

ART & ACTIVISM IN THE NUCLEAR AGE



EXHIBITION HELD AT
TIN SHEDS GALLERY
148 CITY ROAD,
DARLINGTON NSW 2008
UNIVERSITY OF SYDNEY

7 APRIL - 14 MAY 2022

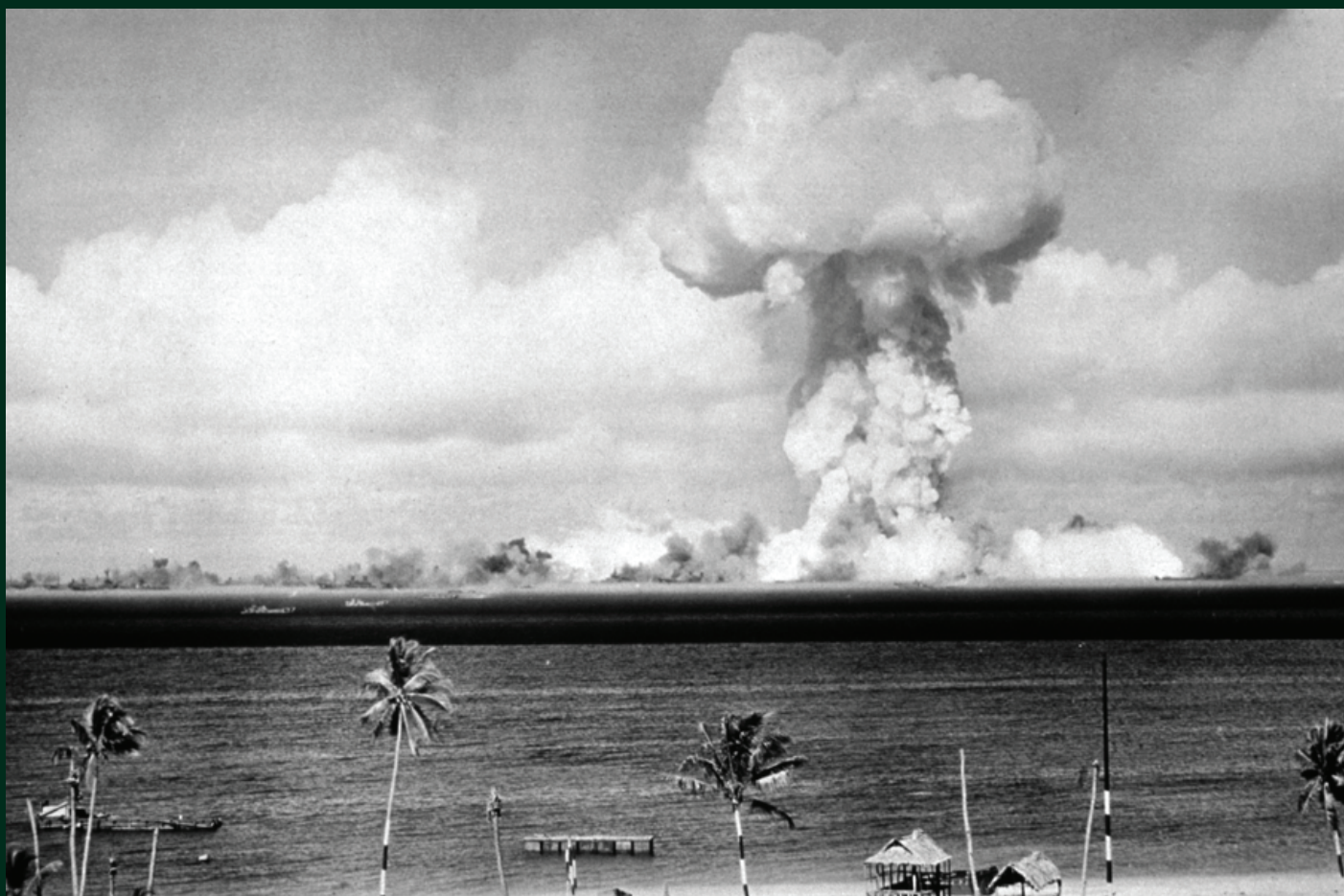
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Tin Sheds Gallery is a cross-disciplinary exhibition space at the University of Sydney to advance public debate on architecture, art, design and urbanism in contemporary society through innovative exhibitions, publications and related activities.



THE UNIVERSITY OF
SYDNEY
—
Architecture,
Design and
Planning

Cover image: Operation Crossroads, Bikini Atoll, 1946. Science Historical Images, Alamy.



峠 三 吉

原爆詩集

Genbaku Shishū (Atomic Bomb
Anthology) of Tōge Sankichi (1917-
1953), published in 1951, the cover
drawn by Shikoku Gorō (1924-2014).



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Acknowledgements

This exhibition is taking place on the land of the Gadigal people of the Eora nation. We wish to acknowledge the particular harms that the Indigenous people of this Country have suffered in the race to acquire nuclear weapons. Part of that story is told and displayed in the exhibition.

The Organising Committee warmly thanks the sponsors who have made the exhibition possible, including the Chancellor's Committee of the University of Sydney and the Australia–Japan Foundation. Above all, we acknowledge the very generous financial and organisational support given by the Tin Sheds Gallery at the University of Sydney, and the invaluable professional leadership of Kate Goodwin and Iakovos Amperidis of the Tin Sheds Gallery. For the production of the catalogue we are indebted to the editing skills of Lynn Smailes and the desktop publishing expertise of Adrian Thai.

A programme of public events to exchange ideas and perspectives between the general public, artists, activists, and academics, accompanies the exhibition. We would like to thank the participants in these panels and presentations: Okamura Yukinori, curator at Maruki Gallery for the Hiroshima Panels, Marilyn Fairsky, multimedia artist and activist, Maralinga Tjarutja artists joining us from Yalata, ICAN founders, Allan Marett whose authority on classical Chinese and Japanese music and Aboriginal songs and culture has produced a modern Noh performance in English, *Oppenheimer*, and peace activist and author Yuki Tanaka. We express our gratitude to Robert Tickner AO for launching the exhibition. Amongst his many other commitments to public service, Robert is also an ambassador for ICAN Australia.

Organisations

Chau Chak Wing Museum; Daigo Fukuryū-Maru Exhibition Hall; Fukushima Prefectural Museum of Art ; Hiroshima Peace Memorial Museum; Hito Museum – Ueno Makoto Woodcut Prints Museum; International Campaign Against Nuclear Weapons (ICAN); Arts Ceduna; Black Mist Burnt Country – touring exhibition project; Alphaville Arts; Maruki Gallery for the Hiroshima Panels; Marunouchi Gallery; Nagasaki Atomic Bomb Museum; The Australian Network for Japanese Law; The Mujinto Production; The University of Sydney Law School; University of Sydney Archives.

Individuals

Anzai Ikuro; Allan Maret; JD Mittmann; Kawaguchi Yūsuke; Luke Nottage; Margaret Harris; Noda Masaya; Pam Diment; Maikuma Nanae; Marilyn Fairskye; Mima Smart OAM; Minerva Inwald; Motohashi Seiichi; Shikoku Hikaru; Shimada Kousei; Simon Bronitt; Takayashiki Masahito; Tilman A Ruff; Tsuchiya Tokiko; Yamahata Shogo; Yamane Kazuyo.

Organising Committee

Yasuko Claremont
Paul Brown
Judith Keene
Elizabeth Rechniewski
Roman Rosenbaum

Yasuko Claremont, Judith Keene, Elizabeth Rechniewski and Roman Rosenbaum are Honorary Research Associates at the University of Sydney. They have been working together since 2012 on a series of workshops, international conferences and publications within the overall project: “Reconciliation in the Asia-Pacific Region”. This exhibition is the final event in that series.

Paul Brown is the Sydney based creative producer for Alphaville Arts. In 2014-17 he facilitated an international arts program with atomic survivor communities, featuring Australia’s indigenous sculpture gift to the Nagasaki Peace Park, and other multi-arts projects with the Yalata community.

Dimity Hawkins AM is an activist, researcher and co-founder of the International Campaign Against Nuclear Weapons (ICAN), winner of the Nobel Peace Prize in 2017 “for its work to draw attention to the catastrophic humanitarian consequences of any use of nuclear weapons”.

ALL READINGS
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MARSHALL ISLANDS—NORTHERN
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75 years after the bombing of Hiroshima and Nagasaki, the works on display in this exhibition illuminate the role of art in humanity's struggle to understand and control the nuclear world. From bearing witness to the horror of Hiroshima and Nagasaki, to highlighting the consequences of nuclear accidents and nuclear testing, to mobilising resistance, art has accompanied every facet of this challenge. The exhibition encompasses works that traverse the generations, from those of the witnesses and victims of Hiroshima to those of today's anti-nuclear activists, with a particular focus on Japan, Australia and the Pacific region.

The works in this exhibition encourage the viewer to reflect on the potency of art, whether in jolting us out of complacency, arousing empathy, provoking questions or inciting resistance. They challenge the acceptance of the dangers of the nuclear world that familiarity brings. And invite the questions: What have we done? What can we do now?

TIMELINE OF THE NUCLEAR AGE

- 1941** **7 December:** Japan bombed US Pacific fleet at Pearl Harbour.
8 December: US declared war on Japan.
- 1945** **9 March:** US Air command bombers flattened Tokyo, Nagoya, Osaka, Kobe with firestorms of super-intensity in Japan's most populous cities causing massive civilian death and destruction.
16 July: Manhattan Project, led by Robert Oppenheimer with American, British and Canadian scientists, carried out the first atomic bomb test detonation in the New Mexico desert.
26 July Potsdam Declaration. Japan rejected the Allied ultimatum for Japanese unconditional surrender.
6 August: US B-29 bomber *Enola Gay* unloaded an atomic bomb on Hiroshima, destroying the city and causing massive civilian deaths and injury.
9 August: US B-29 bomber *Bock's Car* dropped an atomic bomb on Nagasaki, causing the city's destruction and widespread civilian deaths.
9 August: Soviet Union declared war on Japan and began the military offensive in Manchuria.
12 August: Emperor Hirohito announced Japan's surrender.

1946–1951 American military occupation of Japan; Hiroshima and Nagasaki were sealed off and a press black-out placed on all reporting on those areas.

–1958 US carried out 23 nuclear tests on Bikini Atoll, Marshall Islands. The residents were relocated, many against their will. Some returned to Bikini Island in 1970; however, testing revealed dangerous levels of strontium-90 and cesium 137, leading to a second exodus in 1978. The Atoll is still deemed uninhabitable today.

1947 **3 May:** Japan's first post-war constitution, the so-called 'Peace Constitution', included an article (No 9) preventing all future engagement in war by the Japanese state.

June: The Doomsday Clock first appeared on the cover of the *Bulletin of Atomic Scientists*, founded in 1945 by concerned scientists from the Manhattan Project, to highlight the dangers of unchecked technology in a nuclear age. It indicates the minutes in a countdown to midnight, signifying catastrophe. The clock is reset every January.



Bulletin of Atomic Scientists,
Doomsday Clock with the initial
setting at seven minutes to midnight

1949 **29 August:** The Soviet Union carried out the first of more than 450 atomic tests in Semipalatinsk in the Soviet Republic of Kazakhstan. The true levels of contamination were uncovered when the site closed after the collapse of the Soviet Union.

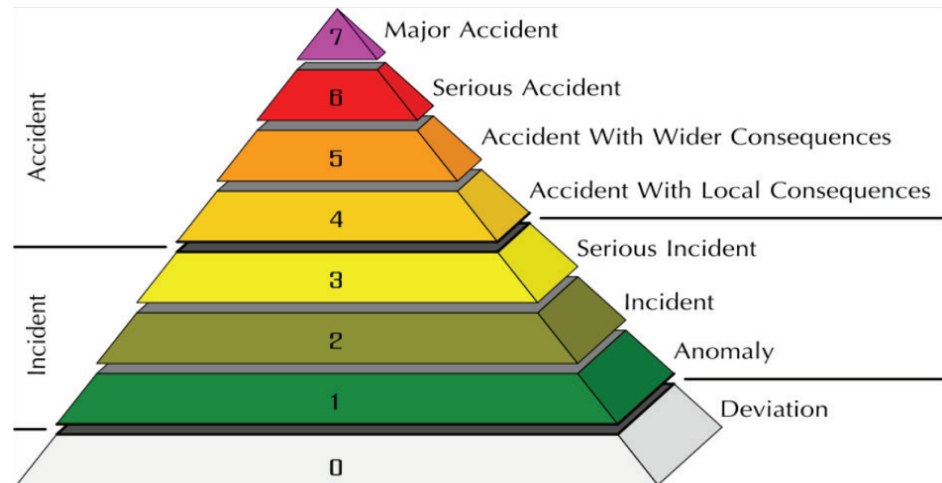
- 1950** **19 March:** The Stockholm Appeal, launched by the Comintern-backed World Peace Council, was a powerful force garnering millions of signatures for peace and world disarmament.
- September:** Australian Prime Minister Robert Menzies agreed to a request from Britain to allow nuclear testing in Australia without first receiving independent Australian scientific advice on the hazards to humans or the environment.
- 1951** **8 September:** The Treaty of San Francisco comprised a set of new post-war relationships between Japan and 48 other nations. It ended the Allied occupation of Japan and restored Japan's place in the community of nations with certain conditions: loss of colonies, guarantee of Korean independence and acceptance of US stewardship.
- 1952** The first British nuclear test on Australian territory, codenamed Hurricane, took place at Montebello Islands off the coast of Western Australia. In South Australia, with the closure of the Ooldea Mission and British plans for a permanent nuclear test site, groups of Anangu Pitjantjatjara were dispersed across South Australia, including to new townships at Yalata and Oak Valley.
- 1953** **October:** Britain exploded two nuclear bombs at Emu Field in South Australia – the Totem 1 and Totem 2 tests. Aboriginal people experienced the 'Black Mist' in the APY lands.
- 8 December:** President Eisenhower's speech on 'Atoms for Peace' before the UN General Assembly highlighted the common belief in the 1950s that nuclear power would be the energy source of the future. The US Postal Service commemorated the message on a postage stamp.



Image sourced from Wikimedia Commons, 19 June 2021

- 1954 1 March:** The tuna trawler, *Daigo Fukuryu Maru* ('Lucky Dragon No. 5'), when fishing outside the exclusion zone near the Bikini Atoll, was contaminated by fallout from the US Castle Bravo test, prompting a Japanese campaign against hydrogen bomb testing.
- 1956 May-June:** Operation Mosaic. Britain detonated two atomic bombs at Montebello Islands, off Western Australia.
- September-October:** Operation Buffalo. Britain detonated four atomic bombs at its 'permanent proving ground' at Maralinga in South Australia.
- 1957 September:** Operation Antler. Three more nuclear bombs were exploded at Maralinga in South Australia, making a total of 12 major bomb tests in Australia between 1952 and 1957. 'Minor trials' involving plutonium continued at Maralinga until 1963.
- 10 October:** Fire at Windscale nuclear installation, at Sellafield Cumbria England, the largest British commercial nuclear accident causing widespread contamination. Site decommissioned and area in large part sealed off. Estimated as INES level 5.

The International Nuclear Event Scale (INES) was devised by the International Atomic Energy Agency (IAEA) in 1990 to rate the safety levels in nuclear accidents in the manner of the Richter scale for earthquakes and to alert to the level of danger for disaster assistance. The INES scale ranges from the most serious, at level 7, signifying a major accident, to the least serious at level 1 indicating an 'anomalous incident'.



- 1957 November:** British Campaign for Nuclear Disarmament (CND) formed in London with fraternal links with like-minded groups in Germany and Benelux countries. CND marshalled large numbers of protesters in annual marches to British Atomic Weapons establishments, though numbers flagged by the late Sixties.
- 1960 13 February:** The first French nuclear test detonation, codenamed 'Gerboise bleue', was conducted near Reggane in French Algeria. France carried out 4 atmospheric and 13 underground tests in Algeria before switching to sites in French Polynesia.
- 1962 Late October:** The Cuban Missile Crisis, a 13-day flash point in the Cold War strategic arms race, was triggered by the delivery of Soviet ballistic missiles onto Cuban territory, which, with Cuban agreement, was legal under international law. After the US blockade and threat to use nuclear weapons, the Soviet weapons were withdrawn.
- 1963 10 October:** Limited Nuclear Test-Ban Treaty between the US, the Soviet Union and the United Kingdom, with a guarantee of a non-nuclear Germany, ushered in a period of Cold War stabilisation in Europe.
- 1964 16 October:** The People's Republic of China conducted its first nuclear test, making it the world's fifth nuclear-armed nation. China carried out a further 45 nuclear weapons tests at its Lop Nur site in Xinjiang province until 1996 when it signed the Comprehensive Test Ban Treaty (CTBT).
- 1966 17 January:** Major accident in US nuclear armed fleet, when four nuclear weapons lost in a mid-air refuelling crash caused major contamination of the Spanish village of Palomares. A six decade-long negotiation with American veterans and the Spanish government over reparations continues to this day.
- 1966-1996** 193 French atmospheric and later underground nuclear tests at Moruroa and Fangataufa in French Polynesia in the South Pacific contaminated the environment and exposed the population to dangerous radiation levels. The

atolls remain severely affected by radioactive fallout.

- 1979 28 March:** The Three Mile Island accident near Harrisburg, Pennsylvania, with a major leak of radiation from the nuclear generating station was the largest in American commercial nuclear energy production. The failure, a function of poor supervision, poor maintenance and human error, led to the decommissioning of the station. The incident was ranked on the INES scale at 5, an “accident with major consequences”.
- 1985 6 August:** The Treaty of Rarotonga created a Nuclear Weapon Free Zone in the South Pacific. The treaty prohibited the testing, use, creation, stationing and possession of any nuclear weapons in the region.
- 1986 26 April:** The Chernobyl nuclear power station accident, the result of shoddy equipment and poor maintenance, released more than 100 times the combined radiation of Hiroshima and Nagasaki into the atmosphere. The fallout was distributed over Northern Europe. INES assigned it a level 7 disaster ranking.
- 1996 24 September:** The Comprehensive Nuclear Test Ban Treaty (CTBT) prohibiting all nuclear detonation everywhere was opened for signature by the UN Secretary-General. By May 2021, 185 countries had signed the Treaty with 170 full ratifications.
- 2011 11 March:** The Fukushima Daiichi nuclear power plant disaster occurred following an earthquake and tsunami, causing three nuclear meltdowns, massive damage to homes and villages and displacement of local residents. INES rated the event at 7.
- 2017 20 September:** The Treaty on the Prohibition of Nuclear Weapons, the initiative of the International Campaign Against Nuclear Weapons (ICAN), opened for signature at the UN in New York.
- 10 December:** Australian anti-nuclear activists ICAN received the Nobel Peace Prize in recognition of their work “to draw attention to the catastrophic

humanitarian consequences of any use of nuclear weapons” and their “ground-breaking efforts to achieve a treaty-based prohibition of such weapons”.

2019 **2 August:** The Trump Administration formally withdrew from the Intermediate Range Nuclear Forces Treaty (INF) signed by Gorbachev and Reagan in 1987 to curb the use of nuclear weapons. The withdrawal drew strong condemnation from China and Russia, presaging a possible future nuclear arms race.

2022 **20 January:** The Doomsday clock stood at 100 seconds to midnight.



THE RUSSIAN INVASION OF UKRAINE AND UKRAINIAN NUCLEAR POWER PLANTS

JUDITH KEENE

Currently, Ukraine has fifteen operational nuclear power plants (NPPs), on four sites that fulfill around 25% of the nation's power needs. All are Russian-designed. Rivne in North West near the Polish border, houses four NPPs; Khmel'nitsky in the central west has two, and there are three more in South Ukraine. The six NPPs at Zaporizhzhia, on the south west coast, constitute the largest site of European nuclear power generation.

The defunct Chernobyl nuclear site, with four reactors, was the first Ukrainian plant for nuclear generation. An explosion in one of the reactors, in 1986, caused the world's largest nuclear disaster with widespread contamination dispersed across Northern Europe. Subsequently, all four reactors were decommissioned, sealed in protective casings, and the entire site at Chernobyl was surrounded by a 30 km Nuclear Exclusion Zone that extends into Belarusian and Russian territory. Until the recent Russian incursion, some 2,400 employees—scientists, technicians and general administrators—provided round the clock monitoring of the remaining infrastructure and associated waste-management facilities established since the disaster. Staff members commuted to their shifts from the purpose-built towns outside the protection zone.

NUCLEAR PLANTS AND THE RUSSIAN INVASION

Russian troops crossed into Ukraine on 24 February via the Nuclear Exclusion Zone in Belarus. International monitors recorded a spike in Chernobyl radiation levels. As none of the protective reactor shells had been breached, it was assumed that the readings were a function of the disturbance of contaminated dust and soil by the movement of troops and heavy infantry vehicles. A few days later, the Commander of the Russian forces declared that he had taken control of all matters relating to the sector and the management of nuclear power. At the same time, Chernobyl was disconnected from the national electricity grid and all other external power sources. Without communication by phone or internet from Chernobyl, some 210 very stressed, rostered-on Ukrainian staff, unable to leave or be replaced, attempted to carry out their responsibilities in makeshift light and under the surveillance of Russian soldiers.

In the South, on the evening of 4 March, with the Russian military units on the move towards Zaporizhzhia, Russian shells hit an administrative and warehouse complex near one of the Zaporizhzhian reactors. The fire that was caused, though quickly extinguished, burnt several buildings and destroyed an

external power line. Staff continued working under Russian military surveillance. Of the nuclear reactors units, Number 1 was closed down for maintenance; another continued operation at 60% functioning; and the others were shifted to a mode of lower power load. The safety systems of all of them continued to work with no release of radioactive material as far as could be determined while international monitoring was possible.

INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)

While part of the USSR, Ukraine's power supplies were integrated into an energy network with Russia and Belarus. In 1991, when the USSR collapsed, the Ukrainian government successfully negotiated to repatriate all nuclear warheads and missiles to Russia in return for which Ukraine would continue to supply Russia with Ukrainian-derived nuclear fuel. Soon afterwards, Ukraine signed the Nuclear Non-Proliferation Treaty as a non-nuclear weapons state and, in 2005, became a member of IAEA in Vienna. This began the process of Ukraine's disentangling from its historic relations with Russia. In 2014, when Russian invaded Crimea, the Ukrainian government ceased all exports of nuclear power to Russia. Since then Ukraine has made systematic overtures to Western Europe, for example by implementing the EU-favoured policy of Fuel Diversification, with the aim of future membership of the EU community. So far, this has not taken place though the Ukrainian President, since the Russian invasion, has called on EU members to immediately support such a move.

A central responsibility of IAEA membership is to contribute local data to Vienna from regulators placed in each member country to ensure that nuclear materials are used solely for peaceful purposes. The Director General of IAEA (9 March, Update 16) while noting that IAEA data was still being received from regulators on the other Ukrainian sites, expressed great concern that the Russian military commander had taken overall control of Ukraine's nuclear sector and that all communication had been cut with Chernobyl and Zaporizhzhia, where large amounts of fresh and spent fuel as well as other nuclear materials are currently stored.

The Ukrainian crisis provides an urgent, if dispiriting, reminder of the precarious nuclear knife-edge on which the world balances. As the conflict has escalated, it has demonstrated that in the conditions of battle the possibility of using nuclear weapons and the equally disastrous effect of nuclear accidents

have become normalised. Equally, the situation in Ukraine highlights the sad fact that even nuclear power generated peacefully leaves a toxic legacy of unassimilable residue that remains a factor that looms over all future peace-making and international aspirations for harmonious relations.



INTRODUCTION: REPRESENTATION, RECOGNITION AND RESISTANCE

ROMAN ROSENBAUM

INTRODUCTION: REPRESENTATION, RECOGNITION AND RESISTANCE

The exhibition “Art and Activism in the Nuclear Age” held at Sydney University’s Tin Sheds Gallery (7 April to 14 May 2022) is taking place more than 75 years after the nuclear catastrophe caused by the US atomic bombing of the Japanese civilian populations in Hiroshima and in Nagasaki, respectively, on 6 and 9 August 1945. The artists, curators and supporters involved in the exhibition have joined together with the aim of illuminating the role of art in promoting an understanding of the destructive potential of a nuclearised world and in galvanising the search for peace and disarmament.

The works on display are by several generations of artists from Japan, Australia and the Pacific and include Japanese victims who bore direct witness to the Hiroshima and Nagasaki bombings. Over the subsequent decades, artists—including a number whose works are displayed here—have used their creative energies to produce dramatic works that constitute artistic resistance to those original events of nuclear destruction and to the current unmitigated expansion in the use of nuclear technology or the impact of nuclear testing; the exhibition includes the powerful series of paintings by the women from Yalata, representing the experience of the First Nation Australians who suffered the catastrophic impact of British nuclear testing at Maralinga in South Australia.

The intention of all involved in this Tin Sheds event is to highlight the consequences for humanity of a nuclearised world, whether caused by war, by nuclear testing or as a function of the unregulated use of nuclear energy. We hope that the stunning works on display will encourage viewers to reflect on the potency of art: whether it is functioning as a spur to overcome popular complacency, arousing empathy for the victims, or inciting resistance. In whichever case, these artistic pieces disrupt the familiarity that makes invisible the dangers of the nuclear world and force us to ask the momentous questions: What have we done? And what can we do now?

The three central concepts addressed in this catalogue and the exhibition are best summarised as: representation, recognition and resistance.

It well may seem that little has been achieved after more than seven decades of *representing* the atomic bombings and the disasters caused by nuclear testing and nuclear accidents; disarmament negotiations have largely failed to prevent the proliferation of nuclear arms, while a succession of nuclear accidents has accompanied the associated and untrammelled expansion of

nuclear energy. There have been, however, certain positive outcomes. Beyond the setbacks, powerful modes of representation across a variety of media, ranging from photographs and paintings to film and a plethora of pop-cultural forms—and in combination with education—have increased dramatically the public attention paid to these difficult nuclear issues. It is ultimately through representation in art that some of the most vital questions of our nuclear world have been taken up and, we would argue, been demystified.

Our second tenet may be encapsulated by *recognition* in the sense of art as a means of alerting individuals and groups to the ongoing catastrophes caused by nuclear power and armaments, testing and accidents, but equally the deleterious effects on vulnerable and often disenfranchised minority groups and populations. To quote the eminent scholar and social critic Gayatri Spivak, there should be space within cultural creation for the subordinate to speak, to represent their experience, both through traditional forms and the opportunities offered by contemporary media. If art has indeed this subliminal potency to awaken viewers to action, then, perhaps, the Nobel Prize winning author Toni Morrison was correct when she proclaimed that “all good art is political! There is none that is not”.

The final element that constitutes the core of our symposiums and the exhibition is art as *resistance*. What can art bring to support the campaigns against nuclear power, the sale of uranium and the arms race? What range of forms—black humour, cartoons, manga, parody of existing images—can contest the status quo in our post-truth age? In the tradition of “Civil disobedience”, Gandhi’s non-violent protests, and the refusal to be swept up in neo-liberal government agendas and global corporate greed, perhaps art can rouse us to support the campaigns against nuclear power, the sale of uranium and the arms race, and refocus our energy away from self-centred nationalistic goals towards the global effort to prevent the doomsday nuclear catastrophe that threatens to engulf us all.

WHY THIS EXHIBITION NOW?

The exhibition and the symposium are part of a series of international conferences that have taken place in Australia and overseas to examine the socio-political and cultural interpretations of the history and legacies of Hiroshima and Nagasaki, and of the continuing challenge posed by nuclear

weapons and an expanding reliance on the industrial uses of nuclear power. The first conference, *World without Walls: 21st Century Perspectives on East and West*, held at the University of Sydney in December 2006, was sponsored by the Australian Society for Asian Humanities (ASAH), (formerly the Oriental Society of Australia), to mark the society's fiftieth anniversary. It examined the legacy of the yakeato generation, those who, in their youth, lived through the war and in the post-war years came to terms with that scarifying experience through the catharsis of art.¹ The ASAH and Sydney University's subsequent conference, in 2011, *The Asia-Pacific War: Return, Representation, Reconciliation*, was followed a year later by an international symposium *Looking Back on the Asia-Pacific War: Art, Cinema and Media*. The Academy of Korean Studies hosted the fourth international meeting in Seongnam, *Initiatives Towards Peace and Reconciliation in the Asia-Pacific Basin*, in April 2014.² The fifth conference, held in 2014 at Ritsumeikan University in Kyoto, examined war commemoration, peace and pacifism. In 2015, *Wounds, Scars and Healing: Civil Society and Post-War Pacific Basin Reconciliation*, at the University of Sydney, commemorated the seventieth year since the end of the Asia-Pacific conflict and the atomic bombing of Hiroshima and Nagasaki.³

The current exhibition provides an opportunity to reflect on the way in which the haunting memories of Hiroshima and beyond have been articulated and interrogated in art. To this end, we have brought together examples of artistic responses to nuclear disasters around the world, with a particular focus on Japan, Australia and the South Pacific. The ambiguity of Australia's geo-political location as one of the Oceania countries situated between the South Pacific Ocean and the Indian Ocean, in addition to its de facto position as part of Asia, signifies that rising nuclearisation and rearmament in the Asia-Pacific regions are of vital concern. It is this growing awareness of a "common Pacific interest" that has brought together the Pacific countries and islands to combat rising tension and arms races via nuclear free zones in the region.

In an era of widespread anxiety, largely provoked by the vicissitudes of Covid, we are moved by the thoughtful observations of António Guterres, the Secretary General of the United Nations, who said that it is vital to keep addressing the watershed moments in world history constituted by Hiroshima and Nagasaki. At the commemorations of those events that took place on 6 and 9 August 2020, he underlined that, "Today a world without nuclear weapons seems to be slipping further from our grasp"; and that, "division, distrust and

lack of dialogue threaten to return the world to unrestrained nuclear strategic competition".⁴

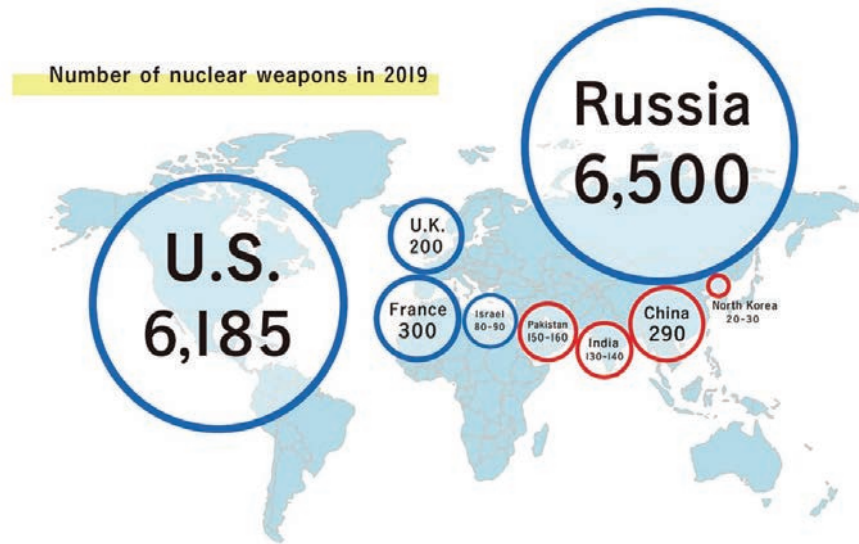


Figure 1. Number of nuclear weapons in 2019. Stockholm International Peace Research Institute SIPRI Yearbook 2019.⁵

A BRIEF TIMELINE OF ARTISTIC REPRESENTATION

Among the very earliest representations of the destruction wrought by the atom bombs were photographs taken by the Nagasaki photographer, Yamahata Yōsuke, whose shocking and poignant images were taken the day after the bombing of his city. Strict censorship imposed by the Allied Occupation Forces meant that Yōsuke's work was not widely known until after 1952, the year that marked the beginning of the dramatic engagement of Japanese art with the nuclear age.⁶ Yamahata's photograph of the young woman standing at a loss beside the burnt body of her mother was Ryu Chieko, fifteen years old. She was exposed to radiation in Yamazato-cho, Nagasaki, one km away from the epicentre. Her mother and younger brother were at home, 300 metres away from the epicentre and killed instantly. Ms Ryu passed away in August 2020 having dedicated her whole life towards no nuclear war movements. By contrast, international academic attention to nuclear art began in 1984, when Nina Felshin curated *Disarming Images: Art for Nuclear Disarmament*, which highlighted the aesthetic concerns from artists around the world.⁷ Much later,



Figure 2. Yamahata Yōsuke (1917-1966), Imperial Japanese Army Photographer, by courtesy of his son, Yamahata Shōgo. 10 August 1945.

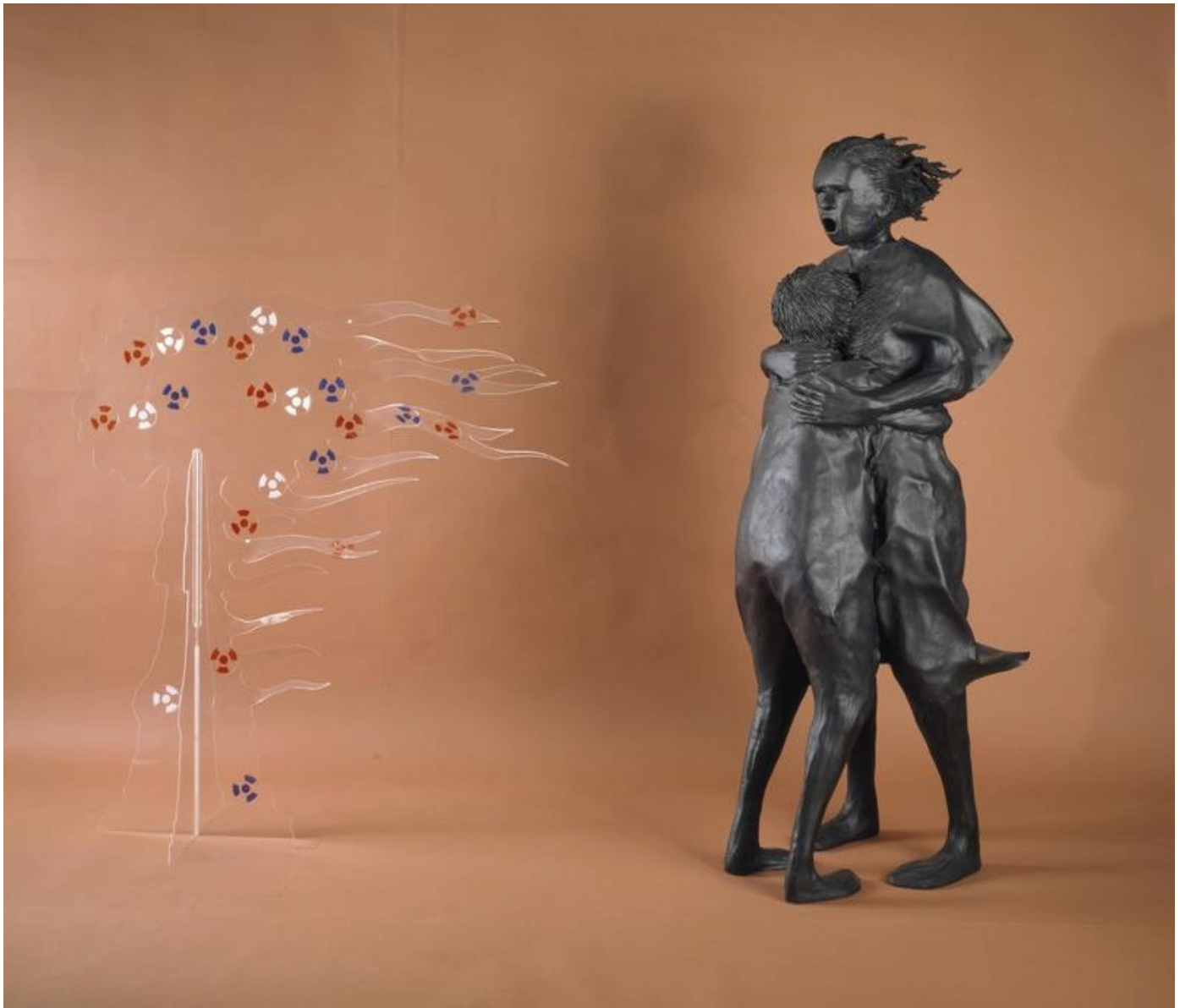


Figure 3. Lin Onus, *Maralinga*, 1990
© Lin Onus Estate/Copyright Agency,
2022.

in 2010, Robert Jacobs edited *Filling the Hole in the Nuclear Future: Art and Popular Culture Respond to the Bomb*, which examined the use of modern pop-cultural media as a means to discuss the legacy of the contemporary nuclear age, forged in the crucible of war.

Art, at its most visceral, can be controversial and contested. This was evident in the controversy in 1995, when American World War Two veterans forced the US National Air and Space Museum to cancel a planned display of the “Enola Gay”, the Supa-Fortress aircraft that dropped the bomb on Hiroshima. It was to have been part of a major exhibition commemorating the fiftieth anniversary of the end of World War Two.⁸ Similarly, as a gift to the city of Fukushima in August 2018, the artist, Kenji Yanobe erected a 20-foot child in a yellow Hazmat suit as a symbol of hope and reconciliation. However, local residents insisted on its removal within weeks, fearing the detrimental effects of negative publicity concerning the safety of their city.⁹

The Cold War triggered a catastrophic arms race that led to the displacement of many Indigenous populations as their homelands were used for nuclear testing: the Marshall Islands in the South Pacific during the United States nuclear testing between 1946 and 1962; France’s testing in French Polynesia; and British tests including Maralinga in South Australia, the Montebello Islands in Western Australia and Emu Field in South Australia from 1952 to 1963. Australian artist of Scottish-Aboriginal heritage Lin Onus created the three-dimensional work *Maralinga* to represent the legacy of disenfranchisement left by Australia’s nuclear tests, to refocus issues and arguments relating to contemporary Aboriginal Land Rights.

Subsequent generations of artists continue to render these past events through new representational forms and genres. An example is to be found in the recent international success of manga artist Kono Fumiyo’s *In This Corner of the World* (2016), a transgenerational anime treatment of the Hiroshima bombing. Such pieces demonstrate to new audiences that the consequences of the world’s only atomic bombings of a civilian population are far from over and continue to haunt us.

CONCLUSION

Many succinct formulations have highlighted the profound challenges that humanity faces as a result of the misapplication of nuclear energy. Uttered at

the time of the first detonation of a nuclear weapon, Oppenheimer's famous quote from the Bhagavad Gita, "now I am become Death, the destroyer of worlds", was foreshadowed by Albert Einstein's observation, "I do not know with what weapons World War Three will be fought, but World War Four will be fought with sticks and stones". Formulated in the 1940s, at the beginning of the nuclear age, both of these doomsday predictions, remain prescient today. The rationale for our exhibition and catalogue is to highlight the diverse forms that artistic resistance has taken in Australia and Japan and—by showcasing the actuality of the legacy of Chernobyl, Maralinga and Hiroshima and Nagasaki—to renew the necessity of a global commitment towards denuclearisation.

ENDNOTES

¹ Yasuko Claremont and Roman Rosenbaum, *Legacies of the Asia-Pacific War: The Yakeato Generation* (London: Routledge, 2009).

² This conference resulted in the edited collection: Michael Lewis, ed., *'History Wars' and Reconciliation in Japan and Korea* (London: Palgrave Macmillan, 2017).

³ This penultimate conference resulted in the publication of Yasuko Claremont, *Civil Society and Postwar Pacific Basin Reconciliation: Wounds, Scars, and Healing* (London: Routledge, 2018).

⁴ Ben Dooley and Hisako Ueno, "Hiroshima 75th Anniversary: Preserving Survivors' Message of Peace," *New York Times*, August 5, 2020, accessed 20 July 2021, <https://www.nytimes.com/2020/08/05/world/asia/hiroshima-japan-75th-anniversary.html>.

⁵ Stockholm International Peace Research Institute, *SIPRI Yearbook* (London: Oxford University Press, 2019). Cited at Hiroshima for Global Peace, 'Hiroshima for Global Peace page for the 75th anniversary of the atomic bombing of Hiroshima,' accessed 19 July 2021, <https://hiroshimaforpeace.com/en/hiroshima75/present-issue/>.

⁶ The images were published in *Kiroku-shashin: Genbaku no Nagasaki* 原爆の長崎: 記録写真 [The atomic bombing of Nagasaki: Documentary Photographs]. (Tokyo: Daiichi Shuppansha, 1952).

⁷ Nina Felshin, National Union of Hospital and Health Care Employees, Physicians for Social Responsibility (U.S.), and Art Museum Association of America. *Disarming Images: Art for Nuclear Disarmament*. (New York: Adama Books, 1984).

⁸ Atomic Heritage Museum, 'Controversy over the Enola Gay Exhibition,' October 17, 2016, accessed 26 July 2021, <https://www.atomicheritage.org/history/controversy-over-enola-gay-exhibition>.

⁹ Watanabe Shin, 'Controversy Blocks Out Sun Child Statue in Fukushima,' *NHK World Japan*, October 5, 2018, accessed 23 July 2021, <https://www3.nhk.or.jp/nhkworld/en/news/backstories/259/>.

The background of the entire image is a grainy, black and white photograph. It depicts a tropical beach scene. In the foreground, there are several palm trees, some of which are slightly out of focus. The middle ground shows a calm body of water, likely the ocean. The sky in the background is filled with large, dark, and dramatic clouds, suggesting an overcast or stormy day. The overall texture of the image is very grainy, giving it a vintage or historical feel.

HIROSHIMA, NAGASAKI AND BEYOND

YASUKO CLAREMONT

HIROSHIMA, NAGASAKI AND BEYOND

*Not knowing
Words that can console you
We only cry
Remembering you in life
And your courage¹*

A memorial poem inscribed on a stone monument commemorating the atomic annihilation of 321 Hiroshima junior high school students and 4 teachers, composed by their school principal, Furuta Sadae, in 1953.

*That August
The ferocious sun flashed
Above us
I cry
From the depths of my being²*

A poem by the mother of Yamashita Meiji³, a student at Hiroshima Junior High School, who died three days after the bombing, quoted in the book *Ishibumi*, 1972.

The atomic bombing of Hiroshima and Nagasaki was the historical event that provided the impetus for much of late twentieth century atomic art. That movement has sought not only to represent the horrors of nuclear catastrophe but also to celebrate the human resilience that emerged among the *hibakusha*⁴ (surviving atomic bomb victims) and their families and their fierce determination to prevent future nuclear calamities. This exhibition, "Art and Activism in the Nuclear Age", showcases a range of these artistic responses and the diverse artistic forms of their representation, from the experiences of the first-person witnesses to later encapsulations of private and collective memory. Through the display of art and artefacts from the bombings, including photographs, prints, sculpture and children's picture books, the exhibition illustrates the many

mediums in which these representations have been made.

The works include those by professional artists and ordinary citizens caught up in the horror of the immediate events. A powerful example of the latter includes the genre of “citizens’ drawings” from Hiroshima, nine of which are shown here in reproduction. They serve to evoke a primary sense of the lived experience in the “voices” of the victims themselves. These images underline the strong sentiment of much of the art in this exhibition: that Atomic Art from Japan cannot be separated from a commitment to anti-nuclear activism. Over the seven decades since the atomic bombing, new generations of artists have emerged to re-interpret Hiroshima and Nagasaki and to assay new forms, such as the Manga books included in the exhibition. In the vitrines a wide range of artefacts, such as a 3D reproduction of a radiation damaged medicine bottle and a record jacket of Midnight Oil’s “Red Sails in the Sunset”, demonstrates an ongoing anti-nuclear culture worldwide.

SOCIO-POLITICAL BACKGROUND

Hiroshima is now world-renowned as the city where, on 6 August 1945—and for the first time in the history of warfare—an atomic bomb was dropped on a civilian population. Three days later a second bomb devastated the city of Nagasaki and its inhabitants. According to official figures from the Japanese Ministry of Health, Labour and Welfare, in 1990, the total number of deaths from the bombings was 295,956, with 201,990 people killed in Hiroshima and 93,966 in Nagasaki. The atomic bomb survivors—the *hibakusha*—lived the remainder of their lives with the legacy of the injurious effects of radiation on their health and the egregious social discrimination that they suffered. It was not until 1957 that a bill to aid *hibakusha* was passed through the parliament. It was achieved as a result of determined lobbying by groups of *hibakusha* and their supporters, backed by mounting pressure from the media as well as the medical and legal professionals. In that year the Ministry of Health, Labour and Welfare issued the *Hibakusha kenkō techō* (the *hibakusha* medical card) that guaranteed free medical treatment for atomic bomb victims. However, among other eligibility restrictions, it was only made available to those living in Japan.⁵ In 1980, 372,264 *hibakusha* obtained the special medical card; by 2017, as a function of the aging cohort of the *hibakusha* population, the number had fallen to 164,621.⁶ And, only in August 2021, did the then Prime Minister Suga decide not to oppose a

combined application from 84 plaintiffs to be granted eligibility for the card. After the atomic bombing event, this group had experienced exposure to radioactive black rain in areas that were outside the government's designated eligibility zone.⁷

Under the arresting banner of "No More Hiroshimas", and despite the censorship exercised during the occupation of the country by the US-led Allied Forces, individuals and groups of *hibakusha* were a driving force behind the grassroots movement for nuclear disarmament that developed in the early postwar period. As well, the *hibakusha* have played an influential role as *Kataribe* (transmitters of stories to future generations), sharing their eyewitness accounts with visitors to Hiroshima and with local schoolchildren. Their personal accounts and eyewitness testimonies have created a powerful and moving genre within Japanese contemporary writing. Poets and literary writers, including Hara Tamiki (1905–1951)⁸, Tōge Sankichi (1917–1953)⁹, Ōta Yōko (1903–1963)¹⁰ and Kurihara Sadako (1913–2005),¹¹ were amongst the first to express their immediate responses to the atrocity, establishing a genre that is unique to Japan, known as *Genbaku bungaku* (Atomic Bomb Literature).

Prompted by Japanese artists and activists, a post-war disarmament movement began in other parts of the world, for example, the Stockholm Appeal (1950) in Sweden. Similarly, the Campaign for Nuclear Disarmament (CND), that began in the United Kingdom in 1957, has become an increasingly strong political and social force. The significance of this world-wide movement was demonstrated with special resonance for Australians, in 2017, with the award of the Nobel Peace Prize to the Melbourne-based activist organisation International Campaign Against Nuclear Weapons (ICAN), which has led the campaign for the UN Treaty on the Prohibition of Nuclear Weapons (TPNW). The target of 50 ratifications was reached in October 2020 so that the Treaty came into force on 22 January 2021. Currently, 86 nations have signed the Treaty and 55 have ratified it. The notable exceptions are the nine nuclear-armed nations (the US, China, Russia, France, the UK, India, Pakistan, Israel and North Korea) who have refused to sign. It is equally striking that countries such as Japan, Australia and South Korea, who rely for their security on the nuclear-armed nations, have so far also refused to join the UN's TPNW. It is noteworthy and dispiriting, perhaps, that Japan has not signed the Treaty, a stance that reflects the on-going and close military ties that the nation has retained with the nuclear-armed United States. The US–Japan Security Alliance, signed in

September 1951, cemented Japan's defence ties to the US and continues to this day. Although former Prime Minister Eisaku Satō¹² set out the three non-nuclear principles in 1967 (non-production, non-possession, non-introduction of nuclear weapons), Japan has closely bound itself to US nuclear policies. Following Dwight Eisenhower's policy of "Atoms for Peace", Japan built as many as 54 nuclear power stations before the accident at the Fukushima Daiichi Power Station in 2011. Nine continue in operation in 2021, despite the strong opposition to them by many local citizens.

In recent years Japanese people have been made more aware of the atrocities that the Imperial Japanese Army committed during the Asia-Pacific War. This public awareness has come about as a result of historical investigations, articles in the national media and civil investigations into what had taken place before and during wartime in Japanese-occupied Manchuria, China, Korea, Malaysia and the Philippines. The previous ignorance among Japanese people was a function of a number of factors, among which governmental political expedience has been important. In any event, it is now public knowledge that Japanese people were not the only victims of the war; other nations as well must be recognised as victims of Japan's wartime aggression. For example, Kurihara Sadako, born in Hiroshima and a *hibakusha* poet, demonstrated singular bravery in challenging her fellow citizens who refused to acknowledge the atrocities that the Imperial Japanese Army had committed during the Asia-Pacific War. In her powerful 1974 poem, "Hiroshima to iu toki" (When you say Hiroshima), she lays out a series of counter-examples when asked about Hiroshima: "Pearl Harbor, Nanjing Massacre, the women and children burnt to death in Manila" as she urges Japanese people to "cleanse" their "dirty hands" in order to be forgiven, and to attain mutual understanding and peace. Richard Minear, the American specialist in Japanese culture and an historian of World War II, has praised Kurihara's work as "compelling poetry that constitutes a major legacy of the nuclear age".¹³

It is probably not surprising that not all sections of the Japanese population acknowledge Japan's wartime crimes, nor that revisionist attitudes remain prevalent in certain parts of Japanese society, since successive conservative Japanese governments have adopted the political stance of denying wartime atrocities, a position that often attracts national and international condemnation. As already noted, Japan is not a signatory to the UN Treaty on the Prohibition of Nuclear Weapons and it is the case that

a number of political leaders would be eager to participate in future warfare if Article 9 of the Constitution—which precludes such activities—were to be altered.¹⁴ The campaigners for nuclear disarmament, as well as the sceptics opposed to the Japanese nuclear energy industry, face stiff opposition from their own national authorities.

These governments have been intransigent in refusing to acknowledge responsibility for the welfare of war victims in the countries invaded by the Imperial Japanese Army. Moreover, there were POWs (Prisoners of War) and forced labourers from Korea, China and the Philippines in Hiroshima and Nagasaki at the time of the atomic bombing. Their existence was not acknowledged, nor was their suffering compensated. The discrepancy between public posture and the facts brought to light by the liberal civil society movements in Japan has left the general public confused and the historical discussions of national wrongdoing largely unresolved. Nevertheless, there are cases of reconciliation between foreign wartime victims and Japanese authorities that have taken place, largely because of the support given by Japan's liberal civil societies. A Dutch POW, Willy Buchel van Steenberg, was *hibakusha* of Nagasaki but, because he lived in the Netherlands, he had been deemed ineligible for free medical treatment. Supported by civil societies and lawyers, he finally won compensation in 2014.¹⁵

ART AND NUCLEAR ACTIVISM

The early artworks on Hiroshima and Nagasaki are predominantly graphic and highly emotionally-charged. The artists were preoccupied with transmitting the impact of what happened on the day of the atomic bombing, even though they themselves did not witness the disaster. It hardly needs to be said that those who were there, perished in silence. The artists reconstructed the scenes on canvas through the creative power of their imagination, based on what they saw of the aftermath of the bombings and what they heard from the eyewitness accounts. Interestingly, one of the features of their representations was to use traditional forms, such as folding panels or scrolls of continuous narrative paintings with texts or woodcut prints. The following section discusses some of the most significant artworks in the exhibition.



Figure 1. 1950, Hiroshima Panel No. 2, "Fire", Sumi ink, pigment, glue, charcoal or conté on paper, 180 × 720 cm.



Hiroshima Panel *Fire*

Maruki Iri, a *sumi* (monochrome ink) painter, and his wife Toshi, an oil painter, were in Urawa, Saitama Prefecture, to avoid the air raids on Tokyo when the atomic bomb was dropped on Hiroshima. As soon as they heard news of the bombing, Iri went to see his family in Hiroshima; Toshi followed a few days later. It was three years, however, before they felt ready to paint their responses to the horrors they witnessed. They worked together on the same large canvas: their different artistic styles did not clash. On the contrary, they complemented each other, creating a dynamic and intense symbolism. The result was a series of large panels, eventually numbering a total of fifteen.¹⁶ The first panel, entitled “*Ghosts*”, was exhibited in the *Japan Le Salon Des Independants* at the Tokyo Metropolitan Art Museum in February 1950. “*Fire*”—shown in reproduction in this exhibition—was the second panel and “*Water*”, the third. The panel “*Fire*” represents the suffering of the people who were burnt to death. The movements of the human bodies are depicted not as static but as intensely responsive to this unimaginable cruelty, suggesting the resilience of life in death. The Marukis did not want their viewers to feel depressed but rather to appreciate the beauty of life through their art. The trilogy was exhibited in the same year on a national tour of Japan, at a crucial time when the Japanese people living outside Hiroshima still had little knowledge of what had happened, because the Occupation Forces had clamped down on any reporting of the atomic bombings and their aftermath.

The Marukis’ national tour began from Hiroshima, supported by *Warera no uta no kai* (Our Poetry Society), a group of young poets and artists directed by Tōge Sankichi. The first three Panels were exhibited in the Goryū-sō on 5-9 October 1950 at the foot of the Aioi Bridge, the target of the Enola Gay’s bomb, thus providing a physical link to the reality of the event.

Below is a sketch of the Goryū-sō that was drawn by Shikoku Gorō¹⁷ (1924–2014), who was later to become active in the anti-nuclear weapons movement in Hiroshima. The image of a wooden building with the atomic dome in the background is evocative of the early years after the bombing in Hiroshima.

There is no doubt that the Marukis were effective in fostering anti-nuclear sentiment among the young artists and the people who came to view their exhibition. The Marukis continued producing Hiroshima Panels from 1950 to 1982. They felt compelled to add Hiroshima Panel No. 9, *Yaizu*, 1955, which was created in response to the nuclear testing incident in 1955 at Bikini Atoll,



Figure 2. 1950s, Shikoku Gorō, by courtesy of Shikoku Hikaru. The banner in front of the building reads "Genbaku no zu ten"[Exhibition of Atomic bomb panels]



Figure 3. Shikoku Gorô is the second from the far left in the first row; behind Shikoku is Tôge Sankichi in the second row; to his right Maruki Toshi (then called Akamatsu Toshiko), then Tsuboi Shigeji¹⁸ and Maruki Iri. Photo c.1950.

where a Japanese fishing boat, *Daigo Fukuryū-maru* (No 5 Lucky Dragon) was exposed to nuclear fallout. The nation-wide campaign to gather signatures on a petition to stop nuclear testing was depicted in Hiroshima Panel No. 10, *Shomei* (Petition), 1955. The Marukis also responded to viewers' critical comments elsewhere. At their 1970 exhibition in New York, their work was criticised for an apparent lack of recognition of Japan's wartime atrocities, including the mistreatment of Allied POWs.¹⁹ The following year, they responded by producing Hiroshima Panel No. 13, "*Death of American Prisoners of War*". Thus, the series of fifteen Hiroshima Panels reflects the spiritual journey of the Marukis in their understanding and indictment of the indiscriminate use of violence.

The Hiroshima Panels have been exhibited in other countries, including Australia and New Zealand in 1958. It is interesting to note that in Sydney, probably as a result of the rawness of the recent popular memory of Japanese wartime atrocities, the reception of the panels was hostile; as a result the exhibition at the Art Gallery of New South Wales was cancelled after three days. By contrast, when the tour continued to Melbourne, Adelaide and Perth the exhibition of the panels was received with great interest. On the return to Sydney, the exhibition, again held at the Art Gallery of New South Wales, was a great success, attracting 80,000 visitors.²⁰

Storm over Kiyō—Tale of Nagasaki

Fukami Noritaka (1919–1951) was in an army office 4.4 kilometres from the epicentre at the time of the Nagasaki atomic bombing. He went into the city to rescue people three hours after the bombing and was exposed to intense radiation. The following summer he went back to his hometown, Hitoyoshi, Kumamoto, where he worked as a schoolteacher. There, in 1946, he painted *Storm over Kiyō—Tale of Nagasaki* on an 11-metre-long scroll, using leftover shoji-screen paper and watercolour paints. Because of the strict censorship imposed by the Occupation Forces (headed by the US military in which the participating British Commonwealth armies were commanded by the Australian army), this work was not shown in public until the 1980s. Tragically, Fukami suffering from radiation sickness, committed suicide at the age of 31.

It is interesting to reflect on why Fukami used the form of a picture scroll, which constitutes an unfolding story as the viewer scrolls through. His deliberate adoption of an old local term "*Kiyō*" for Nagasaki, and his application of the traditional literary style of the genre of *monogatari* (story telling) as it is



Figure 4. Hiroshima Citizen's paintings. Takumyo Kasumi, 7 August 1945, around 3 pm, 300m from the epicentre. "The dead body of an American POW who was tied at the railing of the bridge"



Figure 5. Hiroshima Citizen's paintings. Mori Takahito, 7 August 1945, around 8:30 am, 980m from the epicentre. "Captain! Water, please!"

narrated in classical Japanese language, may indicate a desire to relegate the nuclear disaster to the past, thereby detaching it from the present reality of the disaster, to become a story from a long-ago era.

Citizens' drawings²¹

In 1974 an elderly man, Kobayashi Iwakichi, visited the Japanese Broadcasting Commission, NHK, in Hiroshima to encourage Japanese citizens to adopt the practice of keeping records of what had happened on the day of the atomic bombing. He showed an NHK journalist his own drawing, explaining that he could not forget what he had seen on 6 August 1945. A call for other eyewitnesses to produce drawings began with the assistance of Shikoku Gorō, who became a strong advocate for the project. Shikoku became a regular figure on TV, encouraging viewers to paint or draw on whatever material they had at hand; or to use words if they felt that was necessary. Currently, 4006 drawings, mostly collected in 1974, 1975 and 2002 as “citizens’ drawings”, are held at the Hiroshima Peace Memorial Museum. They constitute a precious primary record of the actual immediate experience of the atomic bombing in Hiroshima. A prominent theme that can be found in many of the images is the depiction of an embrace between a mother and child, highlighting in the face of their despair the unbreakable bond that unites them. It is important to point out that two of the nine citizens’ drawings that are displayed in reproduction in the exhibition depict American POWs, revealing the cruel and indiscriminate reality of the atomic bomb that killed friend and foe alike.

Woodcut print *Surviving*

Ueno Makoto (1909–1980) was born in Kawanaka-jima, Nagano. In early postwar Japan he was an active member of the woodcut movement. Ther movement was begun by Lu Xun in China in the 1930s and focused on the strength of the human body and the spirit of working-class people. Soon after the end of the Asia-Pacific War, Chinese woodcut prints were widely displayed in Japan, as a highly popular part of Japanese print media.

The print on display, *Surviving*, depicts a husband and wife embracing despite being suddenly blinded by the flash of light from the atomic bombing of Nagasaki on 9 August 1945. It is a poignant image that evokes the solidarity and love between the two subjects. The powerful depictions of the two hands—one in the centre of the print and the other in the background, burnt and scarred—

reflect the influence on Ueno's artistic style of the realism practised by the artist's mentor, the German artist, Käthe Kollwitz²² (1867–1945).

A powerful mural, *Myth of Tomorrow*

Okamoto Tarō (1911–1996), a prolific Japanese artist noted for his abstract paintings and sculpture, studied at the Pantheon-Sorbonne in the 1930s when modernist movements were in vogue. The 30-metre-long mural at Shibuya Station, *Myth of Tomorrow*, depicts the moment of the explosion of the atomic bombs at Hiroshima and Nagasaki and, in the lower part, *Daigo Fukuryū-maru* (No 5 Lucky Dragon), the fishing boat that, unwittingly, had been exposed to nuclear fallout from the US Castle Bravo test. The mural depicts catastrophe, yet by using vivid primary colours and abstract movements of the figures, the artist celebrates the power of humanity to overcome tragedy and to hold out the hope of a better tomorrow.

Amongst the general aims of this exhibition is that of highlighting the dialogic communication between various atomic artworks. In this light, Okamoto's mural is inspiring in that a group of young Japanese activists, Chim↑Pom, appropriated the mural in order to express their concerns about the danger of nuclear disasters. Without seeking permission, the young painters added a new section to the mural that depicted the Fukushima Daiichi Nuclear Plant disaster of 11 March 2011. The Shibuya Station's security people quickly removed the added section of the artwork, but by then the incident had already received extensive and mostly favourable coverage in the press. The impact of the striking and positive aspects of Okamoto's art is also evident in a public art of Yanobe Kenji (b. 1965) called *Sun Child*. Yanobe created this monument in response to the Fukushima nuclear disaster in a hope that the creativity of art will bring out the power of continuing life amid despair.

More recent works of art on Hiroshima

Historically, the *hibakusha* have been at the forefront of Japanese activism in building the anti-nuclear movement. As that population has aged, however, and their numbers declined, the role of the artist as activist has become increasingly important in maintaining popular awareness of the necessity of a strong movement for nuclear disarmament. Over the span of the seven decades since the scarifying original event, atomic art has diversified into a plethora of genres and techniques, including painting, photography, sculpture, manga and

Figure 6. Okamoto Taro, 1968-1969, *Myth of Tomorrow*. Alamy.

The long-lost Okamoto masterpiece, the mural *Myth of Tomorrow*, 5.5 x 30 metres, discovered in Mexico, finally found its place at the Shibuya Station building in 2009. Okamoto's creativity bursts forth in his depiction of the horror of the atomic bombing and, through the vivid colours and dynamic movements, regenerates the power of life to overcome fear and despair. The Lucky Dragon fishing boat at the corner of the mural look like a girl wearing a skirt, that swirls in the water, in the company of animals including a whale who are running away for safety.



Figure 7. Level 7 feat. 'Myth of Tomorrow' 2011. Video (6' 35"), PVC panel, paper, acrylic, etc. 200x84cm. Photo: Miyajima Kei, courtesy of the artist and MUJIN-TO Production.

ChimPom added to the original "Myth of Tomorrow," his painting of the meltdown of the Fukushima power plants, imitating Okamoto Tarō's vibrancy of colour and movement. The title "Level 7 feat. 'Myth of Tomorrow'" conveys his awe of Okamoto's achievement: 'Level 7 feat' suggests that the work lies beyond even human intuition, humanity's 'sixth sense'



prints that encapsulate and preserve the historical memory of the Hiroshima and Nagasaki bombings. For example, Kohno Fumiyo's manga, *"In this Corner of the World"*, that came out as a series between 2007–2009, found strong resonance with younger generations. It made the topic of war and Hiroshima accessible through depicting the wartime experiences of the heroine, Suzu. When the animation film of the series was released in 2016, it was a worldwide hit at the box office. Although Kohno was born in Hiroshima in 1968, she admitted that she knew very little about war and the atomic bombing. Her portrayal of Suzu's life-journey illustrated the daily life and quotidian concerns and family relationships of an ordinary woman in wartime. Suzu remained largely unaffected by war until she lost her hand in an air raid. In the filmic trajectory of Suzu's life she felt cheated when the war was lost. In this manga, even though the message of nuclear disarmament is not foregrounded, it is deeply embedded in the mise en scene and the film's narrative structure.

A memorial landscape: Hiroshima Peace Memorial Museum

Buildings potentially are works of art and constitute statements of vision and culture that can reflect the times in which they were built. The exhibition includes a photograph of the Hiroshima Peace Memorial Museum and explores its significance within the Peace Memorial Park.

Immediately after its unconditional defeat, Japan faced a series of crises, from food shortages to the loss of national identity. Yet, despite facing daily difficulties, the Japanese people put extensive efforts into rebuilding their local community buildings, such as shrines and temples destroyed by air raids. On a national level, the Hiroshima Peace Memorial City Construction Law came into force in 1951 whereby land owned by the national government was transferred to the city of Hiroshima. Tange Kenzō, a professor at the University of Tokyo who was involved in reconstructing the bombed city from as early as 1946, envisioned a large park to memorialise the atomic bombing and its victims. In October 1949, the architectural journal *Kenchiku Zasshi* quoted from the statement that accompanied Tange's prize-winning proposal: "...This facility is not meant to commemorate peace in an abstract way, but it is for actively producing peace. I hope that my building works as a factory for peace".²³

The Hiroshima Peace Memorial Museum with the simplicity of its window panels, standing high on pillars and yet firmly planted in the ground, is situated in the Hiroshima Peace Park and can accommodate large numbers of visitors.

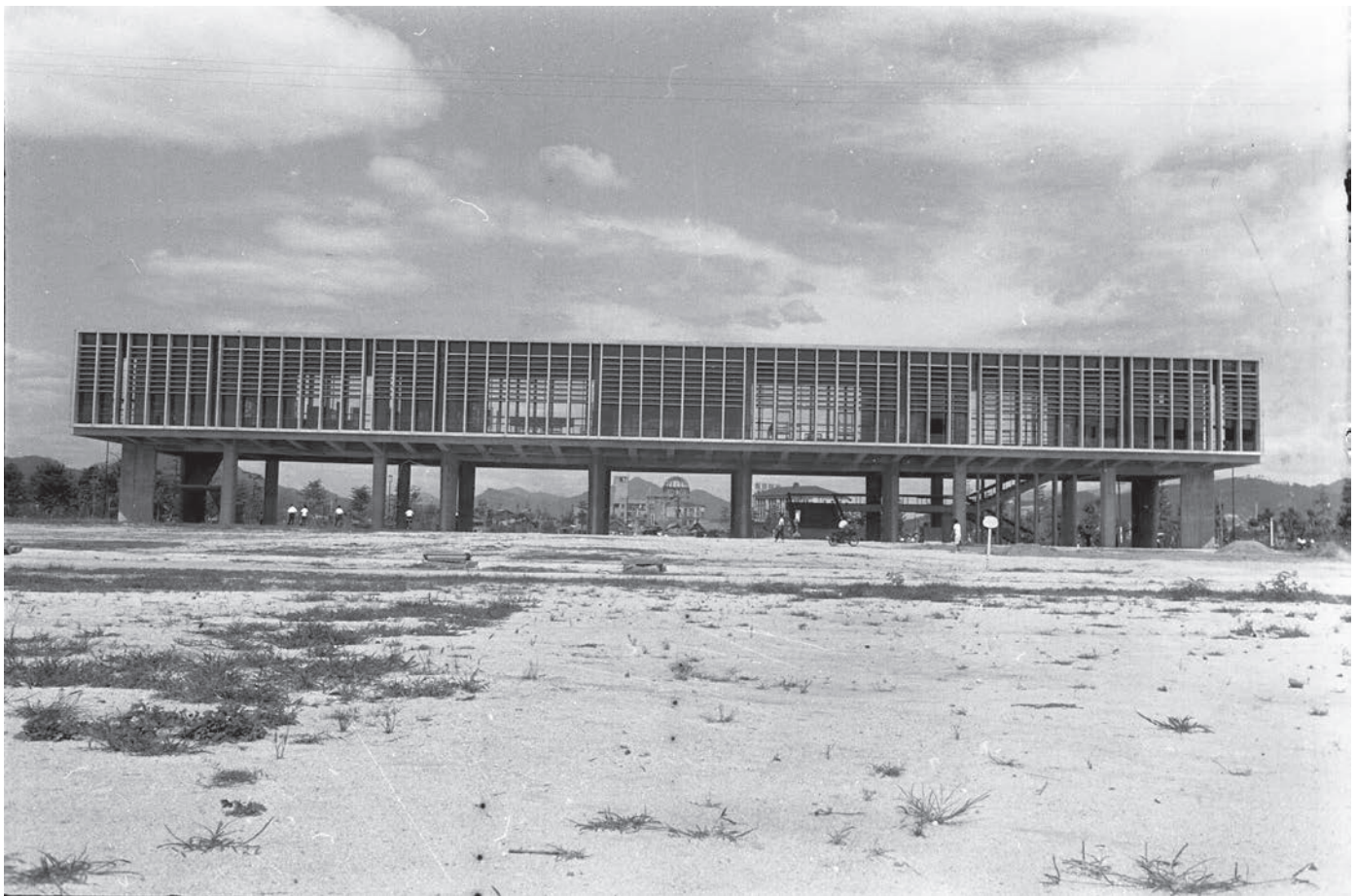


Figure 8. Courtesy of the Hiroshima Peace Memorial Museum, collected by the first director of the Peace Memorial Museum, Nagaoka Shogo, 1901-1973.



Figure 9. Memorial Mound (*Kuyōtō*), Hiroshima Peace Park. Courtesy Kawaguchi Yūsuke.

Its affinity with the Shōsō-in, the imperial depository in the 8th century Nara period, is clear. The cenotaph is also easily identifiable as inspired by traditional architecture, with the roof of a shrine. It is ironic, perhaps, that the Japanese fought and died in a war—in the name of the Emperor and in which the death toll amounted to three million-- and yet imperial culture is resurrected here in an example of post-war architecture that is intended to represent peace in a modern democratic nation.

Memorial Mound (*Kuyōtō*)

A burial mound, the Memorial Mound, situated in a quiet corner of the Peace Park, contains the ashes of 70,000, mostly unknown atomic bomb victims. Although 814 victims have been identified, the families have not claimed their remains.

Saiki Toshiko (1919–2017), *hibakusha* who lost thirteen of her family members in the atomic bombing, volunteered for over 40 years to clean and weed the area surrounding the mound, as well as search for the families to whom the ashes belonged. The efforts made by this individual for the Memorial Mound are in stark contrast to the formality of the official cenotaph.

Since the atomic bombing of Hiroshima and Nagasaki, the world has never emerged from the shadow of nuclear war. The displays in this exhibition are

a reminder of the horror of that war and also of the spirit of resistance that has inspired artists over several generations to envisage a different future for mankind, freed from that shadow.

ENDNOTES

¹ Hiroshima Television Corporation, *Ishibumi: A Memorial to the Atomic Annihilation of 321 Students of Hiroshima Middle School*, translated by Yasuko Claremont and Roman Rosenbaum (Tokyo, Poplar Publishing, 2016), 8. The Japanese original was first published in 1970 and has been reprinted many times.

² Hiroshima Television Corporation, *Ishibumi: A Memorial to the Atomic Annihilation of 321 Students of Hiroshima Middle School*, 9.

³ Japanese names in the text are written in the correct form which is with the family name first, followed by the given name.

⁴ The literal meaning is the people who were exposed to the radiation that was emitted by the atomic bombing. They were burnt externally as well as radiation-affected internally.

⁵ This restriction was lifted on 1 April 2010.

⁶ <https://www.asahi.com/articles/ASK74517HK74PITB009.html>.

⁷ Not only did all 84 plaintiffs receive the medical card but all other 'black rain' victims are also now deemed eligible.

⁸ Hara Tamiki was *hibakusha*, a poet and a writer. His short story *Natsu no hana* (Summer Flower) was regarded as a pinnacle of the genre of atomic bomb literature.

⁹ Tōge Sankichi's collected poems *Genbaku shishū* (Atomic Bomb Anthology), published in 1951, were well-known and often cited. The cover and illustrations on the front and back covers were drawn by Shikoku Gorō.

¹⁰ Ōta Yōko was *hibakusha*, a journalist and a fiction writer. Her book *Shikabane no machi* (The Town of Deaths) was said to have influenced Maruki's first Hiroshima Panel, *Yūrei* (Ghost).

¹¹ Kurihara Sadako was *hibakusha*, a poet and a writer. She was known as an activist poet whose targets included nuclear armament as well as Japan's ongoing imperial system.

¹² Satō Eisaku (1901-1972) was a Japanese politician who served as Prime Minister from 1964 to 1972. His main achievements during his prime ministership were the reversion (return to Japanese sovereignty) of Okinawa in 1972 and the signing of the Nuclear Non-Proliferation Treaty in 1971. He won the Nobel Peace Prize in 1974 for the latter. His decision to agree to the stationing of US forces, as well as nuclear warheads, in Okinawa after the reversion was, however, controversial.

¹³ Richard Minear (b. 1938) is Emeritus Professor of History at the University of Massachusetts, Amherst, author, translator, editor and critic, publishing widely on the Asia Pacific War, the Tokyo War Trial and atomic bomb literature. He is an associate of *The Asia-Pacific Journal: Japan Focus*, regularly contributing articles including "Kurihara Sadako, 1913-2005", 3 no. 3 (28 March 2005), with his English translation of Kurihara's poem entitled "Hiroshima and the Emperor's New Clothes". <https://apjff.org/-Richard-Minear/1575/article.html>.

¹⁴ Article 9 categorically prohibits Japan from engaging in warfare.

¹⁵ Yasuko Claremont, *Citizen Power: Postwar Reconciliation* (Sydney: The Oriental Society of Australia, Inc., 2017), 102.

¹⁶ The Hiroshima Panels (*Genbaku-zu*—the Atomic Bomb Paintings) are a series of fifteen panels painted over a period of 32 years (1950-1982). Each panel has six folding sections and measures 180cm x 720cm. The panels depict the consequences of the atomic bombing of Hiroshima and Nagasaki, as well as other nuclear and

war disasters.

¹⁷ Shikoku Gorô (1924-2014), artist and poet, was born in Hiroshima. At the time of the atomic bombing he was in a POW labour camp in Siberia. When he returned to home in 1948 he was shocked by the news of his brother's death in the atomic bombing. Shikoku then made up his mind that he would dedicate his life to peace movements in Hiroshima.

¹⁸ Tsuboi Shigeji, 1897-1975, was an influential leftist modernist poet. His wife, Tsuboi Sakae, 1899-1967, was a writer famous for her novel, *Nijūshi no Hitomi* (Twenty-Four Eyes) based on school life on Shōdo-shima (Island of Shōdo) where both of them were born and raised.

¹⁹ Twelve American POWs were killed in the atomic bombing in Hiroshima and nine in Nagasaki. Mori Shigeaki, *Genbaku de shinda beihei hishi* (The Secret History of American POWs who were Killed by the Atomic Bombing) (Tokyo: Shio Shobō Kojin-sha, 2016).

However, as early as 1951 the Marukis, had depicted two American airmen in handcuffs on Hiroshima Panel No. 4, *Niji* (Rainbow).

²⁰ Maruki Iri and Akamatsu Toshiko, *The Hiroshima Panels* (Sydney, NSW: Edwards & Shaw, 1958).

²¹ The Hiroshima Memorial Museum holds the database commonly known as *Shimin no e* (Citizens' paintings). http://a-bombdb.pcf.city.hiroshima.jp/pdbe/search/col_pict.

²² Käthe Kollwitz (1867-1945) a German artist whose paintings, sculpture and woodcuts depict the effects of poverty and war on the working class.

²³ *Kenchiku Zasshi* 64, no. 756 (October 1949): 42.



NUCLEAR FREE VISION – THE ART OF ANTI-NUCLEAR ACTIVISM

DIMITY HAWKINS

Since the dawn of the nuclear age, there has been resistance to nuclear weapons and nuclear projects. The sheer scale of destruction that these weapons represent has stirred the public conscience.

Artists have flocked to interpret the nuclear age, responding in music, painting, photography, dance, spoken and written word, film and more. In graphic detail they have rendered the bombings of Hiroshima and Nagasaki, some working from first-hand memories, others from the stories handed on, or passed down, through generations. Much art has also been inspired by the testimonies of survivors of nuclear testing—as well as those from lands charred and oceans poisoned by these experiments—to break through pervasive silences imposed on unwilling communities by the nuclear perpetrators. Cradle to grave nuclear projects—from uranium mining to waste dumping, with nuclear accidents and near misses in between—have also sparked the artistic imagination. In turn, the visions of artists have illuminated and focused attention on these issues, often positioning audiences as eyewitnesses to the dire consequences of the nuclear age.

The same flexibility of thought and adept application of story that feeds the artist is food, too, for many activists. With over 13,000 nuclear weapons still in the world today, and an acute understanding of global existential threats again front of mind, art and activism continue to strive to raise awareness and provide a catalyst for change.

Artists and activists continue to interpret the nuclear malaise, seeking to expose and shift narratives around the risks of modern nuclear weapons and projects. For many, the boundary separating these twin identities of artist and activist is as fine as the most delicate spider web.

ACTIVISM AS ARTFORM

Much like artists, activists in the nuclear space seek truth and to challenge perspectives, to excite and invite conversation. While many artists self-identify as activists in their own right, nuclear free activism can also be its own artform. Too often in Australia, however, activism is viewed with suspicion. Many activists find our voices relegated to the margins, even when we speak on issues that affect billions. Or, our careful work is stripped of the status of expertise, even when it is grounded in research, careful analysis and deep consultation. Our creative efforts to educate are often degraded as mere propaganda, rather

than being recognised for what they are—artful communications.

Witness the colourful street art and performance offerings across generations of protest movements. See the banners painted in rich colour, carried with pride by young and old. See too, the curated materials offered in education resources, the use of symbols and graphics that highlight this most complex of stories in visual simplicity. Listen to the poetry in the storytelling that urges change, that begs for the use of reason to end the nuclear madness. Listen to the songs sung on picket lines, the chants roared in marches, the videos or speeches made to appeal to the hearts and minds of the observer, the audience and the public. All of it can be seen as art in one form or another.

In weaving together the evidence provided by affected communities and science, nuclear activism seeks to draw in aspirational visions that reach beyond the status quo, strives for creation over destruction. It is not just the ‘protest against’, but the ‘work towards’. By challenging imposed doctrines and exposing abnormal ‘norms’, activists seek to inspire and inform, to provoke and, occasionally, to aggravate. Activism and art often intersect, endeavouring to reflect back to society things that society would sometimes prefer not to see.

THE MANY FORMS OF STORY

There are times when art can stop us in our tracks. For example, I have vivid memories of the first time I came across the work of Yhonnice Scarce, Kokotha and Nukunu glass artist, whose breath-taking artwork *Thunder Raining Poison* was in the Defying Empire exhibition in 2017.¹ Thousands of exquisite glass yams are suspended in a cloud over five-metres high—shockingly beautiful and devastating at once. Sparkling, singing in the gentle wake of people passing through the room, they ring out a fallout story that successive Australian and British governments have attempted to marginalise or silence.

Many artists are significant players in raising the awareness of nuclear histories and threats. The work of Anangu Pitjantjatjara artist and healer Betty Muffler is another example. Her work *Ngangkari Ngura (Healing Country)* explores the impacts of the nuclear bombings at Emu Field and Maralinga, that good country that still carries the sadness. In 2020, her artwork made the cover of *Vogue* magazine,² and her works are held in the collections of the Australian War Memorial³ and other major galleries. While her art has achieved global acclaim, she speaks with the quiet authority of a testing survivor, reminding

people of the strength of the people who made it through, the terror of these weapons and our responsibility to country.

Hibakusha artist Junko Morimoto survived the bombing of Hiroshima as a child. In her illustrated book *My Hiroshima*,⁴ Junko recalled her memories of that day and her town, through which seven beautiful rivers flowed. In presentations at conferences and events, she frequently shared her experiences of the impact of the bombing, offering remembrances of that day, sometimes while painting during live performances. One such painting, rendered at a public event in Melbourne in 2012,⁵ is included in the *Art and Activism in the Nuclear Age* exhibition. Before her passing in September 2017, Junko wrote to then Prime Minister, Malcolm Turnbull, explaining that she had survived hell on earth and urging him to sign the new UN Treaty on the Prohibition of Nuclear Weapons.⁶

Nine Martu artists of Western Australia tell the story of resistance to uranium mining in the stunning artwork *Kalyu*.⁷ The Martu artists built an unusual collaboration with prominent British transgender musician Anohni, who joined them in a long walk to protect country from uranium mining in 2016, using her notoriety to draw attention to this remote, out-of-sight-out-of-mind struggle.

The examples of artists making statements on nuclear histories and harms are many. Albert Tucker, in Japan as an official war artist in 1947, captured scenes of the devastation in Hiroshima and Nagasaki in haunting watercolour, just months after the bombings.⁸ In the 1950s, Japanese artists combined painting and poetry to create street posters that described nuclear horrors, in defiance of the US Press Codes that censored reporting of the impacts of the bombings.⁹ On the streets of Australia in the 1980s, *Tin Sheds* artists like Pam Debenham plastered walls and walkways with vivid screen printed posters that demanded an end to the testing of nuclear weapons in the Pacific.¹⁰ Two of her posters are included in the exhibition. Songwriters and poets from the Marshall Islands, such as Darlene Keju in the 1970s and 1980s,¹¹ and Kathy Jetnil Kijiner now¹², build understandings of nuclear harm through their powerful words. The nuclear hand symbol, developed by Australian artist Kathleen McCann for the solidarity protest movement against the Jabiluka uranium mine in the 1990s, has been adopted and adapted by anti-nuclear campaigns across the globe.¹³ Drawings, paintings, photographs and stories of the Yalata and Oak Valley communities are found within the award winning children's book, *Maralinga: the*

Anangu Story.¹⁴ The iconic photographs captured in disarmament events by UK documentary and portrait photographer Edward Barber tell of a generation of protest.¹⁵ The insightful and immersive work of Australian photographer Jessie Boylan explores the experiences of whistleblowers, the lands and peoples affected by the British bombings in Australia, stories of resilience and hope.¹⁶ The examples of nuclear story telling and resistance in art are many.

“THE VERY HEART OF WHITENESS”

Arundhati Roy once described nuclear weapons as the “purveyors of madness”, an ultimate coloniser, “the very heart of whiteness”.¹⁷ She described the ways these weapons have been buried, like meat hooks, deep in the base of our brains. She speaks of how they control our behaviour, pervade our thinking, and administer our societies. In both activism and art, the lived experience of people whose lands and oceans have been most directly impacted are increasingly recognised as having primacy in the story telling. The people and places that have borne witness to the mining, manufacturing and development projects that enabled nuclear weapons—along with the use and testing of these weapons—will continue to face an intergenerational burden of nuclear waste, along with complex health and environmental impacts. Nuclear colonialism is a persistent and insidious force across our region; it deserves to be challenged by conversation, recorded in documentation, and the suffering inflicted on communities illuminated by memorialisation. Only through fearless examination can its hold be broken.

Recognising the centrality of both the humanitarian and environmental crimes that have been committed by a rabid nuclear and military industrial complex, many activists and artists have drawn on the lived experience of others to shine a light on their causes and illustrate their stories. However, they can run the risk of replicating colonialist practices by marginalising or disembodimenting those experiences (sometimes inadvertently, sometimes carelessly) overriding cultural sensitivities in the quest for a compelling message. Misappropriation of the stories and images of people affected by nuclear projects globally has at times compounded trauma or complicated the control of narratives. In the rush to produce or perform, some fail to pay attention to the intellectual and cultural rights of those who hold those stories. Protocols are evolving that seek to establish appropriate cultural, intellectual

and property rights in the art world,¹⁸ as well as academic research.¹⁹ Similar protocols to recognise Indigenous knowledges, creations and story—which firmly ground collaborations in mutual agreement, respect and reciprocity—are being developed across activist communities working on nuclear issues. It is complex and nuanced work that needs to be undertaken with deep listening and enacted with informed consent. Such work aims to shift understandings, seeking to balance or rebalance art and activist practice, and replace long-dominant, entrenched colonial practices.

Community projects that build nuclear literacy are often fed by collaborations with activists and artists, constructing systems of cultural education in order to offer ways to commemorate, collaborate, respectfully memorialise and pay tribute to the victims and survivors of nuclear harms. By highlighting the many examples of nuclear resistance and community resilience, not only by bearing witness to nuclear travesties, we can help move the world towards nuclear abolition.

SHIFTING IMAGES

In the decades immediately following the first use of nuclear weapons, artists and activists generated many dark and dystopian imaginings. Protests rang out against the perpetrators of nuclear harms. At times the more vivid the stories or artworks were in their portrayal of the nuclear violence, the more they were seen as effective. The anger in response to nuclear crimes was palpable. The desire to document nuclear harms—or to jolt the public into taking the action required to end the use of nuclear weapons—saw sometimes raw and shocking images dominate the spaces of both art and activism.

But anti-nuclear protest movements also employ powerful symbols as visual resistance. The peace symbol, for example, is a clever adaptation of the semaphore symbols for N and D, representing nuclear disarmament. UK artist Gerald Holtom offered this to a peace protest for the Campaign for Nuclear Disarmament in 1958. While the symbol was firmly founded in the early activism of the anti-nuclear movement, it became endemic across all peace movements. British artist Peter Kennard followed this in the 1980s with a series of posters, which included the famous *Broken Missile* poster. This poster in turn became the inspiration for activist Dr Bill Williams and designer Neil Campbell to create the logo of the International Campaign to Abolish Nuclear Weapons

in the mid-2000s, the peace symbol locking in place a missile split in two, now a widely recognised symbol of a global movement. Each of these symbols was designed to engage and empower global conversations and to represent the provocations that mobilised these movements.²⁰

New generations of artists and activists are discovering the stories of nuclear menace, not only those of the past but those threatening the here and now. In so many cases, the lines between artist and activist are ambiguous at best—boundaries that are often porous or artificial. Activism, like so much of life, is in itself an artform.

ENDNOTES

¹ Yhonnie Scarce, *Thunder Raining Poison*, 2015. Installation, glass, wire, metal. National Gallery of Australia collection. <https://nga.gov.au/defyingempire/artists.cfm?artistirn=42884>.

² Betty Muffler, *Ngangkari Ngura (Healing Country)*, 2017. Acrylic on linen.

Australian War Memorial collection. <https://www.awm.gov.au/collection/C2605509>.

⁴ Junko Morimoto, *My Hiroshima* (Sydney: Hachette Australia/Lothian Children's Books, 2014).

⁵ ICAN Australia, *Black Mist: The Impact of Nuclear Weapons on Australia*, 2014, 12–13. <https://icanw.org.au/wp-content/uploads/BlackMist-FINAL-Web.pdf>.

⁶ ABC News. "Junko Morimoto, Author of *My Hiroshima*, urged Malcolm Turnbull to sign nuclear weapon ban treaty", 21 September 2017. <https://www.abc.net.au/news/2017-09-21/junko-morimoto-urged-turnbull-to-sign-nuclear-weapons-ban-treaty/8969046>.

⁷ Martu Artists, *Kalyu*, 2014. Polymer paint on linen. Museum of Contemporary Art collection. <https://www.mca.com.au/artists-works/works/2014.68/>.

⁸ Albert Tucker, *Hiroshima*, 1947. Watercolour on paper. Australian War Memorial collection. <https://www.awm.gov.au/collection/ART29483>.

⁹ Tōge Sankichi, and Shikoku Gorō, *It Was the Smell of a Woman's Hair Burning*, 1950–1953. In Ann Sherif et al, *Popular Protest in Post War Japan: The Antiwar Art of Shikoku Gorō*, Oberlin College Libraries 2020. <https://scalar.oberlincollegelibrary.org/shikoku/a-womans-hair-burning?path=street-poem-posters>.

¹⁰ Pam Debenham, *No Nukes in the Pacific*, 1984. Screenprint on paper. Australian War Memorial collection. <https://www.awm.gov.au/collection/C262374>.

¹¹ Giff Johnson, *Don't Ever Whisper: Darlene Keju; Pacific Health Pioneer; Champion for Nuclear Survivors* (Charleston, South Carolina: CreateSpace, 2013).

¹² Dan Lin and Kathy Jetnil-Kijiner. *Anointed*. Short film. (Pacific Storytellers Cooperative, 2018). <https://vimeo.com/264867214>. See also, www.kathyjetnilkijiner.com.

¹³ Kathleen McCann, "Sign Language: The Story of the Jabiluka Symbol", *30 Years of Creative Resistance* [electronic resource] (Fitzroy: Friends of the Earth, 2004).

¹⁴ Yalata and Oak Valley Communities, with Christobel Mattingley, *Maralinga: The Anangu Story* (Crows Nest, NSW: Allen and Unwin, 2012).

¹⁵ Edward Barber, <https://www.edwardbarber.net/work#/peacesigns/>.

¹⁶ Jessie Boylan, <http://jessieboylan.com>. See also, <https://atomicphotographers.com/photographers/jessie-boylan/>.

¹⁷ Arundati Roy, *The Cost of Living: The Greater Common Good and the End of Imagination* (London: Flamingo, 1999).

¹⁸ Australia Council, *First Nations Cultural and Intellectual Property in the Arts*. <https://www.australiacouncil.gov.au/programs-and-resources/Protocols-for-using-First-Nations-Cultural-and-Intellectual-Property-in-the-Arts/>.

¹⁹ University of Melbourne Library Guides. *Indigenous Knowledge Research: Indigenous Cultural and Intellectual Property* [ICIP protocols], <https://unimelb.libguides.com/c.php?g=932536&p=6741081>.

²⁰ Read more on how these artworks interact: https://www.icanw.org/a_movements_symbol_for_a_world_without_nuclear_weapons.



NUCLEAR ACCIDENTS

JUDITH KEENE

NUCLEAR ACCIDENTS

Nuclear accidents can occur in a military environment or as part of the commercial production of nuclear energy. The consequences of both include the potential for contamination by radioactive materials—plutonium, uranium, tritium and caesium. Whether military or civil, all nuclear accidents raise the overall level of nuclear risk and therefore pose a threat to civilian life and to the peaceful prosecution of international relations. This essay examines the context of major nuclear accidents and their consequences in the commercial production of nuclear energy and examines three important accident events that are represented in this exhibition.

In the last 75 years of the operation of commercial (that is, non-military) reactors, there have been eleven major nuclear accidents,¹ some well-known and others less so. Eventually most of the reactors were closed down or decommissioned, with uneven success in the attempt to clean up the contamination left behind by the toxic materials.

The list of these events with important details of INES ratings and subsequent outcomes include:

NRX Chalk, Canada, December 1952, INES Level Five [entombed]

Windscale, UK, October 1957–1979, INES Level Four [entombed, decommissioned];

Fermi 1, USA, 1966, INES Level Four [both decommissioned];

Lucens, Switzerland, 1969, INES Level Four [decommissioned];

Three Mile Island, Harrisburg, USA, March 1979, INES Level Five [decommissioned];* poster below.

Saint Laurent, France, 1969 & 1980, INES Level Four [decommissioned];

Chernobyl, 1986, INES Level Seven [entombed];

Vandellós, Spain, 1986, INES Level Three [decommissioned];

Greifswald, East Germany, December 1989 INES Level Four [decommissioned];

Fukushima, Japan, 2011, INES Level Five, later Level Seven [decommissioned].

**WHAT DO YOU DO
IN CASE OF
A NUCLEAR ACCIDENT.**



**KISS YOUR CHILDREN
GOOD-BYE.**



Figure 1. "Kiss Your Children Goodbye". Widely-circulated poster opposing uranium mining. Attributed to People for Nuclear Disarmament (Australia). c.1978-1980. University of Sydney Archives: Posters, Tin Sheds Gallery, 1014.¹



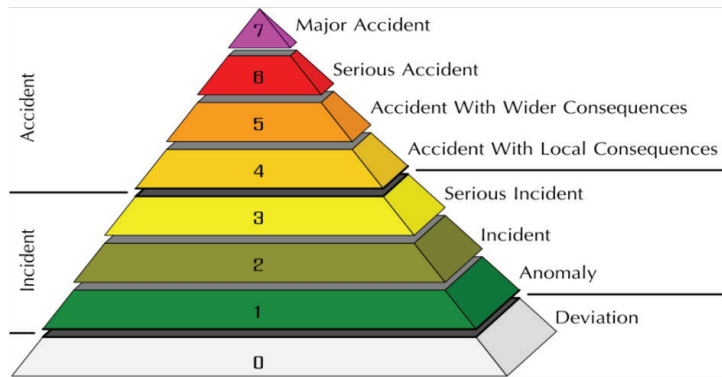
Figure 2. "The Harrisburg Hop". Poster for fundraising concert, May 1979. Australian movement to stop uranium mining. University of Sydney Archives: Posters, Tin Sheds Gallery, 1014. The Three Mile Island meltdown, the largest nuclear accident in the US, has been widely used by anti-nuclear groups as a symbol for the inherent dangers in nuclear power production.⁵

THE INTERNATIONAL NUCLEAR AND RADIOLOGICAL EVENT SCALE (INES)

The International Nuclear and Radiological Event Scale (INES) was devised in 1990 by the International Atomic Energy Agency (IAEA) to provide a numerical measure of the significance and comparative severity of certain nuclear accidents.⁴ The application of the INES is a voluntary commitment among the 173 members of the IAEA and covers events at facilities and activities involving radiation sources and incidents that have resulted in a release of radioactive material into the environment and/or in the accidental radiation exposure of workers and the public. The scale of the INES is logarithmic in that each ascending level represents an accident approximately ten times as destructive as the level below. It begins with the lowest impact at Level One, in an “anomalous event”, indicating minor problems with safety devices or transportation, and while the highest assignment of Level Seven represents a “major accident”, involving a hazardous release of radioactive material with widespread health and environmental consequences.

The INES has quite specific design limitations. It has only ever been intended for use in non-military applications, relating to the evaluation of the safety aspects of a defined event. It was not designed, and has never been used, as a diagnostic tool with which to unearth individual or collective culpability. Nor was it conceived as a way of assessing or comparing safety performances between facilities, organizations or countries. Also, it is not a tool to trigger emergency response actions. Rather, it operates as an assessment process after the event, and in certain cases the assessment of the level of safety risk can be later changed, such as with Fukushima for which, after careful re-examination, the original INES rating of the event was scaled up to Level Seven. The main purpose of the INES is to provide a numerical and broadly historical measure of the severity of nuclear catastrophes and in a format that can be communicated to the public. This communicative purpose is not unlike the role played by the Richter scale, devised in 1933 and using seismological measures, though the qualitative and changing elements on which the INES assessments rely are far more subjective and flexible than are the Richter’s seismic algorithms. Some critical observers have claimed that the INES’s main game is in fact to support the public relations mission of the IAEA.

Figure 3. A representation of the INES levels. Created by Silver Spoon. Wikimedia Commons.



THREE NUCLEAR ACCIDENTS IN THIS EXHIBITION WINDSCALE, NOW SELLAFIELD, CUMBRIA, UK (OCTOBER 1957)

Windscale, near the town of Sellafield on the Northwest coast of Britain, was the site of the British government's first initiatives in creating a post-war atomic weapons industry.⁵ Located on an ex-World War II munitions factory site, by the early 1950s two nuclear reactors, manufacturing the first British weapons grade plutonium-239, were central to the UK nuclear weapons programme. It is perhaps worth noting that the plutonium brought to Australia to be used in the British nuclear tests at Maralinga in the mid-1950s was processed at Windscale. In October 1957, a major fire broke out in the chimney of one of the reactors and the encompassing conflagration was extinguished only after three days. By this time radioactive fallout of plutonium and smaller but significant amounts of the highly dangerous radioactive isotope polonium-210 and radioactive iodine isotopes had been released. With an INES rating of Level Five the Windscale fire remains the most serious nuclear accident that has taken place in the United Kingdom. The dispersed contamination spread widely, into the Irish sea and across the UK and Europe. In Cumbria and the northern areas, the presence of released iodine had a major impact on dairy farming and the milk export industry, necessitating a significant shut down. In contrast, however, there was no effort to evacuate or offer protection to the population surrounding Windscale. The British government, keen both to maintain post-war links with the US atomic industry and to forestall any home grown anti-nuclear sentiment, minimized publicity about the event. Recent studies have provided estimates of the injury and deaths caused by Windscale that range from 100 to 200 individuals over the intervening years.

After the fire, the damaged reactor rods were removed and the structure

of the destroyed reactor was encased in a “bioshield”. The remaining reactor, however, continued to generate power under the control of British Nuclear Fuels Ltd (BNFL) and in the 1960s along with a more up to date reactor, began to operate as a reprocessing facility for English nuclear fuel and spent nuclear rods from elsewhere. In 1981, in an effort to sever the negative association of Windscale with the nuclear accident, BNFL changed the name of the Windscale plant to Sellafield. But to no avail. It remained a focus of public concern caused by a series of minor and more than minor mishaps. The Danish and the Irish governments complained that the nuclear reprocessing plant was releasing contaminated water into the Irish Sea; the Irish government finally attempted to mount a case against BNFL in the United Nations. The company also fell foul of the UK Atomic Energy Authority over a large scale spill of 160 Kgs of plutonium caused by an unrecognized broken pipe. By 2010 Sellafield had been taken over by the UK Nuclear Decommissioning Authority that set about overseeing the closure of the nuclear reprocessing plant and its infrastructure. Although this was achieved, public access to the areas around the plant is discouraged.

As part of the events surrounding this exhibition, the Australian artist and filmmaker of nuclear landscapes and legacies, Marilyn Fairskye will introduce her work with a screening of her Windscale documentary, *Radiant*. See <http://www.fairskye.com/index.html#photo>.

CHERNOBYL NUCLEAR POWER PLANT ACCIDENT (APRIL 1986)

In the former Ukrainian Republic of the Soviet Union on 26 April 1986, a catastrophic explosion in the Number Four Reactor of the Chernobyl nuclear power plant, later assessed as INES Level Seven, near the city of Pripyat, demolished the reactor, exposing the core and blasting fragments of radioactive material and radioactive clouds of iodine and caesium radionuclides, over the surrounding region and beyond. Subsequently, the reactor was enclosed in a steel shield and surrounded by a 4,000 square kilometre uninhabited Exclusion Zone. In total, some 150,000 square kilometres of (what is now) Belarus, the Russian Federation and the Ukraine, suffered major contamination. At the same time, radioactive fallout was carried by winds over much of the Northern Hemisphere.

Given the scale of the populations involved and the area of contamination, information about the consequences for health and mortality can only be

broadly estimated as affecting between 4,000 and 27,000 people. In the weeks and months that followed the Chernobyl disaster, hundreds of thousands of firefighters, engineers, military troops, police, miners, cleaners and medical personnel were sent into the area in an effort to reduce the spill and contain the spread of further radioactive toxicity. These brave people—termed “liquidators”—were later assigned a special status and entitlements to extra healthcare and monetary benefits. Official registries from that time indicate that about 600,000 people were granted liquidator status. As well, there were some 400,000 people living in more contaminated areas, of whom, according to some estimates, 116,000 were forcibly evacuated from what became the Chernobyl Exclusion Zone.

International studies have documented the extensive impact of the stress and anxiety induced by the nuclear accident and the increase in serious psychological problems among the affected populations. In many cases, it was compounded by the local economic depression that followed the break-up of the Soviet Union and by their forced repatriation out of the area around Chernobyl. An expert international group has made projections to provide a rough estimate of the possible health impacts of the accident and to help plan the future allocation of public health resources.⁶ It has been postulated that a further increase in cancers and associated illness could result in several thousand fatal cancers, in addition to perhaps 100,000 cancer deaths expected in the affected populations from all other causes. The effects of the soil contamination on agricultural land, agricultural production and farm animals will last for many decades. Included in the exhibition are three major works by Marilyn Fairsky, photographs of the landscape around Chernobyl. Part of a series *Plant Life*, they speak to the challenge of representing the invisible harms of radiation.

Despite the programs of aid and reconstruction generated by the United Nations and other international organisations, it is clear that an accurate understanding of the real state of physical injury and illness will not be known for many years. In light of Chernobyl’s catastrophic consequences, the assessment of the deputy director general of the National Research Centre for Radiation Medicine (NRCRM) in Kiev is telling. Viktor Sushko described the Chernobyl disaster as the “largest anthropogenic disaster in the history of humankind”.

FUKUSHIMA DAIICHI ACCIDENT, JAPAN (MARCH 2011)

On 11 March 2011, the strongest earthquake ever recorded in Japan was centred 130 kilometres offshore in Miyagi prefecture, on the eastern coast of Honshu Island (the main land mass of Japan). A complex double-quake of about three minutes duration triggered a massive tsunami extending 650 kilometres north-south. The waves that reached 40 to 46 feet high arrived some 50 minutes after the earthquake, inundating 560 kilometres, resulting in a human death toll of some 19,500 people and destroying over a million buildings along the Pacific Coast. Reactors at the Fukushima Daiichi Plant, which were close to the earthquake and were meant to pump cooling water through the reactor, were destroyed. As a result, three cores melted down and over the following three days there were several hydrogen explosions, as well as the release of nuclear material into the environment. On the International Nuclear Event Scale (INES), the Fukushima accident was rated at the highest level of seven, an assessment equal to that of Chernobyl, indicating an accident causing widespread contamination with serious health and environmental effects.

The management of the crisis in Japan was bedevilled by miscommunication, a slowness to act and an overall lack of leadership.⁷ The Tokyo Electric Power Company, the reactor's owner, had instructed officials in charge of the reactor not to describe the reactor damage using the word "meltdown", even though they were aware that 25-55% of the fuel had been damaged and the threshold of 5%, for which the term "meltdown" was appropriate, had been greatly exceeded. TEPCO's "reckless" attitudes and "wilful negligence towards safety" were highly criticised in the Japanese government's reports. Initially, the government set a "prohibited access area" of three kilometres (1.9 miles), evacuated 170,000 people and urged others in an "on-alert area" of 3-20 kilometres (1.9-12.4 miles) to stay indoors. A few days later, a 20-kilometre exclusion zone was announced, resulting in more forced roadblocks and evacuations. The earthquake and tsunami damaged or destroyed more than one million buildings and at least 470,000 people needed assistance and housing.

Faced with over a year of chaos and a lack of progress, the Japanese National Diet appointed the Fukushima Nuclear Accident Independent Investigation Commission (NAIIC) in July 2012, with a brief to inquire into all aspects of the Fukushima disaster.⁸ The Commission rejected out of hand

the notion that the disaster had been caused by a freak of nature, instead concluding that the nuclear disaster was “manmade”. The direct causes of the accident were all foreseeable prior to 11 March 2011. The commission chairman, in a searing assessment, argued that this was a disaster “Made in Japan” in that the fundamental cause of the disaster was to be “found in the ingrained conventions of Japanese culture”, contending that, at a time when Japan’s self-confidence was soaring, a tightly knit elite with enormous financial resources had diminishing regard for anything “not invented here”. This attitude was “reinforced by the collective mindset of Japanese bureaucracy” for whom the first duty was always to put the interests of the organisation ahead of the paramount duty to protect public safety. This also meant that Japan’s nuclear industry had avoided the critical lessons of Three Mile Island and Chernobyl; it had become accepted practice to resist regulatory pressure and cover up small-scale accidents. The outcome of this mindset was the disaster at the Fukushima Daiichi Nuclear Plant.

The report also found that the Fukushima Daiichi Nuclear Plant was incapable of withstanding the earthquake and tsunami. Therefore, TEPCO, regulatory bodies and the government, who had strongly promoted the nuclear power industry, had all failed to develop the most basic safety requirements. These included assessing the probability of damage, making prior preparation for the containment of likely collateral damage in an anticipated disaster, and developing prior evacuation plans for the public in the case of a serious release of radiation. On 12 October 2012, TEPCO admitted that it had failed to take stronger measures to prevent disasters, for fear of inviting lawsuits or giving cause to the protests against its nuclear plants by the anti-nuclear movement.

In March 2017, a Japanese court ruled that negligence by the Japanese government had led to the Fukushima disaster, due to its failure to use its regulatory powers to force TEPCO to take preventive measures. The Maebashi district court near Tokyo awarded ¥39 million (US\$345,000) to 137 people who were forced to flee their homes following the accident. On 30 September 2020, the Sendai High Court ruled that the Japanese government and TEPCO were responsible for the disaster, ordering a payment of US\$ 9.5 million in damages to residents for lost livelihoods. As well, the IAEA has made a number of recommendations to improve Japanese nuclear safety and security that are being implemented.

As at March 2018, the number of evacuees remaining out of their

homes had been reduced to around 50,000. However, large quantities of radioactive particles from the Fukushima incident, including iodine-131 and caesium-134/137, have been detected around the world, including in the Pacific Ocean and the Gulf of Alaska, with substantial levels in California. In findings that echo the reports into the mental health of those living and working in Chernobyl, experts on the ground in Japan have noted that mental health challenges are among the most pressing and significant issues. Stress, such as that caused by dislocation, uncertainty and concern about unseen toxicants often manifest in physical ailments, such as heart disease. After a nuclear power plant disaster, residents of the affected areas are at a higher risk for mental health illnesses such as depression, anxiety, post-traumatic stress disorder (PTSD), medically unexplained somatic symptoms, and suicide. These mental health illnesses, among others, have been notable among Fukushima residents. As in Chernobyl, there has been on-going stigma in Japan regarding those affected by radiation as well as a distinct distrust of government, public health authorities, and the Tokyo Electric Power Company. Again, as in the Chernobyl population, the sectors at the highest risk for mental health illnesses are the nuclear power plant workers, mothers with infants, children, farmers whose contaminated land precludes their return to pre-accident forms of farming and middle-aged unemployed males.

ENDNOTES

¹ World Nuclear Association: Safety of Nuclear Power Reactors: Appendix 2 "Serious Nuclear Reactor Accidents", [www/world-nuclear.org](http://www.world-nuclear.org).

² We have in good faith and with diligence sought the copyright owner of this poster and will acknowledge that person as the owner if they identify themselves. The poster is reproduced here in the interests of public information.

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⁴ International Atomic Energy Agency, "International Nuclear radiological Event Scale" <https://iaea.org>.

⁵ Peter Walker, "From Windscale to Sellafield: a history of controversy," *The Guardian*, 18 April 2007.

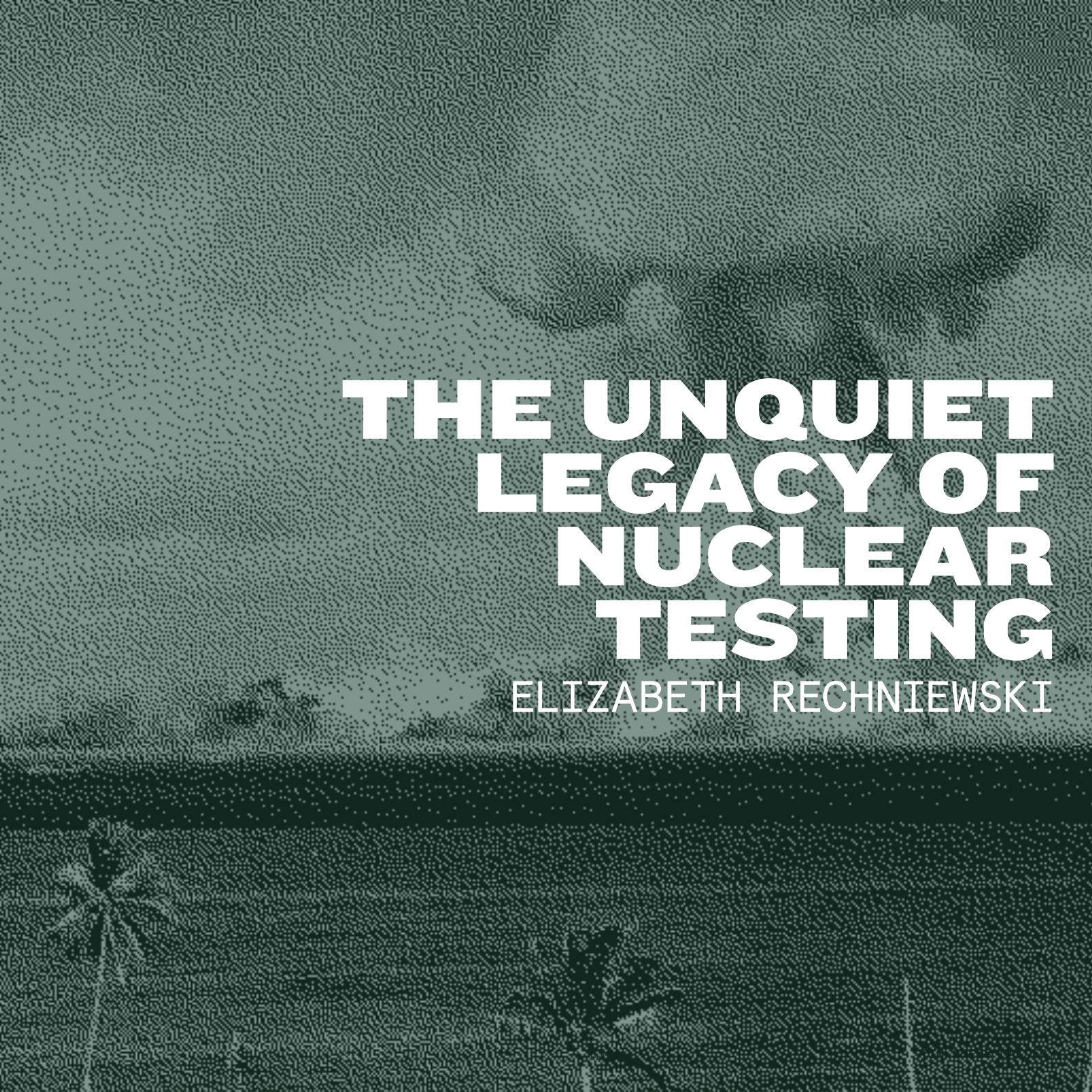
⁶ For a comprehensive study of Chernobyl and affected populations, see the International Atomic Energy Agency Chernobyl Forum Report, *Chernobyl's Legacy: Health, Environmental and Socio-Economic Impact* (Vienna, IAEA in Austria, April 2006).

⁷ Fukushima Daiichi Accident. Report by the Director General, of the International Atomic Energy Agency (Vienna, IAEA, 2015), <https://www-pub.iaea.org/mtcd/publications/pdf/pub1710-reportbythedg-web.pdf>.

⁸ National Diet of Japan, *The Official Report of The Fukushima Nuclear Accident Independent Commission*, (July 2012). English translation, [www/inis.iaea.org](http://inis.iaea.org).



Figure 4. "The bags of radiation waste (contaminated soil) were mounted in the cabbage fields after de-contamination. 21 February 2017, Iitate village, Fukushima." Photograph by Masaya Noda.

The background of the entire image is a grainy, black and white photograph. It depicts a tropical beach scene. In the foreground, there are several palm trees, some of which are slightly out of focus. The middle ground shows a calm body of water, likely the ocean. The sky is filled with large, dark, and dramatic clouds, suggesting an overcast or stormy day. The overall texture of the image is very grainy, giving it a vintage or historical feel.

THE UNQUIET LEGACY OF NUCLEAR TESTING

ELIZABETH RECHNIEWSKI

THE UNQUIET LEGACY OF NUCLEAR TESTING

I would say that the story of nuclear [testing] will never end. We know when it started but we don't know when it's going to end. It seems to me there is no ending because of what we know exactly of the situation, of what we know about the health and about the environment is still very very alarming for the future generations.

Roland Oldham, President of Moruroa e tatou,
Nuclear Test Veterans' Association based in French
Polynesia, 3 July 2017.¹

On 16 July 1945, the Manhattan Project culminated in the Trinity test, conducted in the Jornada del Muerto desert, about 56 kilometres south-east of Socorro, New Mexico. On 15 April 2020, US officials claimed that China may have recently conducted low-yield nuclear weapon tests at its Lop Nur test site.²

In the 75 years between these two dates, over 2000 nuclear devices have been tested, some 520 atmospheric nuclear explosions (including eight that were detonated underwater), the remainder underground, by the eight acknowledged nuclear-armed nations: United States, Russia, United Kingdom, France, China, India, Pakistan and North Korea, a group to which it is believed that Israel also belongs.³ While these totals may be arrived at with some precision, the extensive and varied harms caused by the testing remain incalculable. All tests have resulted in "collateral damage" with devastating consequences to populations across the world, some of whose stories are told in this exhibition: the atomic refugees in the Marshall Islands;⁴ the high-profile case of the Lucky Dragon tuna fishing boat contamination; and the impact on Aboriginal communities at the Maralinga and Emu test sites.

Certain common features can be identified in the history of nuclear testing: nuclear imperialism; nuclear secrecy and irresponsibility; the long-term and wide-ranging legacies of the tests; and the localised and global protest movements the tests engendered.

NUCLEAR IMPERIALISM

Nuclear testing has been disproportionately imposed on already marginalised communities and sits within the definition of ‘necropolitics’, in which subordinated and vulnerable peoples are exposed to risks considered by central governments to be too great to be acceptable to politically empowered and (often) metropolitan populations. Thus the post-World War II imperial powers used their colonial territories, especially those that were geographically remote, for nuclear testing. Tilman A. Ruff highlights the fact that the Pacific Island territories have borne a “disproportionate burden of the health and environmental costs of nuclear weapons development and testing.” He estimates that more than 315 nuclear tests were conducted in the region by Britain, France and the United States between 1946 and 1996.⁵

Beginning in 1946, the United States used its newly acquired territory of the Marshall Islands as a nuclear test site leading up to, and continuing far beyond, the notorious 1954 Castle Bravo test. The British conducted their larger thermonuclear tests in their Pacific territories of the Gilbert and Ellice Islands (now Tuvalu and Republic of Kiribati, respectively): between May 1957 and September 1958, the British tested nine thermonuclear weapons at Malden Island and Kiritimati (Christmas Island) for Operation Grapple.⁶ Then, in 1962, Britain cooperated with the US on Operation Dominic, undertaking a further 31 detonations on Kiritimati.⁷

The tests that the British carried out on Australian territory between 1952 and 1963—including nine nuclear bomb tests in mainland South Australia at Maralinga and Emu Field, and three bomb tests at the Montebello Islands off the West Australian coast—also reflected a former colonial relationship. Some 550 experimental “minor” tests which occurred at Emu Field and Maralinga were hidden from the public at the time, and often excluded from British totals. Of these, the twelve “Vixen B” tests at Maralinga (1961–1963), that scattered over 22 kilos of plutonium around the Taranaki site, left the most contamination.⁸ The British prevented the Anangu people, the sovereign owners of this land (now represented by the Maralinga Tjarutja Council), from occupying or visiting their home throughout, and long after, the testing, with the final section of Maralinga “released” to traditional owners by the military in 2014. The lack of an adequate clean up and the deadly legacy of contamination continues to impact the health and way of life of the Maralinga Tjarutja.



Figure 1. Mima Smart and Rita Bryant, *Maralinga* banner detail, acrylic on canvas, full size 1.5m by 3m. First exhibited at Tandanya National Aboriginal Cultural Institute in 2016. Photograph by Paul Brown.



Figure 2. Rita Bryant and Mima Smart working on the banner. Photograph by Paul Brown.



Figure 3. Yalata artists (L-R) Mima Smart, Sharon Bryant and Missy Windlass in front of the collection *Life Lifted into the Sky*. Tandana National Aboriginal Cultural Institute *Nuclear* exhibition 17 September to 12 November 2016. Photograph by Ben Searcy.

One of the major displays in the exhibition consists of pictures from the series “Life Lifted into the Sky.” Created by women artists of Yalata (an *Anangu* community south of Maralinga), these images depict the impact of these tests on the local Indigenous communities.⁹

Yalata Womens’ Centre and other groups of Maralinga painters have been developing and sharing painting skills over many years. They have exhibited artworks locally, sold them via the Tjutjuna: Ceduna Aboriginal Arts and Culture Centre, included paintings and sculptures in the annual *Our Mob* exhibition, and their paintings have featured in the books *Maralinga: the Anangu Story* and, most recently, *Maralinga’s Long Shadow: Yvonne’s Story*.¹⁰

The paintings show the impact of the Maralinga bombs on people and country, as well as the role whitefellas played in the forced removals from the Ooldea mission to Yalata in 1951–1952, prior to the tests.¹¹ They also depict the temporary camps, the bush church, the roads, the railway line, the vehicles and the footprints that were all vital elements of one of Australia’s least-known migration stories.

French nuclear tests were also carried out in colonised territories. The first test, codenamed Gerboise Bleue, was carried out on 13 February 1960 at Reggane in French Algeria, followed by three more atmospheric tests. After Algerian independence in 1962, underground tests continued in the Algerian desert until 1966, in an area known as In Ecker. France then moved testing to the Pacific archipelago of French Polynesia where, between 1966 and 1996, 193 nuclear tests were conducted on the atolls of Moruroa and Fangataufa: 46 atmospheric tests between 1966 and 1974 and a further 147 underground from 1975–1996.

The Soviet Union and China demonstrated a different form of nuclear imperialism by imposing testing on minority populations in remote locations within home territories. Between 1949 and 1963 the Soviet Union detonated more than 110 nuclear weapons above-ground at the Semipalatinsk test site (the Polygon) in Kazakhstan, a territory designated an autonomous soviet socialist republic in 1936 but controlled from Moscow. Between 1955 and 1990, 130 more tests were conducted in the remote Arctic archipelago of Novaya Zemlya, home to the Indigenous Nenets people, who were forcibly removed for the testing program. In China, testing took place from 1964 to 1996 at its Lop Nur site in Xinjiang province, home of the minority ethnic population of the Uighurs: 23 atmospheric and 22 underground tests, 45 in total. Becky Alexis-Martin

identifies China's use of Uighur lands for nuclear weapons testing as a clear illustration of the "nuclear imperialism-necropolitics nexus".¹²

NUCLEAR SECRECY AND IRRESPONSIBILITY

For 30 years we lied to this people that the tests were clean. We lied and I was a member of that gang.

Edouard Fritch, President of French Polynesia,
November 2018.¹³

The nuclear powers have consistently attempted to conceal information about the environmental, economic and health impacts of the tests, with much information about the extent of the radiation fallout and the health impacts on local populations remaining classified to this day. When official reports are released, government agencies are often accused of minimising the level of radiation exposure and the ongoing effects on those who were originally exposed to the tests, as well as on subsequent generations. A recent report by investigative journalists and researchers at Princeton University estimated the radiation fallout from the atmospheric tests in French Polynesia to be two to three times higher than the official figures.¹⁴ Compensation for those affected is often non-existent or parsimonious, as paying compensation undermines claims made at the time about the harmlessness of the tests.

When Kazakhstan gained independence from the Soviet Union in 1991, officials from Moscow destroyed the health records kept by the clinic treating the local people.¹⁵ No official data has been released by China about the impact of its nuclear testing but, according to a 2009 article in *Scientific American*, the cancer rate in Xinjiang province is 30–35% higher than in the rest of China, with a disproportionate incidence of malignant lymphoma, lung cancer, leukemia, degenerative disorders and babies born with malformations.¹⁶

The US stands accused of deliberately exposing the population of Rongelap Atoll in the Marshall Islands to fallout in order to study its effects.¹⁷ The 1985 Royal Commission into the Australian nuclear tests concluded that, at best, the British authorities displayed a staggering indifference to the danger to the local people, its own personnel and those of Australia and New Zealand.¹⁸ The health of the populations concerned was threatened, not only by the direct

consequences of exposure to radiation, but by the extensive environmental impacts on their economy and society; the disruption to local agriculture and fishing practices as swathes of land and sea became unusable; and their displacement from traditional land with its associated cultural significance.

LONG-TERM CONSEQUENCES

In general, efforts to clean up testing sites have been wholly inadequate, leaving a legacy of highly contaminated tracts of land that further impacts subsequent generations. People following traditional lifestyles sustained by gathering and hunting of local foods, and living in housing made of local materials, have experienced increased long-term radiation exposure.¹⁹ At Maralinga, successive “clean ups” were so deficient that, according to a recent report, radioactive particles released during the tests remain highly reactive and can leach into groundwater, affecting plants, wildlife and humans.²⁰ Radioactive material from the underground testing site at Moruroa is feared to be leaking into the lagoon from cracks in the atoll.²¹

The impact of climate change, leading to more extreme weather events and sea level rise, threatens the security of the radioactive storage sites. An exemplification of the dangers posed by the combined effects of climate change and the remnants of nuclear testing is the concern that rising sea levels may breach the crumbling concrete Runit Dome in the Marshall Islands, a repository for nuclear waste.²² This enhanced threat is perhaps the most dangerous legacy of nuclear testing in the Pacific.

PROTEST MOVEMENTS

As one, the Pacific nations stand and say: Never again. ... It is a form of madness that we in the Pacific—the ocean that takes its name from the word “peace”—find incomprehensible. [W]e will always be on the side of those nations pressing for the dismantling of the world’s nuclear arsenals. Fijian Prime Minister Voreqe Bainimarama, 30 January 2015.²³



Figure 4. Atomic Bomb Testing in the Pacific. Alamy.

Figure 5. Photograph of The Lucky Dragon boat on display at the Tokyo Metropolitan Daigo Fukuryū Maru Exhibition Hall. Alamy stock photo.



On 1 March 1954, the Americans exploded a hydrogen bomb on Bikini Atoll, a test codenamed Castle Bravo. The blast was two-and-a-half times more powerful than had been estimated and a Japanese tuna fishing boat, the Daigo Fukuryū Maru, Lucky Dragon No. 5, was covered in fine white radioactive dust.²⁴ By the time the boat reached its home port, the crew members were sick with radiation poisoning and had to be hospitalised. Kuboyama Aikichi, the ship's radioman, died six months later, while the crew suffered lifelong ill-health. The Japanese media covered the incident extensively and the international press soon followed, raising awareness of the dangers not just of the blast itself but of the “fallout”—a new word that entered the global lexicon.

Just days after the Lucky Dragon returned to port, a Japanese town passed a resolution against the use of atomic bombs.²⁵ Within weeks, similar resolutions were adopted across Japan and, within a few months, around the world; the first “World Conference Against A and H bombs” was held the following summer in Hiroshima. The boat that triggered the first truly global protest movement of the modern era is now on display at the Tokyo Metropolitan Daigo Fukuryū Maru Exhibition Hall.

The Lucky Dragon incident is depicted in the bottom right-hand corner of

Taro Okamoto's *Asu no Shinwa* (The Myth of Tomorrow), 1967, on display in the exhibition.

As tests continued and expanded across the Pacific, they triggered strong protest movements against the dangers of radioactive fallout across the inhabited islands and the nuclear arms race. Opposition to the sale of uranium by Australia to countries with nuclear weapons was another subject of campaigning and an issue that continues to be contested to the present day.

The tests held in the Pacific fostered a growing sense of unity amongst Pacific Island nations as they gained their independence and began to join together to call for a ban on all testing. This resulted in the declaration of the South Pacific Nuclear Free Zone, the Rarotonga Treaty, that came into force in December 1986. Resistance in the Pacific reached a peak in the mid-1990s, when France recommenced testing in French Polynesia after a three-year moratorium. Here in Australia, churches, trade unions, academics, university students, women's groups and customary leaders actively opposed the tests through demonstrations, trade union bans and boycotts of French firms and products.

The exhibition displays several items that reflect the Pacific protest movements. The silk screen print below, by Wendy Black, plays on the Pacific-



Figure 6. Wendy Black, *Nuclear Free Pacific*, 1983. Chau Chak Wing Museum, University Art Collection, UA2014.706.

themed paintings by Paul Gauguin to compare the idyllic scenes he depicted with the looming presence of the tests.

Black was one of a number of artists based at the Tin Sheds gallery in Sydney in the 1970s and 1980s, who produced street art and posters protesting against the sale of uranium by Australia and nuclear testing in the Pacific, amongst many other issues. The exhibition includes two posters by Pam Debenham and one by Jan Fieldsend that further illustrate this prominent theme in the work of this community of artists. The University of Sydney archives acquired the Tin Sheds collection when the original building was demolished and holds hundreds of posters from the gallery.

ENDNOTES

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⁴ Patricia A. O'Brien, "75 Years After Nuclear Testing in the Pacific Began, the Fallout Continues to Wreak Havoc," *The Conversation*, 6 April 2021, <https://theconversation.com/75-years-after-nuclear-testing-in-the-pacific-began-the-fallout-continues-to-wreak-havoc-158208>.

⁵ Tilman A. Ruff, "The Humanitarian Impact and Implications of Nuclear Test Explosions in the Pacific Region," *International Review of the Red Cross* 899 (2016): 775-813, 779. The current article is indebted to the research undertaken by Ruff, one of the founders of The International Campaign to Abolish Nuclear Weapons (ICAN).

⁶ Not to be confused with the Australian territory of Christmas Island.

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¹¹ Catherine Speck, "ThunderRainingPoison: The Lineage of Protest Against Mid-

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¹² Becky Alexis-Martin, "The Nuclear Imperialism-Necropolitics Nexus: Contextualizing Chinese-Uyghur Oppression in Our Nuclear Age," *Eurasian Geography and Economics* 60, 2 (2019): 152-176, 158.

¹³ « Je ne m'étonne pas qu'on me traite de menteur alors que pendant 30 ans, nous avons menti à cette population, que les essais étaient propres ; nous avons menti, j'ai fait partie de cette bande ». <https://www.leparisien.fr/politique/dangerosite-des-essais-nucleaires-le-president-fritch-reconnait-avoir-menti-aux-polynesians-16-11-2018-7944420.php>

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¹⁶ Zeeya Merali, "Blasts from the Past," *Scientific American* 301, 1 (July 2009): 16-20.

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¹⁹ Ruff, "Humanitarian Impact," 802-3.

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²⁴ "1 March 1954, Castle Bravo," CTBTO, <https://www.ctbto.org/specials/testing-times/1-march-1954-castle-bravo/>.

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