarked army truck. This truck was part of a convoy that left immediately for Los Alamos. Subsequently, we made shipments of as much as 1000 curies! About ten days after our first shipment, the Germans began destructive attacks on southern England with more than 1500 V-2 rockets.

Many memories of my years in Oak Ridge were evoked in 1989, when I learned that the "classified" Szilard petition, strongly supported by the members of our chemistry research division, was to be displayed at the National Archives in Washington, D.C.

Leo Szilard's petition to the President of the United States

Leo Szilard (1898-1964) once drafted an outline for an autobiography, but it was never written. Fortunately, there are tape-recorded interviews in which he reminisced about his remarkable life [1]. He was born in Hungary, the oldest of three children of a successful Jewish architect-engineer. An early interest in electrical engineering led to graduate study in physics at the University of Berlin, where he received a doctoral degree in 1922. Szilard continued research activities in Berlin, and eventually was a Privatdozent (a lecturer without stipend) at the university. Hitler came into power in January 1933, and Szilard immediately recognized the portent of this development.

A few days after the Reichstag fire (February 27, 1933) Szilard made his way to England and in September 1933 he "read in the newspapers a speech by Lord Rutherford, who was quoted as saying that he who talks about the liberation of atomic energy on an industrial scale is talking moonshine. This set me pondering as I was walking the streets of London, and I remember that I stopped for a red light at the intersection of Southampton Row. As the light changed to green and I crossed the street, it suddenly occurred to me that if we could find an element that is split by neutrons and which would emit *two* neutrons when it absorbed *one* neutron, such an element, if assembled in sufficiently large mass, could sustain a nuclear chain reaction"[1]. Some years later, uranium was discovered to be the kind of element that Szilard had in mind. The basic patent for the nuclear fission reactor was awarded jointly to Szilard and Enrico Fermi in 1945, but Szilard never benefitted from it financially. Incidentally, while still in Germany, he and Albert Einstein patented an electromagnetic pump for liquid refrigerants which later proved to be useful in the operation of nuclear reactors.

Szilard was primarily responsible for initiating the Manhattan Atomic Bomb Project in that he persuaded Einstein to write President Roosevelt in 1939 about the urgency of developing atomic power for domestic and military purposes. This influential letter was in fact drafted by Szilard.

In 1944 or early 1945, scientists at the Clinton Laboratories formed an organization called "The Association of Oak Ridge Scientists at Clinton

Laboratories" for discussion of issues relating to atomic bombs and peaceful uses of atomic energy. When telephone calls from the Chicago site and Oak Ridge to Los Alamos were suddenly prohibited, Szilard realized that the bomb would soon be tested: "I knew by this time that it would not be possible to dissuade the government from using the bomb against the cities of Japan...I thought the time had come for the scientists to go on record against the use of the bomb against the cities of Japan on moral grounds. Therefore I drafted a petition which was circulated in the project" [1].

During the early days of July 1945, Szilard's petition was discussed, and various criticisms led to revised versions. The final text (see end of this article), dated July 17, 1945, stated in part:

"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....

"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."

August 1945

Use of the atomic bombs that destroyed Hiroshima and Nagasaki during the first two weeks of August 1945 was soon followed by the surrender of Japan, and the Atomic Age had begun. Immediately after the bombs were dropped, Szilard felt it was important to "tell people what this was about and what we were facing in this century." The petition had been declared to be a "classified" document, but Szilard notified the responsible officer of the

Manhattan Project that he (Szilard) intended to declassify the petition on his own accord and make the contents public. His attempt did not succeed: "Shortly thereafter I received a call from the Manhattan District, saying that General [Leslie] Groves wanted the petition to be reclassified 'Secret.' I said that I would not do this on the basis of a telephone conversation, but I would want to have a letter explaining for what reason the petition, which contained nothing secret, should be reclassified. Soon after I received a three-page letter, stamped 'Secret,' in which I was advised that while the officer writing the letter could not possibly know what was in General Groves' mind when he asked that the petition be reclassified Secret, he assumed that the reason for this request was that people reading the petition might conclude there must have been some dissension in the project prior to the termination of the war, which might have slowed down the work of the project which was conducted under the Army" [1]. The petition was not declassified until September 1958.

August 9, 1945: Oak Ridge

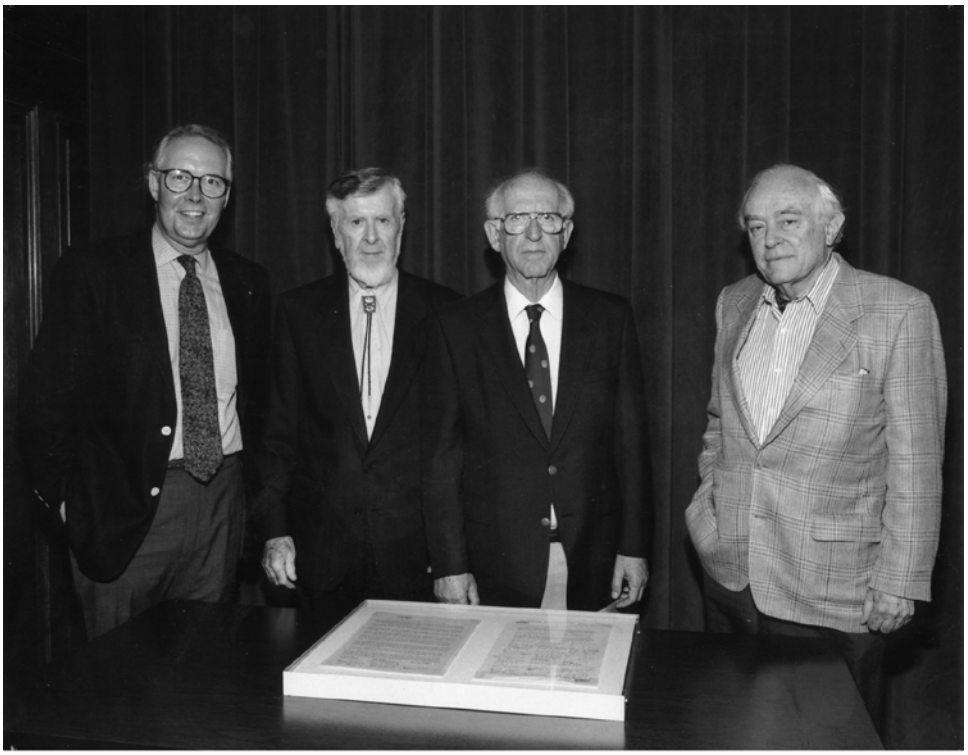
There was a small occasional newspaper published for residents of Oak Ridge called the OAK RIDGE JOURNAL. For security reasons, this was not permitted to be mailed or taken from the area. The day of the Nagasaki bombing (August 9), a special issue appeared with large headlines, describing use of the bombs. The front page had a long message from Colonel Kenneth Nichols, the so-called District Engineer in charge of the town, admonishing all residents of Oak Ridge not to reveal any kind of information. On the other hand, another lead article indicated that, in fact, no one was able to reveal anything of significance, claiming that hardly anyone knew what the Manhattan Project was all about. Supposedly, only a few top-ranking scientists, engineers, and army officers knew what was going on. This ridiculous mythology has persisted to the present day. The Journal article was correct, however, in describing the mystification of ordinary workers who "would see huge quantities of material going into the plants, but nothing coming out. This created an atmosphere of unreality, in which plants operated feverishly day and night to produce nothing that could be seen or touched."

The August 9th message from Colonel Nichols reflected the intent of the military establishment to keep a monopoly on atomic weapons: “This tremendous weapon must be kept our weapon alone, so that the peace of the world can be reestablished and preserved. Do not reveal to anyone information not contained in the official releases.”

Szilard's petition on display

From March 1989 through February 1990, one sheet of the petition was displayed in an exhibition at the National Archives entitled “American Voices; 200 Years of Speaking Out.” The exhibition was described in an article in the March 5, 1989 issue of *The Washington Post* as follows: “The most chilling of the exhibits concern catastrophes that could have been averted, saving untold numbers of lives and changing history, had the president followed the petitions' wise advice. On July 17, 1945, a group of atomic scientists petitioned Harry Truman, asking him not to drop an A-bomb on Japan before that country had been offered peace terms. The document says that ‘the atomic bombs at our disposal represent only the first step...there is almost no limit to the destructive power...opening the door to an era of devastation on an unimaginable scale...’ And it pleads that the United States, by virtue of its lead in atomic power, live up to its 'obligation of restraint.'”

A few days before the exhibit opened to the public I visited the National Archives and obtained a photocopy of the petition page that showed my signature and those of my Oak Ridge colleagues--67 in all (see later). The exhibition checklist noted that exhibit no. 80 is “A Petition to the President of the United States, July 17, 1945. Nine identical sheets, typewritten, signed by 70 scientists. Sheet bearing Leo Szilard's signature exhibited.” No comment was made on the President's response. I began to wonder about the total number of signatures collected at the University of Chicago, Oak Ridge, and Los Alamos. The statement that only 70 had signed seemed to me obviously incorrect. In the published version of Szilard’s reminiscences it is stated that “Szilard now wrote a final draft and circulated it in the Metallurgical Laboratory [the code name for the Chicago installation]. The original copy of this petition (returned to Szilard in 1957) bears 68 signatures” [1]. No comment on supporters of the petition in Oak Ridge! Was Szilard aware of the signatures collected at Oak Ridge and Los Alamos? The vagueness of accounts I had read on the fate of the petition led me to



July 17, 1995; at the National Archives, Washington, D.C. 50th Anniversary of the Szilard Petition. Left to right: William Lanouette, biographer of Szilard ("Genius in the Shadows", 1992) and three signers of the petition: Ralph Lapp, Howard Gest, and John Simpson, Jr. (1916-2000). In the foreground, the petitions with our signatures.

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To the President of the United States:

We, the undersigned scientific personnel of the Clinton Laboratories, believe that the world-wide social and political consequences of the power of the weapon being developed on this Project impose a special moral obligation on the government and people of the United States in introducing the weapon in warfare.

It is further believed that the power of this weapon should be made known by demonstration to the peoples of the world, irrespective of the course of the present conflict, for in this way the body of world opinion may be made the determining factor in the absolute preservation of peace.

Therefore we recommend that before this weapon be used without restriction in the present conflict, its powers should be adequately described and demonstrated, and the Japanese nation should be given the opportunity to consider the consequences of further refusal to surrender. We feel that this course of action will heighten the effectiveness of the weapon in this war and will be of tremendous effect in the prevention of future wars.

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Donald S. Schover | D.E. Koshland Jr. | [illegible]
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R.F. Leininger | Robert B. Scott

try to uncover the facts. I felt that, surely, historians must have explored the matter thoroughly some time ago. But I discovered it was not easy to find an authoritative account of the petition's history.

Richard Rhodes's 886-page book [2] on the making of the atomic bomb does not discuss the Szilard petition in any detail. An Epilogue notes that Szilard was horrified by the bombings of Hiroshima and Nagasaki and that "Upon hearing of the Nagasaki bombing he immediately asked the chaplain of the University of Chicago to include a special prayer for the dead and a collection for the survivors of the two Japanese cities in any service commemorating the end of the war" [2].

The decision to use the atomic bomb, explained by Henry L. Stimson, Secretary of War, 1940-1945

The unprecedented nature of the new weapons gave rise to demands for an explanation of the circumstances of their first use. One apparently "semi-official," and often cited, account was provided by Henry Stimson, who reviewed the background for the decision in an article in Harper's *Magazine* in 1947 [3]. Stimson was chairman of the Interim Committee, which had the following composition: James F. Byrnes (then a private citizen) as personal representative of the President; Ralph A. Bard, Under Secretary of the Navy; William L. Clayton, Assistant Secretary of State; Dr. Vannevar Bush, Director, Office of Scientific Research and Development, and president of the Carnegie Institution of Washington; Dr. Karl T. Compton, Chief of the Office of Field Service in the Office of Scientific Research and Development, and president of the Massachusetts Institute of Technology; Dr. James B. Conant, Chairman of the National Defense Research Committee, and president of Harvard University.

Stimson noted that his assistant, George L. Harrison, acted as chairman when he was absent, and had "the principal labor of guiding its extensive deliberations." The *Harper's* article quoted from a report made by an advisory Scientific Panel (consisting of J.R. Oppenheimer, Enrico Fermi, A.H. Compton, and E.O. Lawrence) to the Interim Committee: "The opinions of our scientific colleagues on the initial use of these weapons are not unanimous: they range from the proposal of a purely technical demonstration to that of the military application best designed to induce surrender. Those who

advocate a purely technical demonstration would wish to outlaw the use of atomic weapons, and have feared that if we use the weapons now our position in future negotiations will be prejudiced. Others emphasize the opportunity of saving American lives by immediate military use, and believe that such use will improve the international prospects, in that they are more concerned with the prevention of war than with the elimination of this special weapon. We find ourselves closer to these latter views; we can propose no technical demonstration likely to bring an end to the war; we see no acceptable alternative to direct military use." Stimson made the final recommendation to President Truman. Thus, he said: "The ultimate responsibility for the recommendation to the President rested upon me, and I have no desire to veil it. The conclusions of the [Interim] committee were similar to my own, although I reached mine independently. I felt that to extract a genuine surrender from the Emperor and his military advisers, they must be administered a tremendous shock which would carry convincing proof of our power to destroy the Empire. Such an effective shock would save many times the number of lives, both American and Japanese, that it would cost" [3].

Stimson never referred to the Szilard petition. He did note that Ralph A. Bard, Undersecretary of the Navy and a member of the Interim Committee, dissented from the committee's recommendation that the bomb "should be used without prior warning." But Stimson did not mention Bard's further actions. The latter are described in an article (see below) by Alice K. Smith: "Mr. Bard resigned from his post as Undersecretary of the Navy on July 1st, by which time plans had been made for dropping an atomic bomb and targets had been discussed. He was anxious to make his disagreement with the Interim Committee Report as emphatic as possible and, at Secretary of the Navy Forrestal's suggestion, he obtained an interview with Truman at the White House at which he urged that because of the bottling up of Japan, already effected by the Navy, an all-out invasion would not be necessary. Mr. Bard shared the feeling, since expressed by other Navy men, that the Army wanted an invasion so that it might share in the final defeat. Truman assured him that he had given this problem of invasion his careful attention."

Stimson's 1947 article in Harper's apparently was the result of pressure from James Conant and President Truman to preempt "second-guessing" on the need for using atomic bombs to end the war with Japan. We now know

that the “Stimson article” was in large measure written by Conant and McGeorge Bundy. According to a biography of Conant [4], Bundy was an “uncredited co-author.” In a review of the biography by Bundy [5], he refers to himself as Stimson’s “assistant and scribe” at the time.

Alice K. Smith's article on the decision

In 1958, the same year that the Szilard petition was declassified, Alice Kimball Smith, Assistant Editor of the Bulletin of the Atomic Scientists in its crucial years, published a lengthy article on the decision to use the bombs [6]. She detailed the activities of the Interim Committee and its Scientific Panel, and discussed various reports and petitions relating to the question at hand. It appears that the July 17 petition was a revision of an earlier draft. Thus, “Dr. Szilard felt strongly that the moral argument, which the framers of the [Franck] Report (*June 11, 1945; written by a panel at the University of Chicago headed by physicist James Franck*) found personally so convincing, should be forcefully stated at the highest level. He therefore drew up a petition addressed to President Truman, stating the case against the military use of the bomb on humanitarian and moral grounds. Objections were raised to the wording of the petition as first circulated, and a second version was drafted. This was forwarded to Washington by Dr. Arthur Compton on July 17, 1945.” Compton is quoted as saying: “As he turned the revised petition over to me for delivery to Washington, Szilard indicated that it was signed by sixty-seven scientists residing in Chicago.” Mrs. Smith obviously was in contact with Szilard in 1958, and it is interesting that later in the article she says “One wonders also about the fate of Dr. Szilard's petition, dispatched to the President on July 17th after Truman and his chief advisers had already assembled at Potsdam.”

The Szilard petition at Oak Ridge and Los Alamos

Eugene Wigner, who signed the petition in Chicago, brought a copy to Oak Ridge for additional signatures. According to Peter Wyden [7]: “It had attracted eighty-eight signatures from physicists and chemists and many more were ready to sign when military authorities stepped in. They prohibited further circulation and a colonel ‘bawled out’ Wigner. The document supposedly violated security by hinting that the bomb was approaching readiness...[In Los Alamos] Oppenheimer ruled that the petition

must not be allowed to circulate." As far as I have been able to determine, Wyden's account is not accurate in two connections. From my studies of the actual petitions in the National Archives, I found 67 signers in Oak Ridge, not 88. Also, in respect to Los Alamos, it appears that Oppenheimer did not "rule" against circulation of the petition. Rather, Oppenheimer dissuaded Edward Teller from circulating it. Teller later stated that he regretted following Oppenheimer's advice, but Martin Sherwin [8] indicates "there is evidence to suggest that Teller's views were never in conflict with Oppenheimer's on this matter."

Transmittal of the Szilard petition

Szilard was pressured by colleagues to transmit the petition sheets to the President through official channels. He reluctantly agreed, and gave them to Compton on July 19 for delivery to Washington. General Groves, however, devised a circuitous route for the package, namely, Compton to Colonel (later General) Nichols, Nichols to Groves, Groves to Stimson. Thus, it arrived in Stimson's office on August 1, while Stimson and Truman were still in Europe. Stimson's assistant, George Harrison, simply put it into the secret file.

The intent of the military to mute the Szilard petition is further documented in the now declassified letter dated 25 July 1945, that Colonel Nichols sent to General Groves along with the Szilard petition. Nichols's letter is available in the National Archives Harrison-Bundy File 76 [9]. It is odd that in 1987 Nichols felt it was appropriate to quote the following section of the letter [my italics] in his book on development of the atomic bomb [10] *"It is recommended that these papers be forwarded to the President of the United States with the proper comments. It is believed that by such action and example it will be more nearly possible to control the individual activities of the various scientists who have ideas regarding the political and social implications concerning use of the weapon and to confine their activities to proper channels where security for the project will not be jeopardized. Contrary to the hopes of Mr. Leo Szilard, who started the original petition, thereby precipitating the other petitions, it is believed that these collective papers generally support the present plans for use of the weapon*." In the remainder of the letter, Nichols attempts to justify the position that "the more informed individuals" did not support Szilard's

petition, with an inaccurate report of the results of a poll of scientists at the University of Chicago site (alluded to in Stimson's 1947 article). Thus, "This [that is, support for "present plans for use of the weapon"] is shown by the fact that some fifteen percent of outstanding scientists polled believe that procedure for use of the weapon should be as follows: 'Use the weapons in the manner that is from the military point of view most effective in bringing about prompt Japanese surrender at minimum human cost to our armed forces.' Forty-six percent believe as follows: 'Give a military demonstration in Japan, to be followed by a renewed opportunity for surrender before full use of the weapons is employed.'" In his book Nichols summarizes the poll as follows: "The bottom line was that 61 percent of the scientists responding to the questions favored using the bomb against Japan in a military setting."

Analysis of the 1945 decision in 1960

In 1960, fifteen years after the attacks on Hiroshima and Nagasaki, *U.S. News and World Report* published an extensive discussion on the decision to use the atomic bombs [11]. Most of the report consisted of detailed interviews with Szilard, Edward Teller, Ralph Bard, Lewis L. Strauss (appointed to the Atomic Energy Commission in 1946), and James F. Byrnes (who became Secretary of State). The Szilard interview is particularly interesting. He said he did not think it likely that his petition would have an effect on the course of events, but that the project scientists who were unhappy about the prospect of sudden use of atomic bombs on populated cities should at least go on record on the issue. In answer to one question he said: "Truman did not understand what was involved [in the decision"]. Szilard presumably meant that Truman really did not understand the revolutionary nature of release of atomic energy and its implications, but It is difficult to evaluate this remark. On the one hand, from Truman's memoirs published in 1955 [12], it seems that he was well aware of the potentially great importance of atomic power for the future. On the other hand, in "Truman Speaks" [13], there is the record of a press conference in which one of the questions was: "How about the decision on dropping the atomic bomb?" Truman's answer was: "That was not any decision that you had to worry about. It was just the same as getting a bigger gun than the other fellow had, to win a war and that's what it was used for. Nothing else but an artillery weapon."

Back to the 1960 U.S. News report: In it, Szilard also noted: “The petition was sent to the President through official channels, and I should not be too surprised if it were discovered one of these days that it hadn't ever reached him.” The report also correctly cites the results of the Chicago poll as showing that 72% of the scientists favored a military demonstration of the bomb in Japan or the U.S., followed by a renewed opportunity for Japan to surrender before combatant use of the new weapon. Moreover, the magazine's report included the text of a memorandum Bard sent to the assistant chairman of the Interim Committee opposing use of the bomb without warning or efforts to secure Japan's surrender by diplomatic means.

The editorial comments, by David Lawrence, in the *U.S. News and World Report* article on the interviews ended with: “Let us acknowledge our mistake. We were not justified by any precedent of international law. The position to which we should have steadfastly adhered was rightly proclaimed by President Franklin D. Roosevelt at the outset of World War II, when he addressed a note to all the belligerents pleading with them not to bomb unfortified cities. At least we should have given public warning and asked that the civilian population be withdrawn from the two Japanese cities. It is not too late to confess our guilt and ask God and all the world to forgive our error.”

Views of historians

A number of historians have reviewed the history of the decision to drop the bombs on Japan. Some have argued that the decision was in large measure guided by considerations of psychological and diplomatic strategy aimed at the Soviet Union [14]. Historian Gar Alperovitz, who has done much research on the question of why the United States used atomic bombs in 1945, also supported the view that the bomb was not used to end the war with Japan, but rather to gain the upper hand for postwar diplomacy with the Soviet Union [15]. According to Alperovitz, the full record of what happened in the summer of 1945 was still not available in 1990, partly because many official documents are still classified and some private journals have not been made public. On the fortieth anniversary of the Hiroshima/Nagasaki bombings, Robert Messer reminded us that “The use of atomic bombs on Japanese cities at the end of World War II is one of the most debated and analyzed events in history” [14]. Keeping the secrecy wraps on the Szilard

petition until 1958 suggests that this was part of a campaign to foster Truman's “orthodox” justification for the destruction of Hiroshima and Nagasaki**.**

In an extensive review essay [16] on Rhodes’s book [2], historian Barton Bernstein discusses many important aspects of the numerous complex arguments on the decision to use atomic bombs on inhabited Japanese cities. He notes that the unsuccessful petition “could not halt the momentum of the Manhattan Project.” I agree with his view that “By 1945, the momentum was too great, the power of assumptions too overwhelming to reverse the course of events.” In retrospect, I never seriously believed that the last-minute petition would be regarded other than as an attempt to influence the choice of targets on moral grounds; that is, hopefully, to prevent their use on inhabited cities. Nevertheless, it is lamentable that the petition was prevented from reaching Truman.

Szilard after 1945

After the end of World War II, Szilard decided to stop further research in physics, and became Professor of Biophysics at the University of Chicago. After a short learning period, he made notable contributions to our knowledge of the dynamics of bacterial growth and mutation rates in populations of bacteria. At the same time, he continued his political activities and was one of the leaders in establishing civilian control over peaceful development of nuclear energy in the United States and international control of nuclear weapons. In 1959, he received the Atoms for Peace Award.

Several years before his death in 1964, Szilard published a remarkable book of imaginative satirical stories, based on misuse of scientific knowledge, entitled *The Voice of the Dolphins* [17]. In one of the stories, “My Trial as a War Criminal”, Russians land an occupation force in New York and Szilard is arrested as a war criminal because of his activities during World War II. One of the charges against him is contributing to the war crime of dropping an atomic bomb on Hiroshima. Szilard attempts to defend himself by citing his early efforts to warn against military use of the bomb. These proved to be without effect...” Under these circumstances I had to fall back for my defense on a petition which I had circulated in the Uranium

Project at the University of Chicago immediately after the testing of the bomb in New Mexico and which asked the President to withhold his approval of a military use of the bomb against the cities of Japan. The prosecutor moved, however, that this document be stricken from the record on the ground that it was not transmitted by me to the President directly, but was, rather, handed by me to the head of the project, who forwarded it through the Manhattan District of the War Department, headed by General Groves. The prosecutor said that I, Szilard, should have known better than to agree to such a method of transmittal."

The Voice of the Dolphins was republished (see ref. 17) with a lengthy introduction by Barton Bernstein that effectively summarizes Szilard's career in physics, his activities on the Manhattan Project, and his later attempts to devise mechanisms for the prevention of nuclear war. Bernstein notes that Szilard was "a dazzling gadfly" who was capable of being "energetically engaged in physics while also delving into political analysis, diagnosing national and international problems, and exhibiting his enthusiasm and ability in anticipating events and predicting history."

In an obituary notice, Eugene Wigner made the following remarks about Szilard: "During a long life among scientists, I have met no one with more imagination and originality, with more independence of thought and opinion, than Leo Szilard. As a scientist, he contributed significantly to statistical mechanics, to nuclear physics, and to biology. As an engineer, he invented a method for pumping liquid metal, had a large share in the establishment of the nuclear chain reaction, and was one of the first to recognize the variety of purposes for which it can be used. As a citizen, he contributed as much as anyone--perhaps more than anyone else--to the undertaking by the United States of a large effort toward the exploitation of the fission process, leading to nuclear weapons. As a citizen, he founded at least two associations to influence the policies of the country which adopted him. He did thereby influence those policies and also the thinking of many of his colleagues" [18].

Summing up

The noted historian Jack Hexter once pointed out (19) that history with a "capital H" deals with major trends, large movements, deep running

tides etc. But, he said, the actual records of the past are “a lot of bits and pieces. When a ‘small H’ historian fixes his attention on a fragment of the past washed up on the littered beach of the present, he is likely to ask simple questions about it such as: how did it get there? What happened to it?” Eventually, I (*H. Gest*) realized that I had become a “small h historian” in connection with the question of how many scientists actually signed the Szilard petition. From File 76 at the National Archives, it is clear that about 150 signed the various versions of the petition, all of which conveyed essentailly the same message.

It is clear that no attempt was made to communicate the essence of the Szilard petition to President Truman during or after the Potsdam conference. Rather, he was effectively shielded from the petition. In personal memoirs published in 1991, Clark Clifford raises the question: “Why did the President not order a demonstration bomb dropped on an unpopulated area before using one on a populated area?” [20]. He goes on to repeat the familiar Stimson account of the decision to drop the bombs on Japanese cities and says in further explanation: “The fact that the President was at Potsdam or on the cruiser during the most critical period--between the flash in the New Mexico sky on July 16th and the flight of the Enola Gray on August 6th--meant that he was never presented with a full-scale argument for a demonstration bomb. He told me later, however, that he had considered it, and come to the conclusion that a demonstration would not suffice after a war of such terrible carnage--that Japanese lives would have to be sacrificed to save many more lives, both American and Japanese.” No mention of the Szilard petition!

There is little doubt that the comments of Colonel Nichols in the cover letter sent with the petition to General Groves simply reflected Groves' views, and that Groves was not taking any chances--however remote--that “meddling scientists” might influence the President's decision on use of the bomb. It has apparently never been officially acknowledged that the petition displayed at the National Archives was *not* seen or considered by government officials at the highest levels. There appears to be no record of later comment on the petition by Stimson or Truman. Groves’ book on the

Manhattan Project, does not mention the Szilard petition at all, and gives the impression that a decision on use the bomb was never an issue [21]. I have not been able to find evidence that Szilard ever knew that many of the Oak Ridge scientists went on record in support of his petition.

When I requested the page of the Szilard petition showing my signature from the National Archives, I was provided with a copy of the declassified document (see earlier). Above our signatures was a statement raising the moral issue of introducing the use of nuclear weapons, and recommending a course of action that might have led to a Japanese surrender without the use of atomic bombs:

"We, the undersigned scientific personnel of the Clinton Laboratories, believe that the world-wide social and political consequences of the power of the weapon being developed on this Project impose a special moral obligation on the government and people of the United States in introducing the weapon in warfare.

"It is further believed that the power of this weapon should be made known by demonstration to the peoples of the world, irrespective of the course of the present conflict, for in this way the body of world opinion may be made the determining factor in the absolute preservation of peace.

"Therefore we recommend that before this weapon be used without restriction in the present conflict, its powers should be adequately described and demonstrated, and the Japanese nation should be given the opportunity to consider the consequences of further refusal to surrender. We feel that this course of action will heighten the effectiveness of the weapon in this war and will be of tremendous effect in the prevention of future wars."

Secret File 76

File 76 of the Harrison-Bundy files at the National Archives contains the original documents relating to the July 17 Szilard petition and other petitions, as well as a miscellany of other now declassified letters, memoranda, etc. Included are summaries of Interim Committee meetings, letters to Szilard from intelligence officers, a significant memorandum prepared by Capt. G. Gordon Arneson (see later), and many other important

documents. Of special interest to me was item 9 indicated in Nichols' letter of transmittal of the petitions to General Groves, namely, "Sealed envelope supposedly containing Mr. Szilard's petition to the President of the United States, signed by unknown number of persons. (Mr. Szilard has requested that this petition be opened only by the person authorized to open the President's mail)." This brown 9 X 12 inch envelope, addressed by hand to the President, was torn open roughly and has no official receipt markings on it. Inside, in a celluloid folder, is the one page Szilard July 17 petition, signed by 12 individuals, including Szilard, Wigner, and R .E. Lapp.

The various Szilard petitions are all typewritten "originals", some not signed at the bottom, some with 2 to 14 or more signatures at the bottom or on separate pages. This contributes to the difficulty of determining exactly how many scientists went on record in support of Szilard's attempt to prevent surprise use of the bomb without considering alternatives. In any event, there are approximately 152 signers of three petitions in File 76: 18 signed the July 13, 1945 petition; 67 signed the July 17 petition circulated at the Chicago site, and at least 67 signed the Clinton Laboratories (Oak Ridge) version (it is not known whether or not the Oak Ridge signature pages were attached to the original Szilard petition).

Captain Arneson prepared a "Memorandum for the files" of the War Department, dated 24 May 1946, summarizing his records of meetings of the Interim Committee and the auxiliary Scientific Panel, and other details relevant to the decision on use of the bomb [22]. The memorandum details 11 items; numbers 10 and 11 are reproduced below. Note that item 10 includes a blatant distortion of the major recommendation of the July 17 and related petitions. Note also that Stimson returned from Potsdam on July 30.

"10. The attached series of documents, including a petition to the President urging that the bomb not be used in the present war, dated July 17, 1945, was delivered by General Groves' office to the Secretary of War on August 1, 1945. In considering what disposition should be made of these documents the following facts were clear:

a. The question of the use of the bomb had already been fully considered and settled by the proper authorities.

b. As far as the scientists employed on the project were concerned, they had been given adequate opportunity to express their views on this or any other question relating to the project to the Interim Committee through the Scientific Panel.

11. In view of the foregoing, it was decided that no useful purpose would be served by transmitting either the petition or any of the other attached documents to the White House, particularly since the President was not then in the country.

R. Gordon Arneson
Capt. AUS"

Coda

Before resuming graduate study in microbiology at Washington University after the war ended, I received a certificate signed by Henry L. Stimson, dated August 6, 1945....the day the bomb was dropped on Hiroshima. It states that "Howard Gest has participated in work essential to the production of the Atomic Bomb, thereby contributing to the successful conclusion of World War II. This certificate is awarded in appreciation of effective service." In 1970, I visited the Peace Museum in Hiroshima, and was stunned by huge photographs documenting the destruction of Hiroshima and its citizens.

Text of the full Szilard petition; 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.

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