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Visualizing Nuclear Power in Japan

A Trip to the Reactor

Morris Low

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To my mother, Eileen Low (1932–2019)

PREFACE

This book explains why the Japanese people embraced nuclear power despite having witnessed its destructive force in Hiroshima and Nagasaki. It highlights the importance of the media, exhibitions, films and tours in helping to achieve a relative consensus regarding the need for the development of nuclear power that ultimately facilitated the transfer of American nuclear technology. The idea of atoms for peace served to separate the good atom from the bad.

The book reflects my longstanding interests in the history of Japanese science and technology, visual culture and issues relating to identity. They are intertwined and it is only by unravelling them that we can truly come to understand Japan's post-war trajectory. Through various projects, I have explored how Japanese identity was increasingly tied to the promotion of science, technology and economic growth. This book complements that work.

Without access to libraries and archives, the book could not have been written. I particularly wish to thank the University of Queensland Library, the National Library of Australia, the National Diet Library, Tokyo, and the US National Archives and Records Administration, College Park, Maryland, USA.

Most of the book was written in my office in the School of Historical and Philosophical Inquiry, University of Queensland. The school has provided me with a congenial working environment. I began research during my sabbatical in 2013. In 2015, I received a Queensland Program for Japanese Education travel grant which enabled me to gather source

material in Japan. In 2016, I was awarded an Institute for Advanced Studies in the Humanities (IASH) Teaching Relief Fellowship for Senior Scholars which provided me with time to write up my research. Another period of sabbatical in the second half of 2017 allowed me to make further progress on the manuscript.

I wish to acknowledge my mentors, colleagues, friends and family who have made it possible for me to see this book through to completion. They include Professors Roy MacLeod, Tessa Morris-Suzuki, Robert Kargon, Yoshimi Shunya and the late Professors Nakayama Shigeru and Yoshioka Hitoshi. Professor Peter Harrison, Director, IASH, has been important in promoting the history of science at the University of Queensland through seminars and conferences. I have also benefited from attending seminars on visual politics organized by Professor Roland Bleiker, School of Political Science and International Studies.

As readers will discover, I have learnt much from the work of many scholars who are cited in the pages that follow. I would particularly like to thank an anonymous reader who provided constructive comments that enabled me to produce a more balanced account of visual representations of nuclear power.

I must thank Emily Russell, Publisher, History, at Palgrave Macmillan in London for seeking me out and meeting with me in Brisbane. Thanks also to Megan Laddusaw, Editor, History, at Palgrave Macmillan in New York for taking this project on. I would like to express my gratitude to the editors of the Palgrave Studies in the History of Science and Technology for including this book in their fine series and to Vinoth Kuppan and M. Vipinkumar for putting this book into production.

Brisbane, QLD, Australia
February 2020

Morris Low

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CHAPTER 1

Introduction: Visualizing Nuclear Power in Japan

BACKGROUND

The Fukushima nuclear disaster that began on 11 March 2011 was a critical moment in Japanese history. It prompted many people throughout the world to ask why the Japanese people had embraced nuclear power and maintained faith in the energy source, despite having experienced its destructive force in Hiroshima and Nagasaki. This book seeks to answer that question by examining how the Japanese people have seen nuclear power. Atomic energy is not easily visible to the eye unless it is used in some way. We can certainly see its destructive force in the form of a mushroom cloud. It can also be seen in the emblem of the International Atomic Energy Agency (IAEA) which was established in 1957 to promote “atoms for peace”: an atom encircled by laurels. The IAEA symbol tends to underplay the death and destruction associated with the bomb, portraying the uses of atomic energy in terms of a simplistic binary opposition.

In the wake of the Fukushima nuclear disaster and amid revelations that components of nuclear weapons have secretly been stored at American bases in Japan in the past, we have come to appreciate how the Japanese people have been encouraged to see nuclear power in a positive light to facilitate the introduction of civilian nuclear power in Japan and at the same time to ensure that Japan has some technical know-how should it ever seek to arm itself with nuclear weapons. This book is about that

journey which culminated in the introduction of British and American nuclear reactor technology and Japanese efforts to make nuclear power its own.

This book seeks to make a contribution to the history of science and the emerging fields of sensory history¹ and visual politics.² The story of Plato's cave reminds us how contingent our perceptions can be and the danger of equating what we see with reality. It is this illusion of authenticity that makes the visual so powerful and lends itself to appropriation by government discourses that purport to make knowledge claims. This book highlights the active role of the visual in understanding post-war Japanese history. It was not only through hard work and effort that Japan was rebuilt but also through the senses that the Japanese people grappled with the new post-war world. Any study of visibility must pay heed to not only what was seen but also what was hidden.

OUTLINE OF CHAPTERS

Chapter 2 examines how visibility was a consideration in the use of the atomic bomb on Japan. The US government helped shape public perceptions of who in Japan was to blame for the war and the use of the atomic bomb on Hiroshima and Nagasaki was meant to send a strong visual message to Japan, providing the emperor and wartime leaders with a moral justification for surrender. A narrative quickly took hold among the Japanese people that linked deficiencies in science and technology to Japan's defeat in 1945. During the US-led Allied Occupation of Japan (1945–1952), critique of the use of the atomic bomb was discouraged. Physicists such as Yukawa Hideki³ possessed the specialist knowledge that could make the workings of the atom visible but they were the exception. Anyone who has seen photographs of the effects of the atomic bomb in Hiroshima and Nagasaki would be aware of their affective power. The disfigured and dead bodies of the victims are difficult to view without a sense of horror and revulsion. But the ordinary Japanese person would not see such images of human suffering until the Occupation was well and truly over. Not long after the bombs were dropped, how the Japanese saw the atom was heavily controlled. The suppression of photographs and film footage of the human toll at Hiroshima and Nagasaki shows how politically sensitive representations of nuclear power could be. Censorship of public discussion in the mass media⁴ occurred alongside Occupation attempts to re-educate the Japanese in a highly visual manner using

exhibits to promote various narratives of how the Japanese would live in a new, more democratic and scientific Japan. Despite censorship, the Occupation was marked by a boom in the publication of popular science magazines.⁵ As a result, the atomic bomb was seen more abstractly and more in terms of the power of the atom and how it might be harnessed. Occupation efforts and post-war campaigns to promote US-Japan relations and atoms for peace were effective, given the relative absence of images that reminded the public of the cost to human life.

This book differs from previous accounts of the history of nuclear power in Japan in terms of the attention given to exhibitions, events and representations. While some readers may be familiar with aspects of that story, this book introduces readers to two hitherto neglected figures who throw light on the role of the USA. The first is Frances Baker who worked in the Exhibits Branch, Information Division, Civil Information and Education Section, General Headquarters (GHQ), Supreme Commander of the Allied Powers (SCAP). After the Occupation, Baker worked from the US Embassy in Tokyo for the US Information Agency (USIA) or US Information Service (USIS) as it was known in Japan. In 1954, she married and became known as Frances Blakemore. Her activities provide a window to how the mass media, exhibitions, films and major events helped shape public attitudes towards US-Japan relations, “atoms for peace” and more broadly towards the role of science and technology in Japan’s future. The second little-known figure is Clark D. Goodman, an American physicist who went to Japan initially on a Fulbright Fellowship, 1954–1955 and then visited again in 1956 and 1957. Goodman’s reports provide a valuable window to the development of nuclear power in the 1950s.

The Japanese were actively encouraged after the war to see civilian nuclear power in a positive light and to dismiss concerns about its safety in an earthquake-prone nation. This book reveals how Japanese attitudes were actively shaped by the Japanese, the USA and British governments, as well as by scientists, media, business figures and industry to view the peaceful atom as inextricably linked to Japan’s future. All these players gave the peaceful atom meaning. Although official discourses were contested by concerned citizens, artists and scholars, it is nevertheless striking how the Japanese people have, when surveyed in the past, distinguished between civilian and military nuclear power as if the two were unconnected. By examining forms of visual display which were used to construct knowledge about the atom and how reactors worked, we will come to understand how the Japanese public were actively manipulated. There is a

direct relationship between what people know and what they are shown. This book has the simple premise that what people were permitted to see after World War II shaped public attitudes towards the use of civilian nuclear power.

This book argues that public attitudes to nuclear power were shaped by strong interactions between representations and discourses. Despite continuing anxieties about nuclear weapons, a narrative formed that Japan would turn its back on nuclear weapons (the bad atom) and embrace civilian nuclear power. The scientific nature of the discourse around nuclear power created an illusion that it was objective and that nuclear power was safe. It was also part of an American-inspired dream where science could lead Japan. One prime example of how exhibitions promoted US-Japan relations was the 1950 America Fair which Baker helped plan. It is discussed in Chap. 2. The America Fair reflects how after the war, the USA strived to help Japan rebuild its economy and to ensure that its future was aligned with theirs.

The fair which was held in Nishinomiya city, near Kobe and Osaka, permitted Japanese to gain a taste of what it would be like to descend from a Pan Am plane in New York City and see the Statue of Liberty, albeit in scaled-down form. The fair was a milestone in the post-war Americanization of Japan, presenting the Japanese with reproductions and imitations of well-known monuments, historic sites and scenes. Those who visited the imitation White House at the Fair and saw a replica of Mount Rushmore knew what they saw was not the real thing but they were willing to momentarily suspend disbelief and entertain the idea that they could enjoy and live the American dream in Japan. It is the contention of this book that how nuclear power was made visible to the Japanese people also involved a suspension of disbelief which shaped how they saw themselves, their future and the atom.

Exhibitions helped project images of the new Japan. The Japan Trade and Industry Fair known as the Kobe Fair was also held in 1950. It highlighted how Japan had made progress in foreign trade and industry. In the Culture Hall, visitors would learn about the Atomic Age and the contributions made by Japan's first Nobel laureate in physics, Yukawa Hideki. And in the following year, Frances Baker was involved in the "Democratization of Japan" exhibition held in San Francisco in September 1951 on the occasion of the signing of the peace treaty.

At the same time as Frances Baker was producing wartime propaganda in Hawaii and then overseeing American-sponsored exhibitions in Japan,

we see in Chap. 3, how the Japanese artist Akamatsu Toshiko illustrated patriotic children's books in Japan and then started painting the famous Hiroshima panels with her husband Maruki Iri from the late 1940s. The mural-sized painting decried war and the use of nuclear weapons at Hiroshima and Nagasaki. They toured the nation and would also be exhibited throughout the world.

Chapter 4 explains how as early as 1950, some American politicians sought to link the development of atomic energy and economic aid. In both Japan and the USA, there were calls for helping Japan to exploit atomic energy given what the Japanese had experienced at Hiroshima and Nagasaki. US President Dwight D. Eisenhower's "Atoms for Peace" speech at the UN in December 1953 flagged a new policy for the promotion of peaceful applications of nuclear technology which the Japanese government was eager to take advantage of. "Atoms for Peace" was not just a construct but a reflection of how many Americans, including politicians and physicists, saw atomic energy as an "agent of redemption"⁶ that could enable the atomic bomb to become a source of energy and prosperity for the peoples of the world.

In Chap. 5, we examine how a sense of victimhood was exacerbated in the aftermath of the Lucky Dragon Incident in March 1954 when crew members on a tuna fishing boat were exposed to radioactive fallout. The ensuing controversy and panic about contaminated tuna incited nationwide concern about the dangers of radiation and nuclear weapons. It was a turning point, heralding more discussion of the dangers of the bomb. At the same time, though, focus on the Lucky Dragon served to hide the fate of other fishermen on other vessels that had also been affected. In the aftermath of the incident, we can point to strong efforts to promote US-Japan relations and "atoms for peace" through films, trade fairs and exhibitions which served to influence public attitudes by structuring and organizing how the Japanese people saw nuclear power. The *Family of Man* exhibition that toured Japan in 1956 emphasized the universality of humanity and sought to downplay what had occurred at Hiroshima and Nagasaki.

The Japanese public avidly consumed the spectacle of atomic energy at the *Atoms for Peace* exhibits that toured Japan in 1955 and 1956. The exhibitions used models, artefacts, films and information panels to provide immersive settings in which people could learn about nuclear power. Combined with extensive press coverage, there was an air of excitement created about what the peaceful atom could offer Japan. In this way, the

Japanese and US governments, media outlets and business men delineated what the Japanese people saw and didn't see. In the background, though, was knowledge of what occurred at Hiroshima and Nagasaki. The removal of photographs depicting the atomic bombing of Hiroshima and Nagasaki in *The Family of Man* exhibition in 1956 shows how even after the Occupation, images of the effects of the atomic bomb would continue to be controversial. Newly married Frances Blakemore would also be involved in this exhibition but to what extent she was involved in the removal of what was a photo mural is not clear. Initially hidden from the gaze of the Emperor, the eventual removal was prompted not only out of concern from the Emperor's person but also out of fear that it might stir up political issues relating to the Emperor's wartime responsibility and ultimately adversely affect the US-Japan relationship. The exhibition is thus significant in terms of both what was included and excluded. The selection of photographs reflected not only aesthetic choices but political considerations as well.

A close-up photograph by Yamahata Yōsuke of a young boy taken at Nagasaki in 1945 that remained in the exhibition shows how some images are more powerful than others. It was the sole image left to represent what had taken place at Hiroshima and Nagasaki. The boy's blank, emotionless face powerfully conveyed a sense of shock that the removed photographs also sought to communicate. This is testimony to the emotional impact of visual media but also to their political dimensions. The image elicits the sympathy of viewers more so than a more distant photograph of the same child taken by the photographer.

Chapter 6 discusses six nuclear films including Joseph Krumboltz's 1954–1955 documentary *Yukawa Story* which describes how the Nobel Prize-winning Japanese theoretical physicist Yukawa Hideki took up the position of visiting professor at Columbia University after the war, after having visited the Institute for Advanced Study at Princeton. It shows how he and his family served to act as a bridge between the USA and Japan and tradition and modernity. There is only tangential reference to the atomic bomb in the film when a gong bowl is struck. In contrast, the original *Gojira* (*Godzilla*) film which was also released in 1954 sought to convey a more explicit message about the dangers of science. It can be argued that rather than the mushroom cloud which reflects the vantage point of the Americans, it is the mutant monster Godzilla who represents the Japanese view of the destructive force of the bomb in more palatable form. The Japanese projected their fears of the nuclear on to Godzilla who from time

to time would rear his head in the original film and in many sequels. In Kurosawa Akira's 1955 film *Ikimono no kiroku* (*I Live in Fear: Record of a Living Being*), there is no monster but only the destructive, psychological effects of fear of nuclear weapons that cripples the main character, Nakajima Kiichi, and prompts him to seek to migrate to Brazil.

Chapter 7 examines the dreams regarding atoms for peace expressed in the media and how 1956 was a key year in terms of the establishment of nuclear infrastructure. The USIS-sponsored *Atoms for Peace* exhibition continued to tour major cities, including Hiroshima and smaller exhibits were shown in regional locations. It was in March–April that Clark Goodman visited Japan at the request of the US State Department. Shortly after, Sir Christopher Hinton visited Japan where he promoted the Calder Hall reactor that he had helped construct and which would be completed later that year. We ultimately see tensions between Americans and the British regarding the merits of their respective nuclear technologies, and there would also be US-Soviet rivalry that could be seen at the 1958 Japan International Trade Fair held in Osaka, as well as in Brussels at Expo '58 which was dubbed the world's first Atomic Fair. By that time, polls in Japan would show increasing public support for the peaceful uses of atomic energy.

Thanks to the many exhibitions, more and more Japanese were able to see what a nuclear reactor looked like and what a nuclear-powered future might hold for them. Chapter 8 focuses on the increasing media coverage of the experimental nuclear reactor facilities at Tōkai-mura and visits by tour groups and individuals. These facilities represented a type of industrial sublime—a combination of both fear of the tamed atom and a sense of wonder at what Japan was able to achieve. In the 1960s, school trips to Tōkai-mura enabled young Japanese to have more of a corporeal experience of where Japan was heading. Prior to viewing nuclear facilities, students would often enter visitor centres and the like where they would add context to what they would encounter. This more embodied experience, albeit in a directed way, made for a heightened experience of what nuclear power had to offer.

Science films provided a visual record of progress made on Japan's first Japanese nuclear power plant. The British Calder Hall type reactor was the centrepiece of the power station at Tōkai-mura and reached criticality on 4 May 1965. Images of construction were woven into wider narratives about Japanese collective identity and how Japan's future would be led by advances in science and technology. Tour groups flocked to Tōkai-mura to

partake of this dream. The media was active in presenting images and stories of how science, technology and everyday life would be interwoven—films provided moving images and exhibitions presented the future in three-dimensional form. Site visits by school groups to Tōkai-mura helped promote a myth of safety.

The introduction of a British Calder Hall reactor helps us understand how civilian and military use could be conflated. Despite the “atoms for peace” narrative and the adoption of an anti-nuclear weapons stance, Cold War fears meant that Japan secretly acquiesced to US nuclear weapons being installed at Okinawa before its return to Japan in 1972. Politicians also turned a blind eye to the storage of components on US bases in Japan.⁷ Conservative politicians sought to ensure that Japan should possess the technical capability to build nuclear weapons and the necessary plutonium should it wish to go down that path in the future.

Chapter 9 provides details of how the 1964 Tokyo Olympics and 1970 Osaka Expo provided opportunities to promote the narrative that Japan, a nation that had been the first to experience the devastating use of nuclear weapons in wartime, had been rebuilt. The message was that it had turned its back on its wartime past and re-joined the world community. This narrative was literally played out and performed at these events. At the Olympics, Sakai Yoshinori was the final torch bearer at the opening ceremony and he lit the cauldron. The choice of Sakai to do this was carefully thought through. He had been born not far from Hiroshima on the fateful day of 6 August 1945. Similarly, as if to signal that the atom was now put to peaceful use and a central element of Japan’s future, the 1970 Osaka Expo was powered by newly opened American-designed nuclear reactors.

Things went awry in 2011 when the Fukushima nuclear disaster put paid to the myth of safety. A tsunami hit the Fukushima Daiichi Nuclear Power Plant as a result of the Tohoku earthquake on 11 March of that year. The whole discourse about nuclear power in Japan was disrupted and the nation is still grappling with the dilemma of whether to restart reactors or somehow replace nuclear power with alternative energy sources. To provide a window to this debate, this chapter also examines representations of nuclear power since Fukushima. The film *Shin Godzilla*, also known as *Godzilla Resurgence* (2016), shows how the Japanese now see nuclear power in a different light. The imagined future powered by the mighty atom that now lies in tatters.

Today, it is possible to see the sights of the Fukushima Daiichi nuclear plant via a computer or a smart phone. Actual presence is not necessary to experience what occurs when nuclear power goes wrong. Increasingly what we see is mediated by technologies. The ubiquitous nature of media in the twenty-first century means that at any one time we now have access to a variety of competing discourses and viewpoints. The way in which nuclear power was made visible and knowable in the past is less tenable and open to contestation.

Where does this leave Japanese national identity in the twenty-first century? There had been hopes after World War II that a new Japan could be constructed, building on the nation's prowess in science and technology. This more future-oriented Japan would not dwell on its wartime past. Reconstruction of the economy took priority and by the 1964 Olympics, Japan was well on its way to becoming a major economic power. A national imaginary emerged that showcased its achievements in science and technology. This nexus between science and national identity can be seen in the history of the introduction of nuclear power and the rise of popular culture icons such as Astro Boy and Godzilla which would provide the affective bond between the Japanese state and government efforts to promote Atoms for Peace. These and other representations of nuclear power discussed in this book served to mediate the relationship between the Japanese and US governments, and the Japanese people. Fukushima disrupted narratives about national identity. The nation once again turns to major events such as the Olympic Games and a World Expo to rally the population and show the world that it has reconstructed, recovered and keen to face the future. Science and technology will once again be deployed but arguably more attentive to the needs of the Japanese people. In Chap. 10, we reflect on what is covered in the book and how visual culture offers ways in which to bring about change.

NOTES

1. Mark M. Smith, *Sensory History* (Oxford: Berg, 2007); Kerim Yasar, *Electrified Voices: How the Telephone, Phonograph, and Radio Shaped Modern Japan, 1868–1945* (New York: Columbia University Press, 2018).
2. Roland Bleiker, ed., *Visual Global Politics* (Abingdon, Oxon: Routledge, 2018).
3. Japanese names in this book are given in the Japanese order of family name followed by given name. In the case of names of Japanese authors whose

texts have been published in English, they are cited in endnotes according to the order given in the publication.

4. Monica Braw, *The Atomic Bomb Suppressed: American Censorship in Occupied Japan* (Armonk, N.Y.: M.E. Sharpe, 1991).
5. Yukio Wakamatsu, “The Mushrooming of Popular Science Magazines,” in *A Social History of Science and Technology in Contemporary Japan*, Vol. 1, The Occupation Period: 1945–1952, eds. Shigeru Nakayama, Kunio Gotō and Hitoshi Yoshioka (Melbourne: Trans Pacific Press, 2001), 516–532.
6. Susan M. Lindee, *Suffering Made Real: American Science and Survivors at Hiroshima* (Chicago: University of Chicago Press, 1994), 15.
7. William Burr, Barbara Elias and Robert Wampler, eds., *Nuclear Weapons on Okinawa Declassified December 2015, Photos Available Since 1990*, Briefing Book No. 541 (Washington, D.C.: National Security Archive, George Washington University, 2016), <https://nsarchive.gwu.edu/briefing-book/japan-nuclear-vault/2016-02-19/nuclear-weapons-okinawa-declassified-december-2015-photos-available-1990>

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CHAPTER 2

Before and After Hiroshima

BEFORE HIROSHIMA

During World War II, many people throughout the world associated Japan's war effort and atrocities with its emperor. *Fortune* magazine, however, saw things differently and sought to convince the public in a special issue on Japan that was published in April 1944 that combined text with effective images. The article "Who Runs the Emperor?" argued that it was the militarists running Japan who were responsible and that the emperor was merely a symbol. To visually reinforce this argument and sway public opinion, a strip of photographs ran along the bottom of the first page of the article with the heading "Militarists like These Rule Japan." The mugshot like photographs showed the heads of Prime Minister Tōjō Hideki, Field Marshal Terauchi Hisaichi, Commander-in-Chief of the Combined Fleet Koga Mineichi and the Navy Minister Shimada Shigetarō. The caption explained that

The Son of Heaven is a little man weighed down by the trappings of empire. His personal power: none.... His function: to be used by power groups headed by men like the four hard-faced militarists below.¹

It ran alongside a full-page photo showing the small figure of the emperor in all his finery, sitting in a fancy carriage which took up more than half of the page. The article argued that "His value to Japan is his value as a myth,

and the myth has been artfully assembled and cleverly merchandised.”² The layout was repeated in the following two pages, only this time the headings of the four photographs running along the bottom were “Civilians Still Have Influence” and “Horn-Rimmed Empire Builders,” respectively. The caption of the latter somehow associated wearing spectacles with having “spurred Japanese expansion,” reinforcing the negative stereotype of Japanese as bespectacled, bucktoothed Asians.³

Another article pondered “What to do with Japan?”⁴ It was followed by a full-page advertisement for the new low-pressure reinforced plastic products made of Valinite which was being promoted by the furniture manufacturing company Virginia-Lincoln Corp. in Marion, Virginia. The ad appropriated Lewis Carroll’s character of Alice from *Alice’s Adventures in Wonderland* (1865) and showed her peering “through the looking glass” at Valinite products into the future. It exclaimed:

Alice, your wonderland has grown up! On V-Day, war proven Valinite will return from the battle fronts to serve America in the building of a better tomorrow.... Our Postwar Planning Bureau will be glad to help you with your problems.⁵

By appropriating the story of *Alice in Wonderland* which was particularly popular with children, the advertisement effectively used children’s culture for propaganda purposes. It explained how Valinite was being used for the war effort. It showed how plastics were patriotic and would help make people’s lives better after the war. *Fortune* and indeed American private enterprise already seemed to be preparing for the years that were to follow. Satisfying consumer desires for products that were inexpensive, lightweight and disposable⁶ would drive economic growth in peacetime both in the USA and in Japan. And the *Alice in Wonderland* narrative would later be used to sell other things such as nuclear power.

The editors of the special issue of *Fortune* acknowledged “the many private individuals and official agencies” who made the special issue possible including “several sources who may not be named.” The US State Department is likely to have been among them.⁷ There is strong correlation between the advice given by the historian Hugh Borton who was working for the State Department and advising on post-surrender policy including the future role of the emperor. In October 1943, the State Department established the Interdivisional Area Committee on the Far East which oversaw approval of policy documents for endorsement as

State Department policy. Borton and his colleagues helped prepare documents on Japan for their consideration and these were ultimately made available to the Postwar Programs Committee which was established in January 1944 as the highest policymaking body within the department.⁸ Borton and his colleagues also provided advice to the War Department. He had long argued that after the war, the Japanese people would blame their military leaders and not the emperor for their defeat. What's more, he foresaw that they would continue to see him as a symbol of the nation and that after surrender they would follow whatever instructions he gave them.⁹

Meanwhile, the challenge remained to induce Japanese military forces and Japanese people to surrender. A US Office of Strategic Services memo dated 8 July 1944 referred to a joint Anglo-American plan for psychological warfare against Japan that had just become official policy in May.¹⁰ The plan would capitalize on the perception of the superiority of British and American weapons and United Nations manpower. This, combined with the lack of supplies and low morale among Japanese soldiers, was seen as likely to increase their sense of inferiority. Carefully timed propaganda could have the desired effect of encouraging them to surrender.¹¹ Among the American propagandists tasked with producing leaflets was Frances Baker (later to be known as Frances Blakemore). Baker was chief illustrator in the art department at the Office of War Information, Central Pacific Operations, Honolulu. Although born and raised in eastern Washington, she went to Japan in 1935, staying there for five years. She escaped to Honolulu just prior to the outbreak of the Pacific War. Among the many leaflets that she produced, there was one on how the Japanese military had underhandedly seized control of the government and were to blame for the war. In this way, the narrative was reinforced to the Japanese people with some 400,000 copies of this one leaflet alone dropped on Japanese cities.¹²

On 31 May 1945, Secretary of War, Henry L. Stimson, chaired a meeting of an eight-member Interim Committee which met with the approval of President Harry S. Truman to provide advice on a range of matters including wartime controls, post-war policy and nuclear weapons. Members included the engineer Vannevar Bush who headed the Office of Scientific Research and Development (OSRD). Bush had been instrumental in persuading the US government on embarking on a program to build an atomic bomb known as the Manhattan Project. He was joined by his OSRD colleague, the physicist and President of MIT, Karl T. Compton, as

well as the chemist and President of Harvard University James B. Conant. Four distinguished physicists who had contributed to the Manhattan Project were specially invited to attend the meeting as a scientific advisory panel: J. Robert Oppenheimer, the so-called father of the atomic bomb who headed the Los Alamos Laboratory where the weapon was developed; Enrico Fermi who is credited with building the world's first nuclear reactor and considered as one of the architects of the bomb; Arthur H. Compton (Karl's brother) who headed the Metallurgical Laboratory that produced nuclear reactors that converted uranium into plutonium for use in nuclear weapons; and Ernest O. Lawrence who invented the cyclotron and worked on uranium isotope separation. Four other people attended, including Major General Leslie R. Groves who was director of the Manhattan Project.

Oppenheimer suggested that

it might be wise for the United States to offer to the world free interchange of information with particular emphasis on the development of peace-time uses. The basic goal of all endeavors in the field should be the enlargement of human welfare. If we were to offer to exchange information before the bomb was actually used, our moral position would be greatly strengthened.¹³

Bush acknowledged that "our tremendous advantage stemmed in large measure from our system of team work and free interchange of information,"¹⁴ but he was concerned about whether the USA could remain permanently ahead if it made research results freely available to the Russians and received nothing in return. In Karl Compton's opinion, "secrets of this nature could not be successfully kept for any period of time and that we could safely share our knowledge and still remain ahead."¹⁵ There was thus recognition even before the bomb was used that the secret of the atomic bomb would become known to others, that the benefits of atomic energy should be made known to others and that the USA would probably stay ahead.

The meeting went on to discuss the effect of the dropping of the atomic bomb on Japan and the will of the Japanese to continue fighting. Although the effect of the dropping of a bomb on an arsenal would not be so different from that which could be achieved by an Air Corps strike using more conventional weapons, Oppenheimer stated that "the visual effect of an atomic bombing would be tremendous. It would be accompanied by a brilliant luminescence which could rise to a height of 10,000 to 20,000