

SEVENTY-FIVE YEARS ON:
AN ETHNOGRAPHIC EXPLORATION OF ORAL
HISTORIES ON THE ATOMIC BOMBING OF
HIROSHIMA

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ABSTRACT

This thesis explores the human experiences of the atomic bombing of Hiroshima since August 6th, 1945. Employing ethnographic approaches of participant observation, fieldwork, and narrative analysis, narrative accounts of thirteen research participants within cultural settings were examined. This exploratory research attempts to build on awareness and understandings of survivor's experiences. Findings suggest survivors of the atomic bombing have faced trauma, silence, physical injury, and social discrimination, amongst other impacts. Over time, responses towards hibakusha [a person affected by the atomic bombing/s of Hiroshima/Nagasaki, or its radioactivity] and nuclear weapons have changed. Memory of the event is considered throughout this research, as seventy-five years has passed since the indiscriminate atomic bombings by the United States against Japan. Research findings reveal the different perspectives and understandings held by individuals of the same event. This thesis argues that collection of narratives on human experiences of the atomic bombing of Hiroshima provides an important contribution to our understanding of the event, and its past, present, and future impacts and implications.

Keywords: Hiroshima, Atomic bomb, Survivor, Hibakusha, Memory, Trauma.

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ABBREVIATIONS

ABCC: Atomic Bomb Casualty Commission.

CCD: Civil Censorship Detachment.

CTBT: Comprehensive Nuclear-Test-Ban Treaty.

ICAN: International Campaign to Abolish Nuclear Weapons.

NPT: Treaty on the Non-Proliferation of Nuclear Weapons.

PTBT: Partial Test Ban Treaty.

PTG: Post-Traumatic Growth.

PTSD: Post-Traumatic Stress Disorder.

RERF: Radiation Effects Research Foundation.

TPNW: Treaty on the Prohibition of Nuclear Weapons.

US: United States of America.

USSR: Union of Soviet Socialist Republics.

WFC: World Friendship Center.

GLOSSARY

Burabura-byō: A radiation-related disease which made people feel chronic fatigue.

Genbaku-shi: Used to describe people killed by the atomic bombings.

Genbaku shōgaisha: Those who were injured from the atomic bombings.

Hibaku seizonsha: A term first used by the Atomic Bomb Casualty Commission [ABCC] to refer to exposed survivors from Hiroshima and Nagasaki who were present when the bombs were dropped.

Hibakusha: A person affected by an atomic bomb or its radioactivity.

Manga: Comics or graphic novels which originate from Japan.

Risaisha: Disaster victims/ sufferers.

Suica: A contactless, rechargeable smart card which is used as a fare card on train lines in Japan.

Tatami mat: A flooring material in Japanese-style rooms.

Yūyake Kaidan: Sunset stairs.

DISCLAIMER

Translation

Some quotes and excerpts used in this thesis which were collected during the oral histories and interviews have been adjusted for an English-reading audience. Format and tenses of some sentences were amended for ease of reading. These are only minor changes and have not been adjusted in a way which impacts the meaning or purpose of what my participants have shared.

*Interpretations and translations were from English to Japanese for the interview questions, and responses were then translated back from Japanese into English.

Name formatting

The names of my Japanese research participants and interpreters/translators are written in the format, last name, first name. All other names presented in this thesis are formatted according to first name, last name. The purpose of writing names in this way is to acknowledge that traditionally in Japanese culture, the surname precedes the given name. Following this, subsequent use of names refers to my participants by their surnames.

*The perspectives given in this thesis are not exhaustive of all perspectives available on the atomic bombing of Hiroshima.

CHAPTER 1

INTRODUCTION

Morikawa Takaaki (James), survived the atomic bombing of Hiroshima on August 6th, 1945.

Hiroshima was turned to ash by a single A-bomb and yet the people were able to achieve their current prosperity, so Hiroshima has another side to its history. Hiroshima rose like a phoenix from the ashes after WWII. The Peace Memorial Park is a Mecca where we are sending our message for the abolition of nuclear weapons to the world... Whenever we talk about Hiroshima, we have to remember the occurrence that is called the 20th century's most horrible tragedy. There were 4,400 people living here [Morikawa's hometown Nakajima] enjoying a happy and fairly peaceful existence before A-bombing. Most of the people here died instantly by the A-bombing since this area is very close to the hypocentre. My family lived about 300 metres away from the hypocentre, and 200 metres west from my house, there was my kindergarten. Even in wartime kindergarteners played, sang, and danced every day. I was a healthy, vigorous boy of six. -Morikawa

Saved by 'miracles' Morikawa recalled, while relating to me, his experience as a survivor and passed on the story of his family. I first met Morikawa at a small upstairs café, Hachidori-sha Social Book Café¹ in Hiroshima. After our initial meeting, we decided to conduct the oral history at a different location as the café was quite busy and loud that evening. A few blocks away is The World Friendship Center [WFC]² where I was residing while in Hiroshima, and so we decided to return there and talk in the lounge. Morikawa spoke of miracles which saved his life and the lives of his immediate family members. His father, Hiroshi, was a broadcasting engineer during wartime and, "had a hunch that something would happen in the near future to Hiroshima." Only five months prior to the atomic bombing, his family moved from within 300 metres of the hypocentre to Hiroshi's mother's house nearly 10 kilometres away. Morikawa then fell critically ill and had pneumonia requiring urgent surgery. His uncle, Dr Kanda, decided against taking Morikawa to his hospital in Hiroshima city and instead sent him to a suburban hospital 10 kilometres from the hypocentre. These decisions directly impacted Morikawa's survival.

¹ Hachidori-sha café, also known as 'hummingbird café,' is run by Erika Abiko and Mayu Seto (staff). This café, located in central Hiroshima, is a hub where visitors can speak with hibakusha (atomic bomb exposed people) and hear their testimonies. Contact was first made with the café the year prior to visiting Hiroshima, and we arranged to meet during my fieldwork. It was through this contact that I met several participants in the research, including Morikawa Takaaki.

² The WFC was established in 1965 by Barbara Reynolds, an American activist who wanted to foster peace and make friendships. The centre provides accommodation and activities such as hibakusha stories and Peace Park tours.

On the morning of the atomic bombing at 8:15am, Morikawa's mother, Akiko, was making rice porridge for her children.

All of a sudden, the eastern sky became dazzling white and a big bang with an air shock smashed the glass windows. Shattered glass fell into the room. Akiko instantly tried to cover her children to protect us from falling glass. We had no idea what was happening. All we could do was to pray to God and wait for time to pass... when I saw rice porridge in the pot it was covered with fragments of broken glass. And I, small boy, cried over it because I could not eat it. That is my first experience. -Morikawa

Once outside, Morikawa saw a sky, “darkened with rain” and a, “smoky cloud rising from the eastern ridge.” Sticky black rain fell as he romped around, and he was subsequently exposed to radiation. In September of 2018, Morikawa's doctor found prostate cancer. Like others in my research, he is interested in the causality of his case. “Starting from black rain, ending by the prostate cancer. This is a continuous story.” (Morikawa)



FIGURE 1: MORIKAWA TAKAAKI AND HIS FAMILY, SEVEN MONTHS AFTER THE ATOMIC BOMBING.

March 1946, Morikawa Takaaki (James) (6) is seen pictured with his elder sister Mikiko (9), his mother Akiko (32), and his father Hiroshi (35). Morikawa recalled his happiness seeing the cherry blossoms after the ‘hellish experiences’ of the atomic bombing.

In 1987 Weeramantry (p. iv) wrote, “For 42 years now, all mankind has lived under the shadow of the bomb.” The subject of this thesis, *Seventy-five Years on: An Ethnographic Exploration of Oral Histories on the Atomic Bombing of Hiroshima*, examines human experiences of the atomic bombing of Hiroshima and its implications since 1945.

Aims and objectives

This research aims to build on awareness and understandings of survivor’s experiences of nuclear-weapons-use and consider their long-lasting impacts. I aim to achieve this through adding to discussions on Hiroshima’s atomic bombing, and to humanise the impacts of nuclear weapons. It is important to examine individual experiences as they contribute to overall understanding of the event. My primary research question is: *What are people’s experiences of the atomic bombing of Hiroshima?* I conducted this research with the recognition that the population of individuals present at the atomic bombings is aging. This fact is significant as it shows the importance of collecting oral histories and conducting semi-structured interviews while these opportunities remain. If these narratives are not gathered, there is potential for these individual experiences and memories to be lost. Findings were gained using ethnographic methods including participant observation, fieldwork, and narrative analysis. Elements of autoethnography have also been incorporated for reflexivity, and to contemplate the journey of this thesis and how it came to emerge.

Exploration of oral histories and interviews on the atomic bombing of Hiroshima

Japan became the world’s first and only location where nuclear weapons were used in warfare.³ On the 6th of August 1945, at 8:15am, a time when many people were commuting to school and work, the first atomic bomb⁴ codenamed *Little Boy* was deployed by an American Boeing B-29 Superfortress bomber above Hiroshima city. Just over 44 seconds later, the uranium bomb exploded with approximately 13 kilotons of force, killing an estimated 60,000 (Greenwell, 2013) to 80,000 people (O’Malley, 2016) immediately. One of the few structures left standing near the hypocenter of the blast, was the atomic bomb dome, which is visible in the background of Figure 2 below. Three days later, on August 9th, 1945, a second atomic bomb, *Fat Man*⁵ which was made of plutonium exploded above Nagasaki resulting in an estimated 70,000

³ This does not include the depleted uranium weapons which have been used in recent warfare including the First Gulf War, Afghanistan, and Iraq.

⁴ This was a uranium gun-type bomb.

⁵ This bomb which exploded above Nagasaki had a core of plutonium, a different atomic element to the bomb in Hiroshima.

victims (Greenwell, 2013; O'Malley, 2016). Physical harm that was suffered included but was not limited to, severe burns, traumatic injuries, exposure to radiation, and cancer (Greenwell, 2013; O'Malley 2016). Survivors of the atomic bombs at both Hiroshima and Nagasaki, are known as *hibakusha*, meaning 'a person affected by an atomic bomb' (Clancey & Chhem, 2015; O'Malley, 2016). This term, *hibakusha*, was used by my participants to classify both themselves and others who were exposed to atomic bombs and their radiation. Therefore, I use this same categorisation in my thesis. Interest in Japan and *hibakusha* led me to focus this thesis on oral histories and experiences of Hiroshima's atomic bombing with an aim to extend awareness and understandings of the human impacts of nuclear weapons.

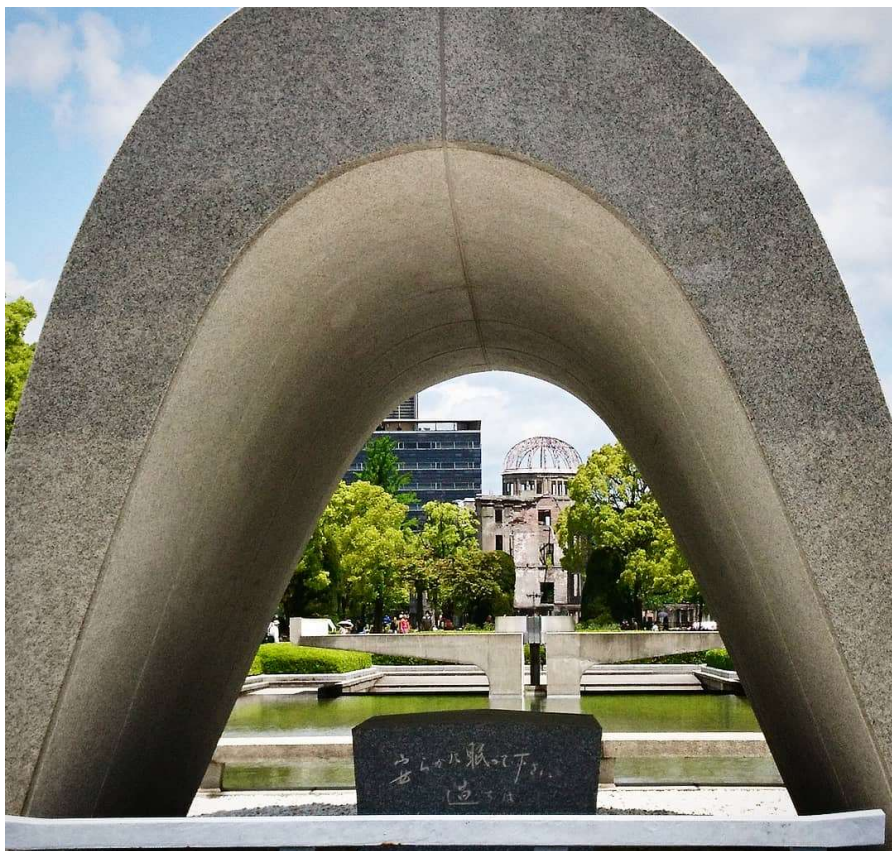


FIGURE 2: CENOTAPH FOR ATOMIC BOMB VICTIMS IN HIROSHIMA
Image taken in May 2019. The A-bomb dome is visible in the distance.

My thesis uses an oral history approach in fieldwork to explore the experiences of the atomic bombing of Hiroshima. Use of fieldwork and an oral history approach was affirmed by Thompson's (2015, p. 34) concept of the "transforming impact of oral history upon the history of the family" as it creates a means to learn about relationships, roles of individuals in society, and gives people an opportunity to have their voices heard. Through a collaborative approach

in ethnographic fieldwork, I also considered my role in the field and how I fit into the research. As an individual of mixed ethnicity who had been introduced to the field of nuclear weapons and non-proliferation, I became intrigued by Hiroshima's story.

Rationale and personal story

Even before I had started school, I had to learn to spell my surname. It took time to learn the sounds, and perfect the shape of the letters. As a four-year old I would break my surname down phonetically to Shim-a-sah-kee. Shimasaki, the name that I grew up with set me apart and hence began a journey into my heritage. Nearly 20 years later, this very heritage took me across Japanese cities and rolling countryside in search of stories about experiences of the atomic bombings of Hiroshima.⁶ The very aspect of my physical being which set me apart, became a gateway for future encounters.

Having mixed ethnicity plunged me into a world of constant questions and explanations of where I 'came from.' Stories of how and where my family originated have been told to me for as long as I can remember. On my mother's side we are of British origin and on my father's side, we have American, American-Samoan, and Japanese ancestry. As I grew, my name came to be associated with both my family in New Zealand and my extended family abroad. It was not until I was seven that I first travelled with my parents and brother across the Pacific Ocean in a long-haul, stuffy plane ride to the United States of America [US] where I would meet Yoshiko, my Japanese immigrant grandmother, and other extended family for the first time. Walking into my grandmother's bungalow on Bunker Hill Road, I breathed in the tangy scent of cigarettes and stood staring up at a miscellany of taxidermy animal heads. As a child I was unsure whether to be scared or in awe of such beautiful creatures. I was so taken aback with the animal heads that I almost missed my grandmother standing in the doorway with arms wide open. Yoshiko looked much younger than her years. According to my mother this was the Japanese, as she felt Asian women did not tend to age as quickly as Europeans — a characteristic that my mother and I would talk about as I grew, and she hoped I too would inherit. Smiling at the family, Yoshiko called to welcome us in an accent that was not so much American as it was Japanese. Embraced in her arms I looked up and remembered thinking how my eyes were like hers, the same dark brown with long straight lashes. Apart from my father Manuel, who I had grown up seeing daily, Yoshiko was the first member of my family who

⁶ During my research I also interviewed individuals from Nagasaki, and New Zealanders with affiliations to the Operation Grapple nuclear weapons tests in the Pacific near Christmas and Malden Islands.

had strikingly different features, attributable to her Japanese heritage. My grandmother carried something beautiful about her and it was this encounter which sparked a level of interest in Japan.



FIGURE 3: IMAGE OF MY GRANDMOTHER, HORIE YOSHIKO, AS A YOUNG WOMAN.

In my early teens I learned more about the history between Japan and America which was intriguing due to my ethnic mix and the marriage of my American grandfather to my Japanese grandmother [paternal side]. I was full of questions, always asking for more information. My father on several occasions, briefly told me about the Japanese bombing of Pearl Harbor on December 7th, 1941 and the American explosion of atomic weapons above Hiroshima and Nagasaki on August 6th and August 9th, 1945, respectively. Despite intrigue, I only ever heard the facts and figures; I never heard personal accounts or oral histories from the events themselves. Reed (2018, p. 88) discussed when talking about his students' knowledge of Hiroshima and Nagasaki, "Some might have heard stories from grandparents or great-grandparents, but we now live in an era in which collective memory of the world's only nuclear war is fading rapidly." I was a testament to Reed's (2018) thoughts as shown by the gaps in what I knew and had heard.



FIGURE 4: THREE GENERATIONS OF THE SHIMASAKI FAMILY.
Left to right: Myself Olivia, my father Manuel, and his late mother Yoshiko (nee Horie).

I did not question why I had not heard oral histories or accounts of the atomic bombings in my teens. However, in my early 20s, sitting at the back of a lecture theatre on a warm, sunny afternoon I began to consider the actual implications of nuclear weapons use. The lecture was a significant turning point, as it was the very moment, traceably so, that I would go back to in the following weeks and years. Instead of our usual lecture, guest speakers Kate Dewes and Robert Green⁷ animatedly spoke about nuclear weapons and shared the documentary *Nuclear Savage: The Islands of Secret Project 4.1*.⁸ I sat behind my desk entranced by the images, but more so by the stories. Hearing experiences of individuals exposed to radiation and the impacts that it had on their lives was shocking; severe burns, radiation sickness, and children born without bones who could only be described as ‘jellyfish’, to name a few (Horowitz, 2011). It was the first time I had considered the stories and questioned long-lasting human implications of nuclear events. Typically, I was a shy student who would avoid raising my hand in class, but on this day, I asked many questions. As soon as the lecture ended, I walked to the front of the room to introduce myself to the speakers. I was amazed that institutional systems had meant

⁷ At this point in 2016 Kates Dewes and Robert Green were running the Disarmament and Security Centre, Aotearoa New Zealand.

⁸ This film *Nuclear Savage. The Islands of Secret Project 4.1* by Horowitz, A. J. & Primordial Soup Co. (2011) can be accessed at <https://vimeo.com/ondemand/28826>

I was not educated about nuclear weapons testing and its human implications in the Pacific until that point. For this reason, I felt a sense of obligation to know more and to understand why these events occur. After a brief chat, Kate Dewes and Robert Green welcomed me to visit the *Disarmament and Security Centre, Aotearoa, New Zealand* which they operated.

The Centre, which I had not heard of prior, was in an area which I frequented throughout my childhood, and my maternal grandmother would often take us to the local gardens less than one minute away. It was through this close locality that I was able to make the most of the opportunity I had been given to learn more. Sitting on the floor, with books piled around me is where my attentiveness to nuclear weaponry began. Books would come and go with me and I would return their pages a little more creased than when they left. Within a month I had begun listening to stories of survivors and reading articles from other locations where individuals had been exposed to radiation from nuclear tests.

Questions began cumulating in my mind, the more I read, the more questions I formed. Then one day, it was like a light went off in my head — how had I not seen the links earlier? My grandmother, born in 1936, would have been alive and experienced life in Japan when the atomic bombs were dropped on Hiroshima and Nagasaki in August of 1945. Suddenly through my research, these experiences began to take on a new meaning, as did my Japanese identity.

This new-found avenue of potential significance led the first of my research to be conducted within my own family. Since I had no perception of what it was like to be alive when the atomic bombs were dropped, I went to those closest to me for insight. As Yoshiko lived in the US, my father, Manuel, became the first person I spoke with. When approaching him I limited myself to a single question, *Growing up, what did you hear about grandma's experiences of the atomic bombings in Hiroshima and Nagasaki?* Yoshiko, as my father recounted, remembered the days of the atomic bombings and hearing about the devastation. As a child when it happened, she said it was something that stuck with her well into her adult life. After hearing these snippets of information, I was eager to speak with my grandmother via telephone to hear what she would say.

Before I was given the opportunity, my grandmother became extremely ill. In late February 2019, only months before I was scheduled to travel to Japan to undertake my fieldwork and interviews, Yoshiko suddenly passed away. My strong, beautiful grandmother was gone too

soon, and with her, I feared, her story. However, to my surprise her story became one which was told by other members of the family, in small gatherings, and at her wake. From these intimate experiences I learned more about my grandmother and the role that Japan had in her life. Not only was she a lady who cooked southern-style beans and bacon, I heard of her bravery travelling to the US with her new American husband, where she did not speak the language and was unfamiliar with the customs. In a foreign country far from home, Yoshiko, as told by my eldest aunt, dreamed of returning to Japan however, for reasons beyond her control this was unachievable for over 40 years. Despite these challenges, Yoshiko still felt a longingness for and strong sense of connection with her homeland. Like my participants, it was through acknowledgement of the value of oral histories that I was able to hear of my own grandmother's experiences. Through my family sharing part of her oral history, I learned to appreciate the prominence of shared experiences and memories. This relates back to my own participants and research as it is through this medium that they passed on oral information which may otherwise be lost.

When questioning my family further about Yoshiko's experiences and if they heard what her life was like post-atomic bombings, I soon learned my questions would not reward me with more information, but rather plunge us into a sense of loss of a loved matriarch. As James (2015, p. 89) reflected, "Indeed, any process of remembering is inevitably shaped by what is omitted, silenced, not evoked." These omissions would foreshadow the oral histories and interviews in Japan, where certain topics were shaped by traumatic memory. When analyzing my research, I learned it is sometimes not so much what is said, as what goes unsaid.

In April 2019, with the financial support of the Peace and Disarmament Education Trust, I began my journey in search of the stories of hibakusha and those who have relationships to the group. Like Stolzoff (2000) questioned being a white man interested in reggae, I too questioned my role in the field. As a woman of mixed ethnicity, I wanted to ensure caution because I had not lived in Japan, was not culturally adept, and only knew basic courtesies in the language. To address these concerns, I spoke with family and people who had travelled to Japan, and importantly, kept regular email contact with my participants prior to travel. When I set off on my fieldwork I felt at ease with my role as I had a sense of belonging to Japan, maintained the connections I had made, had interpreters/translators arranged, and was accompanied by my partner at the time.

Following a domestic flight from Christchurch to Auckland and an eleven-hour international flight from Auckland City to Narita, Japan, I was tired, exhausted, and looking forward to arriving at our hotel. Already well into the evening, we choose to catch the nearest taxi. Stepping out into the dark night air was refreshing but left me with little more than an exhausted excitement. I heaved my bags into the back of the taxi, and we began our journey into the city in silence, neither party having the ability to effectively communicate with the other. For the first while I drifted in and out of sleep, my head feeling heavy on my shoulders. When I awoke, we were travelling down narrow, winding streets with buildings so high I could not see past what was in front of me. One change of taxi later and my partner and I arrived at our accommodation. Although not in the centre of the city, Asakusa, was a bustling district filled with people, lights, and noise. After dropping our bags at the hotel, I had a sudden second wind which propelled me out the door, down the covered spiraling staircase and right into the middle of the bustle. I stood in awe looking at the architecture, flashing lights of convenience stores and Pachinko machines, and could not help but think about how far Japan had come since the end of the Second World War.

From Tokyo city I travelled over 800 kilometres in one day via Japan Rail to Hiroshima. The warm spring weather and rivers flowing through the city made a pleasant walk to my accommodation at the World Friendship Center. A long narrow staircase led to my room where my partner and I slept on *tatami* mats [a type of Japanese flooring — see Figure 5] with light foldable mattresses. Most mornings I would walk down the stairs into the building next door where I would sit around a table which reached my shins on a flat cushion. Sipping on a morning coffee and eating toast, this became a location where with other visitors, we would talk and hear about what brought each of us to the World Friendship Center. A journalist, a small family, and other travelers were all intrigued by Hiroshima's rich history and we all, seemingly, wanted to know more. As we sat spreading jams and eating fresh berries, we talked about Japan, the destinations we had chosen to visit, and the atomic bombings which occurred over 73 years prior. We spoke about the feeling of visiting a place that had been scarred by an atomic bomb and the impact that it had on both our time there, and the way we felt at that moment. More than once, the Hiroshima Peace Memorial Museum was mentioned with people sharing stories of what they had seen. I would sit sipping my strong coffee and chewing small bites of toast taking in each person's thoughts and feelings all the while considering my own. Adding to fieldnotes, I wrote how I felt visiting Hiroshima for the first time. Although these interactions were not part of the formal research so to speak, it was through these everyday

encounters that I realised the intrinsic role of the researcher and the cooperative nature of the discussions.



FIGURE 5: TATAMI MATS.

Accommodation in Hiroshima. Tatami mats and light mattresses which I slept on. If you look closely you can see a paper crane⁹ folded and placed on each of our pillows.

My fieldwork experiences were recorded through photographs, audio, and fieldnotes. These data sources, along with other documents which I collated became the foundations of my work, creating a base upon which I can recall my own experiences of the fieldwork. Transcribing the oral histories and interviews brought back strong memories, evoking images and smells which have assisted in capturing both my participants' experiences and my own. Throughout the research I felt the urgency of my participants having their stories heard and gaining the opportunity to share stories of their family members.

Similar to Haley (2015) and Stolzoff (2000), I found that the research was also an exercise in reflexivity, considering my role in the field as I too was part of the research and data collection. For example, parts of my interviews were held around dining tables, drink in hand, mutually sharing our experiences — how I ended up in the field and what brought them to speak with

⁹According to Japanese tradition, if you fold 1,000 paper cranes you are given the chance for a wish to come true. Paper cranes have become symbolic as a reminder of children who died as a result of the atomic bombing and is closely related to the story of Sadako, a child diagnosed with leukaemia (A-bomb disease) who decided to fold 1,000 cranes in the hopes she would get well again. Sadako died in 1955 at the age of 12.

me. When reflecting, I acknowledged the poignancy of the role of field workers as sharing in experiences on a human level with their informants.

The institutional education I received on these topics was minimal, despite New Zealand being a country with a strong anti-nuclear stance. Lack of education on both national and international security with regard to nuclear testing made me question why I had not been educated on these topics when we live in a world where nuclear weapons are a current concern. This gap in my knowledge was supported by experiences of family and friends who similarly had not learned about nuclear weapons and their impacts during formal education.

Focus of this research on experiences from the atomic bombing of Hiroshima was chosen for several reasons. As the first place where nuclear weapons were used in warfare, Hiroshima became the primary focus due to the size of the city, its location as the place where the Atomic Bomb Casualty Commission [ABCC] began research after the bombings, data available, and willingness of survivors to share their stories. Survivors who witnessed the atomic bombing, as well as descendants and other members of the community, showed an interest in sharing legacies of the bomb.

The human implications of nuclear weapons-use and their long-lasting impacts will be considered in this thesis. Through examination of oral histories and narratives from the atomic bombing of Hiroshima I aim to build on awareness of the harm which can be caused by nuclear weapons and radiation. This focus will assist in moving debates from the scientific and political realm to the social realm. As a result of this thesis, I hope to help educate people about the human impacts caused by nuclear weapons and their implications for the past, present, and future.

Overview of chapters

My thesis, *Seventy-five Years on: An Ethnographic Exploration of Oral Histories on the Atomic Bombing of Hiroshima*, will be divided into an introduction, five body chapters, and a conclusion.

Chapter 2 explores the context of the atomic bombings of Hiroshima and Nagasaki and aims to contextualize the discussion chapters. I consider how scientific discoveries and political tensions led to the development of nuclear weaponry. I then examine the years following the

atomic bombing and the development of the survivor category hibakusha, which is used to describe an explosion-affected or atomic bomb-exposed person (Knowles, 2011; O'Malley, 2016; Naono, 2019; Todeschini, 1999).

Chapter 3, methodology, explains the use of the ethnographic fieldwork approach considering both its benefits and challenges. It also states the scope and sampling methods of the research going into more depth as to why my participants were included. The narratives from participants were gathered through use of ethnography, oral history, interviews, and narrative analysis. A balance of both formal and informal encounters created a good atmosphere where we were able to talk on different levels about life and experiences.

Examination of narratives from the atomic bombing of Hiroshima on August 6th, 1945 highlighted significant themes around memory, silence, and trauma. As part of Chapter 4 on conceptual frameworks, I explore these lenses and their application to the atomic bombing of Hiroshima. Memory is particularly interesting to examine as it shows how the event has been framed since 1945 in both individual and collective contexts. Next, I apply theory on trauma, as this became an evident theme throughout the oral histories and interviews. Caruth (1996) suggests there is a repeated nature of trauma and considered the latency of traumatic memories. I then examine how silence has impacted responses amongst my participants.

Findings are examined thematically in Chapter 5 and Chapter 6. Chapter 5 focuses on what the participants were doing at the time of the atomic bombing and its immediate impacts. Chapter 6 goes into more depth examining longer-term implications and discussing the findings of the research. Consideration of the holistic experiences of the participants and thinking beyond physical implications, highlights the emotional impact that resulted from the atomic bombing. My research also demonstrates the significance of sharing family histories as they provide participants a connection between family and memory, whilst giving them a sense of belonging. The key finding from my research is the importance in collecting these individual experiences since they contribute to greater understanding of the atomic bombing of Hiroshima and its human implications. Recording oral histories and stories from hibakusha is essential as the population of people who can provide experiences first-hand is decreasing as time passes.

This thesis was conceived to challenge the way in which we think about history and to highlight people and their experiences in the discussion on nuclear weaponry.

CHAPTER 2

CONTEXT: ADVENT OF THE NUCLEAR AGE

Discovery of nuclear fission in December of 1938 led to the development of nuclear weapons which were subsequently used by the US in warfare. In this chapter I will provide background and context to support the stories of my participants. The scope of this chapter examines the forefront of the human impacts of the atomic bombing of Hiroshima on August 6th by the US. Debates surrounding the reasons behind the use of the atomic bombings fall outside the parameters of this research, however, these debates do not change the human impact, devastation, and ongoing consequences of the atomic bombings. Statistics alone are not enough to gather experiences from the bombing therefore, stories and testimonies provide another level of understanding. To consider the experiences of my participants I will provide context to the areas which are covered in their oral histories and interviews.

Nuclear weapons

Nuclear weapons are defined as weapons which release nuclear energy through fission or fusion (Campaign for Nuclear Disarmament, n.d.). Atomic bombs which use nuclear fission,¹⁰ where an atomic nucleus is split, have only been used twice in warfare — once in Hiroshima and once in Nagasaki. Effects of nuclear weapons explosions as described by Beach (2003) explain how one-third of the total energy is produced by the initial heat wave, half of the total energy results from the blast which comes second, and the rest of the energy is from radiation. Nuclear explosions release nuclear products which have half-lives ranging from less than a second to millions of years¹¹ (Beach, 2003). Humans can be exposed to nuclear radiation in several ways including ingestion of fission products¹² which enter the food chain, and through

¹⁰ Nuclear fission occurs when an atomic nucleus is split and subsequently releases large amounts of energy (Campaign for Nuclear Disarmament, n.d.; Chan, 2017). Both the uranium core weapon, Little Boy, dropped on Hiroshima, and the plutonium core weapon, Fat Man, dropped on Nagasaki used nuclear fission.

¹¹ Half-lives refer to the time taken of an isotope to lose half of its radioactivity. For further details into the radioactive half-life refer to Connor (2019).

¹² The Hiroshima bomb was made of highly enriched uranium-235 which produced uranium isotopes (Takada et al. 1983). Research by Takada et al (1983) suggested that fallout nuclides from Hiroshima are detectable in the area of black rain. Uranium-234 and Uranium-238 activity ratios leached from the soil fallout area were higher than other areas according to the study by Takada et al. (1983). Similarly, The World Nuclear Association (2016) recognised that deposition of some nuclear fission products occurred from the rainfall after the explosion. These fission products, as seen in later chapters, were ingested by some of the participants in my research and is one of the ways in which they were exposed to radiation.

inhalation of radioactive particles emitted at the time of nuclear detonation (Ajlouni, 2007; Tubanavau-Salabula et al., 1999).

Nuclear weapons development

Scientific discoveries since 1895 when Ernest Rutherford ‘undid’ the atom have led to the development of nuclear weapons.¹³ The discovery of nuclear fission by Otto Hanh and Fritz Strassmann¹⁴ was announced on December 17th, 1938 (Ramamurthy, 2014; Rotter, 2008; Sime, 2014). Through this discovery, humanity learned of the atom’s energy potential (Ramamurthy, 2014).

In 1939, President Theodore Roosevelt began an early-stage programme for nuclear weapon development which would become the Manhattan Project (Ramamurthy, 2014; Tomonaga, 2019). The Manhattan Project, led by the US, focused on research and development of the first nuclear weapons and was a two-billion-dollar programme employing over 130,000 people (Ramamurthy, 2014; Takaki, 1996). Original development of these weapons has been linked to concerns of Nazi progression of this technology (Greenwell, 2013; Hanson, 2016; Rotter, 2008; Takaki 1996; Tomonaga, 2019). On October 9th, 1941, President Roosevelt agreed to continue advancement of the atomic bomb, which was at the same time that Germany and its allies had gained control over most of Europe (Rotter, 2008). As late as 1944, the US president, Franklin D. Roosevelt, had not made decisions about nuclear weapons use in warfare (Takaki, 1996). Following the death of Roosevelt, Harry S. Truman succeeded his presidency on April 12th, 1945. Truman made the decision to drop nuclear bombs on Hiroshima and subsequently Nagasaki.

Events which influenced the use of nuclear weapons in warfare

A series of events, which are not exhausted due to the scope of this thesis, led to the use of nuclear weapons against Japan.

¹³ The first nuclear explosion on July 16th, 1945, by the United States was in New Mexico at an Indian reservation in Alamogordo (Takaki, 1996; Tomonaga, 2019).

¹⁴ Lise Meitner also played a significant role in the discovery of nuclear fission with her scientific contributions (Sime, 2014).

The outbreak of war in the Pacific took the world by surprise. The shock was not so much war itself; it was the way it began. Japan's opening strike, like America's closing use of nuclear bombs, is still argued over today. Both events, opposites in scale and purpose, triggered seismic change and formed lasting national self-images... (Lewis & Steele, 2001, p. 17)

Some factors led to tension between the two countries including, the Second World War, decisions by the US to halt trade with Japan, the bombing of Pearl Harbor, the US bombing of Japanese cities, and the Battle of Okinawa (Wainstock 2010).

The bombing of Pearl Harbor by Japanese fighter planes on December 7th, 1941 brought the US into the Second World War (Lewis & Steele, 2001). As a result of the bombing, approximately 2,400 servicemen died at Pearl Harbor (Lewis & Steele, 2001). “It suited America best to see Pearl Harbor not as a failure of national defence, or intelligence, or planning, or governance, but as a simple case of Japanese treachery.” (Lewis & Steele, 2001, p. 87). After this attack, the US entered the war against Japan.

A US attack on Tokyo on the night of March 9th-10th, 1945, [codenamed Operation Meetinghouse, and also known as the ‘Night of the Black Snow’] dropped what was estimated to be 1,665 tonnes of napalm incendiaries on the city, which killed over an estimated 100,000 individuals (Carney, 2015; Grant, n.d.; Hanson, 2016; Lendon & Jozuka, 2020; Rauch, 2002; Tillman, 2016). Rauch (2002, p. 22) said of the US Major General, “LeMay made no attempt to focus on military targets...” The US firebombing destroyed vast populated areas of the city and left an estimated 1,000,000 homeless and 1,000,000 injured (Carney, 2015; Lendon & Jozuka, 2020; Rauch, 2002; Tillman, 2016). Like my research, oral histories on the Tokyo firebombing elicit greater understanding of the destruction and harm caused. As a survivor of the firebombing, Haruyo Nihei shared, “huddled inside — we could hear footsteps overhead fleeing, voices rising, kids screaming ‘mom, mom.’ Parents were screaming their kids’ names... But once outside, the horrors were unimaginable. Everything was burning... Babies were burning on the backs of parents.” (Marshall News, 2020).

Another US attack, the Battle of Okinawa,¹⁵ began on April 1st, 1945. The US wanted to capture Okinawa and use it as a base for an invasion into the main islands of Japan¹⁶ (Johnston,

¹⁵ This battle is also coined, ‘typhoon of steel.’

¹⁶ After declaring war against Japan, the US had begun an ‘island hopping’ campaign against smaller islands in the Pacific with the goal to advance closer to Japan (Johnston, 2020).

2020). Okinawa was the only land battle in Japan. Over 100,000 Japanese soldiers were killed, and more than 100,000 Okinawan civilians also perished¹⁷ (Ikeda, 2014; Johnston, 2020; Kindy, 2020; Okinawa Prefecture, 2013; Sarantakes, 2016). The US death toll exceeded 12,000 (Hanson, 2016; Johnston, 2020; Kindy, 2020; Rotter, 2008). Like my research on the atomic bombing of Hiroshima, memory is an area which has been explored in relation to the Battle of Okinawa. Ikeda (2014) considered how personal memories can challenge the officially sanctioned history of Okinawa.¹⁸ Three days prior to the end of the Battle of Okinawa on June 18th, 1945, Truman met with the Joint Chiefs of Staff to discuss strategies for defeating Japan (Rotter, 2008). In the following months, "...American attacks levelled huge swaths of urban Japan." (Hanson, 2016). During this time, the US and Japan negotiated the conditions for Japan's surrender. With the collapse of the Third Reich by July 1945, imperial Japan was the sole Axis target remaining (Hanson, 2016).

Atomic bombings of Hiroshima and Nagasaki

The US atomic bombing of Hiroshima at 8:15am on August 6th, 1945 was the first time that nuclear weaponry was used in warfare. Three days later on August 9th, the US dropped an atomic bomb on Nagasaki, making it the second and last location of nuclear weapon-use in warfare. Locations of the atomic bombings were determined by a Target Committee¹⁹ who reserved Kyoto, Hiroshima, Yokohama, Kokura, and Niigata as targets²⁰ (Atomic Heritage Foundation, 2019; Wainstock, 2010). Choice of these locations was defined by the facts they were important military sites, and these cities were untouched by previous bombings, allowing for the effects of the atomic bombs to be measured (Wainstock, 2010).

¹⁷ These figures do not include those who perished due to disease or starvation brought on by the battle and are not exhaustive as local records were lost in the fighting. Okinawan civilians who died [caught in battle, killed, forced suicide] outnumber the military losses (Ikeda, 2014).

¹⁸ As of 2020, Okinawa continued to memorialise the battle through their annual ceremony on June 23rd and through the erection of the Cornerstone of Peace memorial which as of June 2020 had a total of 241,593 names. "These include 149,547 Okinawans, and 77,456 people from other prefectures. The names of 14,010 Americans, 382 South Koreans, 82 people from the United Kingdom, 82 from North Korea and 34 from Taiwan are also inscribed." (Johnston, 2020).

¹⁹ An American military target committee was used.

²⁰ For further reading refer to <https://www.atomicheritage.org/key-documents/target-committee-recommendations>



FIGURE 6: DEVASTATION CAUSED TO HIROSHIMA AFTER THE US ATOMIC BOMBING ON AUGUST 6TH, 1945. PHOTO BY US ARMY, COURTESY OF THE HIROSHIMA PEACE MEMORIAL MUSEUM.

On August 6th, 1945, the first atomic bomb *Little Boy* was dropped by the US above its primary target Hiroshima. Approximately 350,000 people were in the city on the day²¹ (BBC News, 2020; Wellerstein, 2020). Two air-raid sirens had gone off during the night and a third was raised at 7:10am on the 6th when a weather plane passed overhead, but was later called off (Rotter, 2008). When spotters detected the three planes just after 8am they did not restart the siren showing 'precaution fatigue' (Rotter, 2008). At 8:15am the uranium bomb was released by the *Enola Gay*²² and exploded above the city. The t-shaped Aioi bridge located at the now North entrance of the Peace Memorial Park in central Hiroshima, was the target of the atomic bomb (Rotter, 2008; Weeramantry, 1987) however, the epicentre was approximately

²¹ It is difficult to be more precise with the figures surrounding those present in the city that day as five large-scale evacuations of Hiroshima had occurred scattering people in the countryside and a sixth was underway. Amongst those in the city on August 6th, 1945, 20 percent were Korean, along with 3,200 Japanese-Americans, hundreds of Chinese, and US prisoners of war (Rotter, 2008). These groups of people are also amongst those who died in the atomic bombing.

²² Paul Tibbets flew the Boeing B-29 Superfortress Bomber *Enola Gay*, that dropped the bomb on Hiroshima. The plane was named after his mother.

580 metres above Shima hospital 300 metres away from its original target (Hiroshima-Nagasaki Publishing Committee 1981; Hiroshima Peace Memorial Museum, 1987; O'Malley, 2016; Rotter, 2008).

Light at the epicentre was 10 times brighter than the sun (Lewis & Steele, 2001) with the temperature near the hypocentre reaching 3000 to 4000 degrees Celsius (Hiroshima Peace Memorial Museum, n.d.). These figures explain why those within close proximity to the bomb expired and turned into a 'white powder' as described by Morikawa, a participant in my research. The heat burned lasting shadows of items and some victims onto objects in their path. These high temperatures after the bombing also caused severe burns and injuries which are discussed further in Chapter 5.

In areas within 1 kilometer of ground zero, human bodies without any shielding, namely in open air on the roads and ground, were instantaneously squeezed by the blast wind (pressure) against walls, causing multiple fractures of skeletons and ruptures of the abdominal cavity causing escape of colons. Many people in open roads and grounds were carbonized by the direct effect of heat rays within 1.0 km from ground zero. (Tomonaga, 2019, p. 494)

An estimated 92 percent of buildings in Hiroshima were also destroyed by the blast and fires (Hiroshima-Nagasaki Publishing Committee, 1981), and as a result many survivors were left without homes (Bernard & Homma, 2015).

Three days after the atomic bombing of Hiroshima, on August 9th, 1945, Nagasaki, a ship building centre, became the target for the US' plutonium bomb, *Fat Man*. The primary target of the second bombing, Kokura, had poor weather visibility resulting in the Nagasaki becoming the new target (Lewis & Steele, 2001). Despite poor weather in Nagasaki city, "patches of clear sky enabled the city to be positively identified but the bombing run itself was made on radar, and the target was missed by a mile and a half." (Lewis & Steele, 2001, p. 227). The location where the bomb exploded was a long narrow area away from crowded streets, and despite *Fat Man* having higher destructive power than *Little Boy*, the location meant that the devastation was still severe but less than expected (Hiroshima-Nagasaki Publishing Committee, 1981).

Damages caused by the bombings resulted in tens of thousands of dead, physical, and mental injuries, destroyed infrastructure, and had social, political, and global impacts. Casualties from Hiroshima and Nagasaki are difficult to determine due to fires which ravaged the cities,

destruction of official records, displacement, trouble identifying the dead, and mass cremations of bodies which were charred beyond recognition (Wainstock, 2010). Japanese estimates for immediate deaths in Hiroshima ranged between 60,000 and 80,000, with many more injured²³ (Greenwell, 2013; O'Malley, 2016; Wainstock, 2010). It is estimated that by December of 1945, 140,000 were dead as a result of the bomb. Similarly, there is complexity in determining Nagasaki's figures (Lewis & Steele, 2001; Wainstock, 2010). Greenwell (2013, p. 38) recorded that over 70,000 people were, "burnt and mangled victims" from the bombing of Nagasaki, with a further 70,000 dying from radiation effects within five years. The number of casualties from Hiroshima and Nagasaki are important to consider when examining human implications of nuclear weapons. These casualties reflect the large loss of life, inability to collect stories from those killed immediately, and meant my participants who can recall the day suffered trauma from witnessing casualties of the bombing.

Just over a week after the atomic bombings on August 15th, 1945, Japan's emperor surrendered. Emperor Hirohito agreed to the terms in the Potsdam Declaration²⁴ [issued at Potsdam, July 26, 1945] with the condition that he remained sovereign ruler (Lewis & Steele, 2001). After the formal surrender of Japan to the US on September 2nd, 1945, the Allied Occupation²⁵ of Japan began (Naono, 2019).

Hibakusha

As a result of the atomic bombings of Hiroshima and Nagasaki new identifier categories emerged. The term, *genbaku-shi* was used to describe to the tens-of-thousands killed by the atomic bombings (Hiroshima-Nagasaki Publishing Committee, 1981), *risaisha* was used for the victims, and *genbaku shōgaisha* referred to those who were injured from the atomic bombing (Naono, 2019). In contrast, the term *hibakusha* is used for an explosion-affected or atomic bomb-exposed person (Knowles, 2011; O'Malley, 2016; Naono, 2019; Todeschini, 1999). *Hibakusha* did not emerge as a category directly after the atomic bombings, and it was not until more than ten years later that the word was used in the 1957 Atomic Bomb Survivors Medical Care Law²⁶ [hereafter Medical Care Law]. According to Naono (2019, p. 334)

²³ Japanese were not the only people killed by the bomb, Koreans, Chinese, and (indirectly) Americans were also amongst the casualties (Rotter, 2008). Of the 298 doctors in Hiroshima, 270 were killed impacting abilities to provide relief for the injured and dying (O'Malley, 2016).

²⁴ This was a Declaration which defined the terms for Japanese surrender.

²⁵ Allied Occupation of Japan began in September of 1945 and ended in 1952.

²⁶ This Law represented the first measures to provide medical assistance specifically for atomic bomb survivors.

hibakusha refers to individuals who have, “directly received injurious effects from an atomic bombing.” Identity as hibakusha originated from the Atomic Bomb Casualty Commission [ABCC] which surveyed a population of the exposed for their genetic study programme [beginning 1946] (Naono, 2019). Their survey used the phrase, *hibaku seizonsha*²⁷ translated as ‘exposed survivors’ to reflect its historical use²⁸ (Naono, 2019). The subsequent contraction of this term, hibakusha, was used in the 1957 Medical Care Law and originated from the above phrase used by the ABCC (Naono, 2019).

Support for hibakusha

Initial assistance given to survivors was under the 1942 Wartime Casualties Care Law (Naono, 2019). However, by October of 1945, the Japanese government under the Allied Occupation stopped this support role and with emergency support centres closed, help was limited to local government initiatives and the private sector (Naono, 2019). Many conditions which hibakusha suffered were not covered by Japan’s health care laws, and the San Francisco Peace Treaty²⁹ [signed in 1951] prevented the US from being sued for damages (Atomic Heritage Foundation, 2017). Two days after the Treaty of San Francisco came into effect on April 28th, 1952, the Relief Law for the War Victims and Survivors [Relief Law] also came into effect (Naono, 2019). The Relief Law created an opportunity for Hiroshima and Nagasaki to receive financial assistance for survivors, despite the law not being designed to assist the group of individuals suffering from the atomic bombs (Naono, 2019). Later in 1957, the Medical Care Law was introduced as the first law specifically catered to atomic bomb victims (Todeschini, 1999).

1957 Medical Care Law

The 1957 Medical Care Law defined hibakusha as a category and made them eligible for state assistance of medical care. The above law not only included ‘exposed survivors,’ it also included individuals who had potentially been exposed to radioactivity from the bombs. Greater inclusion meant that more people were able to get assistance from the state.³⁰

²⁷ Later abbreviated to hibakusha. This categorisation has later been expanded to include people exposed to radiation from nuclear weapons.

²⁸ In this way, through the use of the term hibaku seizonsha in the ABCC survey, the ABCC can be seen as influencing the creation of this survivor category (Naono, 2019). *Hibakusha* has since been used by doctors, law, public settings, and was the term used by my interviewees as an identifier of their experience.

²⁹ This returned independence to Japan.

³⁰ The 1957 Atomic Bomb Survivors Medical Care Law officially defined hibakusha as a category and made them eligible for medical assistance sponsored by the Japanese state.

Categorisation as provided under the 1957 Medical Care Law states hibakusha must meet the one of the following conditions:

- (1) Those who were in the city of Hiroshima or Nagasaki, or environs stipulated by government ordinance, at the time of the bombing;*
- (2) Those who were in the areas specified in Clause 1 and stipulated by government ordinance within a period of time stipulated by government ordinance;*
- (3) Those who were in a situation causing them to be exposed to the injurious effects of radioactivity from the atomic bombs at the time they were dropped, or subsequently;*
- (4) Those who were in utero of people who fall under one of the conditions specified in Clauses 1, 2, and 3. (Naono, 2019, p. 336)*

This law enabled individuals to be eligible for state-sponsored medical assistance if they met certain criteria. Approval of an applicant is determined by the potential of having been affected by the atomic bombing's effects and radiation (Naono, 2019; Todeschini, 1999). The Medical Care Law recognised radiation as setting atomic bomb injuries and illnesses apart from other types of harm, and helped individuals who were possibly affected by radiation, as opposed to using supposed scientifically rigorous qualifications to determine exposed populations (Naono, 2019). Biomedical terminology became a force that shaped the definition of hibakusha. As detailed earlier in this chapter, it was through the ABCC's survey on the exposed population's genetics that 'hibakusha' emerged. Although this law recognised exposed survivors as a group and provided them with subsidised medical treatments and health checks, it does not offer social assistance funds for hibakusha or compensation for bereaved families (Naono, 2019).

Yokota (2013) commented that it is important to recognise these distinctions which have been noted in the above law, as it allows for more inclusive definitions which acknowledge both the effects of nuclear weapons and nuclear radiation. According to the above categorisation, those present at the time of the bombings, babies in utero, and individuals exposed to radiation from the atomic bomb are all considered hibakusha, which is why I included people from these groups in my research. The term hibakusha created a new identity category which has been used to define the group and develop a sense of belonging which is seen in Chapter 5 and 6.

Survivor's health book

In the discussion chapters I examine the role of the survivor's health book in my participants' experiences. The A-bomb Survivor's Health Book provides paid medical assistance for hibakusha who meet the criteria as stated in the 1957 Medical Care Law (The City of

Hiroshima, 2020). As well as providing medical assistance, the booklet was used by some of my participants to get discounted and free entry to certain locations around Japan. As explained by one of my participants Okamoto,

It does not mean that that will cover 100 per cent we have our regular national insurance which covers most of our medical payments. Usually, people have to pay 30 percent out of pocket, but that 30 percent is the part that is covered by this health book. So, making it 100 per cent for the survivors with the health book.

Okamoto showed me his A-bomb Survivor Health Book which his mother applied for when he was sixteen years old. He explained that as part of his application, two witnesses were required to attest to his location at the time of the bombing. Although hibakusha are still able to apply for the book, Okamoto raised the point that,

some of them [hibakusha] did not apply at the time but it is now 70 years later, and a lot of people are losing their witnesses because, you know, they are getting old. So, now if you can... find a different way you can prove that you were in the city and the government approves of it then you can get the health book.

Futagawa, another participant, who was also a survivor of the US atomic bombing of Hiroshima, had a different experience when getting his health book.

My mother never applied for this book which is a certificate of A-bomb survivors — that's hibakusha for us, because she did not want us to be discriminated against or experience prejudice as A-bomb survivors. Never applied for. I think that she did not want us to be labelled as hibakusha, so, I applied this book myself when I was 36 years old.

The A-bomb Survivor's Health Book can be seen as both positive and discriminatory. This health book is positive as it provides medical assistance and support to hibakusha who fit certain criteria; however, it can also cause discrimination as it is a marker which identifies the individual as hibakusha [read 'damaged'].

The categorisation used to determine eligibility for the health book was raised in one late-night interview with my participant, Morikawa. He spoke about his experience being exposed to radioactive fallout through the black rain, and said people exposed to the black rain are 'lucky' if they get an A-bomb Survivor Health Book due to limitations which were put in place surrounding categorisation.

For example,

the government have drawn a line and said if you are in this line you can have one of these because you know, they think it's the area that the black rain fell. But the truth is, the black rain fell outside of that line as well. -Morikawa.

Recognition that there have been many individuals affected by the black rain who cannot apply for the book was one of the points which Morikawa made. "I think this is a situation of unfairness, but the government... had to decide some rule." Morikawa discussed how he had to allow the government to see his medical records as proof.

Morikawa:

And when I applied for the A-bomb victims note, or health note I attached the certificate of the medical treatment issued by the doctor, so my officials at Hiroshima city office issued it based on that application and certificate. They issued this note. And regarding the money, the cost of the inspection or check-ups, health check-ups — they are free, every six months, no need to pay any cents. And treatment, the holders of this blue note have to pay the money for treatments — injection, pill, everything. But once the victim's office issued the A-bomb victims with this [Shimasaki says: 'the pink one' to clarify which A-bomb Survivor Health Book³¹ is being shown] everything is free.

Shimasaki:

Ok, so there is different support depending on your circumstances.

Morikawa:

Yeah. My treatment, currently, is an injection here to abdomen 60,000 yen — free of charge... Every 12 weeks-time I have to go to the doctor.

Introduction of the 1957 Medical Care Law following the atomic bombings, has been beneficial for some of my participants as it acknowledged the physical harm they suffered, and provides them with paid medical assistance.

³¹ Morikawa explained that the colour of his A-bomb Survivor Health Book changed when he was diagnosed with cancer.

In 1995, a more comprehensive Hibakusha Relief Law was passed, and one of the changes created official guidelines for defining hibakusha (Atomic Heritage Foundation, 2017). According to this law, people within two kilometres of the blast, and those who visited the area within two weeks are considered hibakusha, which would have amounted to a surplus of one million hibakusha at the war's end (Atomic Heritage Foundation, 2017).

Scientific subjects

The atomic bombings were the first time that a large and homogenous population were exposed to radiation. Researching the effects on those exposed and their offspring became an area of contention in the years following. The US' President Truman formally established the ABCC, a pure research institute, in 1947 (Atomic Heritage Foundation, 2017) and they collected data on close to 14,000 victims (O'Malley, 2016). Participation in research by the ABCC was impacted by cultural insensitivity with the permanent research facility located in the centre of the city on top of Hijiyama Hill which was a difficult climb, and in the early days there were no 'appointments', magazines or food available (Hashizume, 2019). Hashizume (2019) recalled how US Army jeeps began picking up survivors from around the city and they appeared before her, virtually taking her to the ABCC 'by force'. "It was a deeply humiliating experience, with none of the human contact that would normally exist between a doctor and his or her patient; we were simply treated like objects." (Hashizume, 2019, p. 109).

Under the ABCC there was a lack of trust and contention between American and Japanese doctors due to language barriers and the condescending attitude of Occupation administrators as every Japanese letter, publication, and manuscript required submission to the Occupation approval committee (O'Malley 2016). Over 1,060 people were employed by the ABCC, 148 of them American (O'Malley, 2016). Its purely scientific focus raised concerns as physicians were prohibited from treating the injuries they studied since individuals were considered scientific subjects, not patients (O'Malley 2016; Todeschini, 1999). The purely scientific focus of the ABCC is seen in Chapter 6 where Moriguchi Mitsugi a participant I spoke with in Nagasaki, discussed how one of his family members had a deformed baby and was asked by the ABCC to donate the baby's body to research.

Despite emphasis being purely scientific, some scientists and physicians defied the Occupation administration's no-treatment policies and distributed medicine and toiletries (O'Malley,

2016). As the only institute able to conduct studies, the ABCC had a monopoly, and the censorship on top of this meant little information about the research was made available (Atomic Heritage Foundation, 2017) which was instrumental in medical laws pertaining to hibakusha (Todeschini, 1999). Early communication was that there was low expectation of mutation among hibakusha and their offspring. As O'Malley (2016) raised, this could be interpreted at the time as whitewashing the harm caused by the bomb. The data, when initially analysed in 1952, showed that the genetics data from the ABCC, when taken in aggregate, was inconclusive (O'Malley, 2016). These findings were published in *Science* on November 6th, 1953 and brought an end to epidemiologic data being gathered on children and pregnant women (O'Malley, 2016). Final and complete results of the genetics study were published in 1956 by the National Academy of Sciences [US], and it was through this report that the scientific community became aware that the publication from three years prior had not told the whole story (O'Malley, 2016). The complete report, "detailed increased mortality for exposed survivors and illustrated the need for increased mortality surveillance among the Hibakusha." (O'Malley, 2016, p. 528/9). The US recession, inflation, and declining dollar value resulted in budget pressures for the ABCC, and in April of 1975, the ABCC became the Radiation Effects Research Foundation [RERF] (O'Malley, 2016). RERF continued the work of the ABCC, and is jointly run by Japan and the US, equally funded,³² and a bi-national structured organisation which conducts research and studies for peaceful purposes (O'Malley, 2016, p. 529; Todeschini, 1999).

Censorship

The Civil Censorship Detachment [CCD], commonly known as the 'Press Code' was officially in effect from September 19th, 1945, until the end of the occupation in 1952 (Atomic Heritage Foundation, 2017). This Press Code operated to prevent disruption of 'public tranquillity' which could arise from reporting on topics such as the Occupation, the atomic bombings, and effects of radiation (Atomic Heritage Foundation, 2017; Naono, 2019; Todeschini, 1999). Under this Code, the US occupation authorities prohibited Japanese medical researchers publishing scientific articles on effects of the atomic bombing (O'Malley 2016). Censorship which was imposed inhibited the public from learning about atomic bombs, their impacts, and prevented open flow of sharing experiences with others. As a result, images could not be published, and the impact of the bombings were largely unknown as they were not set apart

³² Funded by the Japanese and American governments (O'Malley, 2010).

from other wartime devastation. After implementation of the Treaty of San Francisco³³ on April 28th, 1952, there were new opportunities for hibakusha to share their stories through images and publications (Atomic Heritage Foundation, 2017; Olesen, 2020). Providing new opportunities to remember Hiroshima and Nagasaki, the book market became ‘flooded’ with testimonies, images, and short stories (Marcón, 2011, p. 789 as cited in Olesen, 2020). It is crucially significant then to acknowledge the moment when images were viewed that showed the atomic bombing’s effects. This ‘revelation of the images’ became part of the process which shaped Japanese cultural trauma by assisting in the development of memory within Japanese society which was previously censored by the Occupation (Marcoñ, 2011). As Marcoñ (2011) noted, despite the bias of photographic images, they provide a confirmation written texts cannot and certify their presence in the past.

In March of 1954, following the US hydrogen bomb test on Bikini Atoll, it emerged that the Lucky Dragon 5 Japanese fishing crew were exposed to nuclear fallout (Chappell, 2020; Olesen, 2020). Crew suffered from acute radiation syndrome and, “the boat’s chief radioman, Kuboyama Aikichi died on 23 September 1954.” (Naono, 2019, p. 341). Following Aikichi’s death, public awareness of the incident and radioactive contamination of fish and rain caused a re-evaluation of the atomic bombings of Hiroshima and Nagasaki. This in part led to movements calling for prohibition of nuclear bomb tests. These movements built on a re-symbolisation of Hiroshima as ‘national trauma’ (Olesen, 2020, p. 89).

Post-atomic bombings

The use of the atomic bombs in Hiroshima and Nagasaki changed warfare. Although nuclear weapons were first used by the US on August 6th, 1945, they have subsequently been developed and tested by other nations (Tubanavau-Salabula, Namoce & Maclellan 1999). Concerns over the US monopoly of nuclear weapons prompted other world powers to develop their own³⁴ (Tubanavau-Salabula, Namoce & Maclellan 1999; Weeramantry 1987). For four years the US held this monopoly, until August 29th, 1949, when the Union of Soviet Socialist Republics [USSR] became the second nuclear power state (Weeramantry, 1987). Currently, there are nine nuclear-armed states, the US, Russia, United Kingdom, France, China, India, Israel, Pakistan, and North Korea. The first five states listed are members of the United Nations

³³ Officially ended the US-led Allied Occupation of Japan and is also known as the San Francisco Peace Treaty.

³⁴ The transfer of classified nuclear technology and research was banned in 1946 with the passing of the McMahon Act by United States Congress.

and have signed the Treaty on the Non-Proliferation of Nuclear Weapons [NPT]. The stockpilage and development of these weapons (as recognised by Beach, 2003) is the result of a technology push as opposed to a demand pull. At its highest point, the nuclear stockpile of the US had an explosive yield of nine billion tonnes — reaching far beyond what a ‘rational’ person would consider useful (Beach 2003, p.33). Acknowledgement of these weapons and the harm they can cause is vital for understanding the impacts that they have had since 1945.

Nuclear weapons

Nuclear weapons development and use has faced opposition by individuals, groups, and campaigns such as the International Campaign to Abolish Nuclear Weapons [ICAN] (Rees, 2003; Wittner, 2010). Similarly, introductions of treaties and local policies have prevented the proliferation, testing, use, and development of these weapons. In 1963, the Partial Test Ban Treaty [PTBT] aimed to prevent testing in the atmosphere, under water, and outer space³⁵ (Murray, 2003). In 1968, The NPT was introduced to promote peaceful use of nuclear energy and avoid the spread of these weapons and their technology (Murray, 2003). All nuclear tests were banned under the 1996 Comprehensive Nuclear-Test-Ban Treaty [CTBT], and the 2017 Treaty on the Prohibition of Nuclear Weapons [TPNW] is the first international legally binding agreement to comprehensively prohibit nuclear weapons. As part of the TPNW, nuclear weapon development, testing, possession, deployment, threaten of use, and stockpile are prohibited (United Nations Office for Disarmament Affairs., n.d.). This Treaty is significant to my research and beneficial for those who have been affected by nuclear weapons, as one of its articles, 6.1 recognises,

the suffering and harm caused to the victims of nuclear weapon use and testing as well as the impact on indigenous peoples and the environment. A State Party with individuals under its jurisdiction who are victims of nuclear weapon use or testing must provide them with medical care, rehabilitation and psychological support, and provide for their socio-economic inclusion. (International Committee of the Red Cross, 2017)

This relates to victim assistance as it provides them with a framework to base claims of assistance upon. The TPNW is the first treaty to address humanitarian consequences of nuclear weapons use and tests through inclusion of provisions such as the above article (International Committee of the Red Cross, 2017). It should be recognised that Japan currently is not a

³⁵ Some countries which did not sign this treaty continued to conduct atmospheric tests. France moved their testing underground, with their last test on January 27th, 1996 — the same year as the introduction of the Comprehensive Nuclear-Test-Ban Treaty.

signatory state or state party therefore, Japanese hibakusha are unable to use this treaty for assistance under its current status. However, there are supports for hibakusha in Japan such as the Medical Care Law which has been raised earlier.

Conclusion

Many factors, which are beyond the scope of my thesis, led to the indiscriminate atomic bombings of Hiroshima and Nagasaki which caused extensive harm to people and the environment. Hibakusha represent the only group of individuals which have experienced atomic weapons use in warfare and the subsequent impacts. Participants in my research have spoken out and some are working towards the elimination of nuclear weapons. It is important to recognise that debates surrounding the history and use of these weapons do not change the human impact and devastation which was caused.

CHAPTER 3

METHODOLOGY

This chapter on methodology focuses on the qualitative methods which I used, scope of the research, participants, and fieldwork. This chapter aims to show how my research was conducted. I begin by explaining my use of ethnography, oral history, interviews, and narrative analysis, in the consideration and exploration of my participants' experiences. In 2019, I did fieldwork in Tokyo, Hiroshima, and Nagasaki, Japan. Being in the field had both benefits and challenges to the research which are discussed later in this chapter.

Method

Ethnography, oral history, interviews, and narrative analysis have been used in this research on nuclear narratives from Hiroshima. While conducting fieldwork in Japan I found that, like Portelli (2011, p.7), "I was there not to study them but to learn from and about them. It was what I didn't know that encouraged people to talk to me, knowing that they were helping instead of being "helped." Taking a collaborative approach with the participants in the interviews was beneficial, allowing them to have a role in the formation of what was shared and discussed.

To gather a holistic understanding of events and stories I also utilised physical locations, books, articles, photographic images, drawings, and objects. Locations such as the Hiroshima Peace Memorial Museum and the Peace Memorial Park enabled consideration of how the atomic bombing is remembered. Biographical texts were particularly useful when examining events and experiences of the bombings. Photographs and drawings were beneficial for visualising narratives, with most of the participants sharing images of their families which made the stories I was hearing relatable and easy to follow. Photographs are a powerful medium and can be used to understand circumstances arising from the atomic bombing³⁶ (Ives, 2020). One participant, Kajiya Fumiaki was particularly performative speaking at the World Friendship Center and brought along large painted images which added a visual stimulus to his discussion. This interview and its performative aspects are examined later in this chapter. In an interview

³⁶ To view examples of powerful images, refer to Ives' (2020) article at <https://www.nytimes.com/2020/08/06/world/asia/hiroshima-nagasaki-japan-photos.html>, and the photographic book, *Hiroshima-Nagasaki. A Pictorial Record of the Atomic Destruction*.

with Ueno Teruko, it was helpful to allow her to draw a map of her surroundings as it showed key locations raised in her oral history — This map is seen later in Chapter 5, Figure 9. Photographs and other forms of imagery were also accessed through books both purchased at the Hiroshima Peace Memorial Museum and borrowed from the Disarmament and Security Centre Aotearoa/ New Zealand. Having the opportunity to connect images with experiences was helpful to see the impact of the bombs on both people and places.

Three other objects were additionally recognised as eliciting narratives in this research; the A-bomb Survivor Health Book, Manga, and a blouse which belonged to the sister of one of the participants, Futagawa Kazuhiko. Discussion of the blouse pictured below [Figure 7] revealed the traumatic nature of the atomic bombing, long-term suffering, and how objects can be a means for remembering.



FIGURE 7: BLOUSE OF ATOMIC BOMBING VICTIM. DONATED BY FUTAGAWA KAZUHIKO. COLLECTION OF THE HIROSHIMA PEACE MEMORIAL MUSEUM

This is the blouse which Futagawa speaks of, that belonged to his sister Sachiko Futagawa (then, 13), a first-year student at Yamanaka Girls High School.

Futagawa:

Only four years ago my older sister found an old small blouse wrapped in white paper in the back of the chest of drawers [Futagawa shows an image of what he is discussing]. The chest of drawers was a memento of my mother's... this is a spare school blouse belonging to my elder sister. I was so surprised when I saw it. My older sister must have been wearing an identical blouse when the A-bomb was dropped. And then, it was the only thing left that belonged to my sister. My mother must have [looked after it carefully] because she didn't have my sister's ashes. When I saw the uniform, I was so shocked, I felt pain, regret, and I was sad. And then I donated this blouse to Hiroshima Peace Memorial Museum...

Shimasaki:

I think this blouse was the one I saw yesterday.

Futagawa:

Ah I see, that is great, I see. So why did my mother keep this uniform for a long time? So, what does she think about it? I wonder why she didn't talk about it, didn't talk about it, never [emphasis]. So, I now understand why my mother didn't tell me anything about the A-bomb and my father and elder sister. It was because the depth of her sadness was too deep. So, she couldn't talk about it. This small hidden blouse of my sister's tells me how sad the suffering of my mother was and so this tiny blouse shows everything about the atomic bombing that caused unspeakable human suffering. I will say, and now, many survivors are still suffering from the after-effects of the atomic bombing today.

Through the collaborative use of the interviews and oral histories alongside other objects and works, I was able to gather a more holistic understanding of my participants' experiences. The example above is testament to this, as I had visited the Memorial Museum and this blouse, which was part of Futagawa's testimony, had been an item which I had stood looking at due to its poignancy. Pairing what I had heard with what I had seen added another aspect of awareness.

Visual supplements

Every participant in this research used visual supplements such as maps, images, or drawings to accompany their oral history. Maki Junji utilised a map from 1945 to show the hypocentre [an area labelled in red — 2 kilometres] and lines which expanded from that point in 500 metre segments. Maki's junior high school, Hiroshima First high school [now Kokutaiji high school] was 900 metres from the hypocentre. Through his inclusion of this map, I was able to define his location at the time of the bombing. This understanding is significant as it showed where individuals from his school were sent to work, and how this impacted on whether they lived or died.

Morikawa also used a visual supplement, *Manga*, produced by NHK Hiroshima Broadcasting Station to accompany his father's story. The comic strip tells the story of those at the Hiroshima Broadcasting Station, with Morikawa's father being one of the main characters. This strip was extremely useful when hearing the story of Hiroshi [Morikawa's father], as it provided a way to envision his experience and the damage caused to Hiroshima.

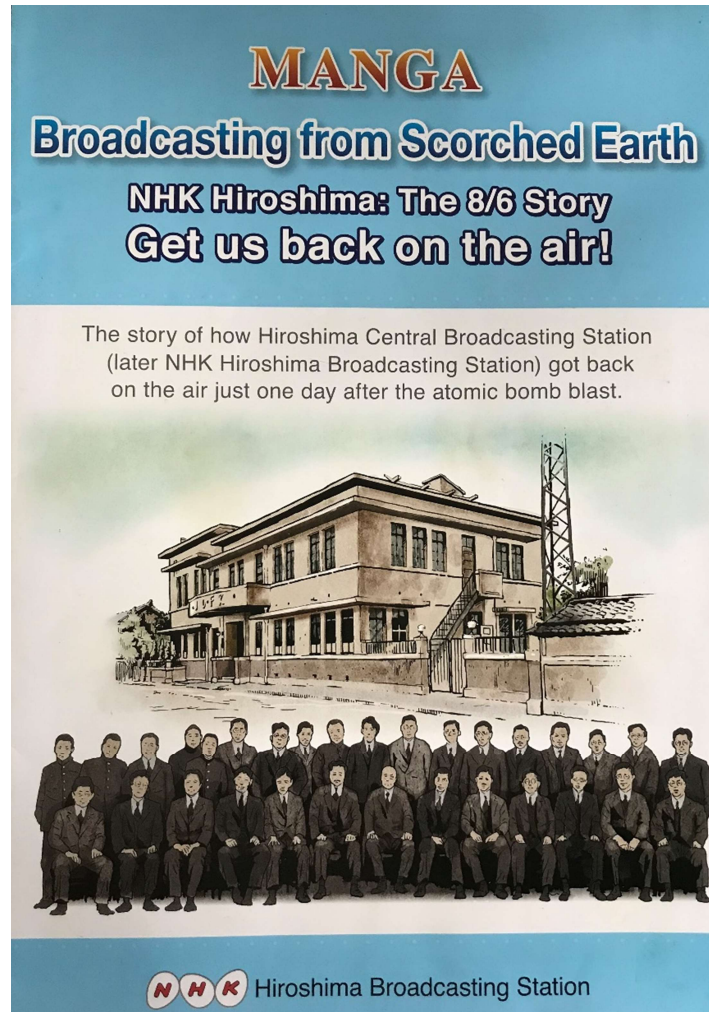


FIGURE 8: MANGA. BROADCASTING FROM SCORCHED EARTH
Cover of Manga which tells the story of Morikawa's father among others from Hiroshima's central broadcasting station. This comic strip is produced by NHK Hiroshima (December 2015).

On the morning of August 6th, Hiroshi was at the Hiroshima Broadcasting Station, and escaped the bombing with a sprained ankle. Amidst the destruction, 34 staff members from the building were killed.

Morikawa said,

Hiroshi and his staff members who survived tried to inform the situation to the neighbouring stations of what happened in Hiroshima. However, because of no power supply, they gave it up and decided to evacuate the burning building, to the transmitting stations 5 kilometres away to the north... Arriving at the transmitting station in the afternoon they tried to inform the situation to the neighbouring station. They barely connected with Okayama station from Hiroshima station and then they successfully dispatched the first message that Hiroshima was annihilated and 170,000 were killed. You know, 170,000 it came from the half the population of the city because 350,000 is the approximate population of the city at the time. So, during the escape to the transmitting station they thought half of the population would be killed. So, they made the number that 170,000 were killed... However, the imperial headquarters in Tokyo didn't believe that one bomb killed 170,000 and then the message did not go up to the emperor.

The visual nature of the Manga showed Hiroshi's experience in detail, placing it within the wider narrative of the atomic bombing. It showed how Morikawa's father and other broadcasters were the first people to relay the message of the atomic bombing. Inclusion of visual supplements was useful for gaining an understanding of experiences, providing a physical means to see the places and people that my participants discussed.

Ethnography

This research uses an ethnographic approach which is a distinctive research method in anthropology (Marcus & Fischer, 1986). My research was conducted in the 'field' and incorporated gatekeepers, entering settings, interviews, fieldnotes, transcriptions, analysis of findings, and written results (Heyl, 2011). In ethnography, focus is often placed on cultural meanings and actions being developed and understood within spatial and cultural settings (Heyl, 2011; Kondo, 1986). Through participation and observation in my own research I was able to examine phenomena in their contexts. Use of an ethnographic approach was beneficial since it enabled discussion of topics which had not been identified prior to entering the field and allowed for a range of formal and informal interactions with participants.

Narrative analysis

Narrative analysis is an element of ethnography which is beneficial for comprehending lived experiences and how informants understand their world (Cortazzi, 2011). This qualitative research method provides a means for the researcher to interpret stories within the research context and inquire the functions that they serve, how they are structured, and ways in which

they are performed. Narrative analysis examines “participant roles in constructing accounts and in negotiating perspectives and meanings” (Cortazzi, 2011, p. 2 of 20). As Narayan (1993) said, narratives are told for a particular purpose. Therefore, it is important to acknowledge that “the same story given to different audiences can have different purposes” (Cortazzi, 2011, p.7 of 20). This interactive process also applies to the researcher and informant scenario where there is a negotiation of perspectives and meanings (Cortazzi, 2011). As I do not speak Japanese and am not culturally or socially fluent, it might have impacted my interviewees’ narrations and choice of language used in explaining their experiences. Through the use of narrative analysis, I considered the functions of the stories I was told, and the meaning and importance that they had to the teller.

Performance

The performative aspect of the narratives was evident in the oral histories that I gathered while conducting my fieldwork in Japan. As Abrams (2010) noted, oral history is a performance of words that is separated from regular speech and is presented for a purpose. “A performance, in socio-linguist Richard Bauman’s words, is an ‘aesthetically marked and heightened mode of communication, framed in a special way and put on display for an audience’. Using this definition, all oral history interviews are performances.” (Abrams, 2010, p. 132). I examined narrative performance in all my interviews, as a way to look at *how* things were said, as well as *what* was said.

One of the research participants Kajiya, illustrated the performative aspect of narration. He made use of voice, expression, gestures, and grammatical features to create meaning for his audience. Kajiya’s oral history was held at The World Friendship Center in Nishi-ku which is located on a side street that runs adjacent to Tenma River. With curtains closed, and a semi-circle of expectant guests dotted around the joined dining and lounge room on chairs, pillows, and the floor, I listened carefully. The translator sat to my right and Kajiya was directly in front poised on a seat. Beside him were large images that looked carefully hand painted and would reach above the hips of most people when placed on the ground. Kajiya’s use of props as well as voice were some of the conventions used to frame this as a narrative performance. Erving Goffman (as cited in Abrams, 2010, p. 134) described these conventions as ‘keying’ which include contextual features, speech styles, and ways in which things are said. As Kajiya talked, he changed the emotive images to add further depth to his story. When he spoke about the aftermath of the atomic bombing, he shared images of his collapsed house, the mushroom

cloud, burn victims, and destruction. Later he showed a painting of his deceased sister lying on the grass. It was through adding visual elements to his already performative and expressive account that I was able to grasp his perspective.

Despite not speaking English, Kajiya's performative and emotional talk captivated the room in which many people were foreigners and did not understand the Japanese language. When I glanced at the audio recorder to ensure it was still running, I would look back up to see every eye in the room on him. The noise he made to describe the bombs was an emphasised, harsh, 'dun.' The noise, drawn out, even now, is clearer than day. Once he finished telling his story and after a round of thanks, the aged man stood slowly and came around to meet those of us who listened to what he had to say. He smiled at me; an interaction which did not require words but spoke so much of his feelings. Kajiya's story was heightened through use of large images and onomatopoeia. Consideration of the performative aspect of oral histories and interviews showed how the narrator could 'tailor' their narration to the audience. Recognition of this made me consider how and why the stories in my research were told.

Autoethnography

During this research I recognised, like Reed-Danahay (2011) that typically, self-disclosure of the ethnographer is less common and acceptable than that of the participants. Although the purpose of this thesis is to collect the experiences and oral histories of those associated with the atomic bombing of Hiroshima, there is an influence from autoethnography regarding aspects of reflexivity and placement of myself within the field. Autoethnography is a style of ethnography which Reed-Danahay (2011, p. 2 of 36) viewed as a prominent genre of writing where, "professional researchers incorporate their own personal narratives into their ethnographic texts." Murphy and Dingwall (2011) similarly viewed autoethnography as presentation of an author's interactions, events, and relationships. Through reflexivity I have been able to consider how the research emerged, my role in it, and integrate these into the discussions. Using autoethnography enabled me to talk about my journey and connect with stories of the A-bomb participants. Through the interviews, I not only learned about the experiences of hibakusha, but it also provided a means of personal rediscovery. This research is primarily participant-focused, yet there is importance in recognising the personal experience of the researcher in the fieldwork.

Status of the researcher

Participant observation incorporated scientific analysis and personal experiences where I moved between an insider and outsider status (Clifford, 1983; Emerson et al., 2011; Madison, 2012). Potential for the shifting status of the researcher while in the field, shows the complexities of lived interactions. When entering the field, advantages and challenges stemmed from the fact that I am of Japanese ancestry with a Japanese surname. My surname, Shimasaki, was beneficial for entering the field as it opened dialogue when translators and interviewees questioned my name, if I had visited Japan prior to the research, and asked where my family originated from. Questions built relationships and allowed for conversation to begin in a more informal way. This ‘insider’ status could then shift as I do not speak Japanese or live in Japan. Like Kondo (1986; 1990), who similarly conducted her fieldwork in Japan, I also held a liminal status whereby I was not a complete outsider due to my Japanese heritage and surname, but I did not hold a certain level of linguistic or cultural skills. Another challenge was that participants may have assumed I had extensive knowledge and understanding of Japanese customs, and both verbal expression and body language. Therefore, there is potential that I might have missed some social and verbal cues. My identity as both an ‘insider’ and ‘outsider’ posed benefits and challenges while in the field.

Ethnographic field

The ethnographic field is a conception which has been assumed differently in various qualitative methods ranging from a geographical location in classic ethnographic naturalism, to ethnomethodology’s field being, “wherever reality-constituting interaction takes place” (Gubrium & Holstein as cited in Emerson et al., 2011, p. 6), and postmodern conceptions which displace the field with a fixed spatial location (ibid). For the purpose of my research, the field refers to the places in which interaction occurred.

Interview locations

Both Tokyo and Hiroshima cities were central locations to the research, and interviews in Nagasaki and New Zealand are also noteworthy in illustrating impacts resulting from the use of nuclear weapons. The first three interviews took place in Tokyo with individuals who relocated in the years since the 1945 atomic bombing of Hiroshima. Despite their physical distance from the location of the event at the time of the interviews, they chose to contribute to the research by sharing their testimonies, speaking with me, and spending informal time together at dinners and sightseeing. The location of these oral history interviews was in the

number two conference room on the third floor of the IKE Biz building in Nishi-Ikebukuro. These initial interviews were followed by a meal at an underground restaurant close to the interview location. The following ten interviews were conducted within Hiroshima city at Hachidori-sha café, the Hiroshima Peace Memorial Museum, ANT-Hiroshima, and the World Friendship Center. Although the focus of this research is on Hiroshima, an interview in Nagasaki with Moriguchi Mitsugi, visiting memorials, and seeing the Nagasaki National Peace Memorial Hall for the Atomic Bomb Victims with Maekawa Tomoko [interpreter/translator in Nagasaki] were significant for understanding the impact that both bombings continue to have today. Traveling to Japan to conduct my fieldwork was important for developing a relationship with my participants.

Ethics

My research began with an application to the Human Ethics Committee at the University of Canterbury in 2018. This application recognised rights of both myself and my research participants (Berreman, 2007; Murphy & Dingwall, 2011). From this process, questions surrounding ethics arose including, confidentiality, entering a field with different social and cultural customs, nature of topics to be discussed, and transcription. These concerns were all considered in my ethics application. Informed consent was sought before, during, and after data collection, and recruitment was only available for those aged over 18 who were able to represent themselves. A digital recording device was used at all of my interviews and oral histories to enable transcription and analysis at a later stage. At the beginning of the interview each individual was made aware that the recorder was turned on and then turned off after the interview's completion. At any stage with the participant's request, the recorder was turned off — this occurred several times throughout my research regarding confidential or personal information which they did not want recorded.

Murphy and Dingwall (2011) acknowledged that within a research setting there is an inability to ensure complete confidentiality. This was especially relevant with my interviews as there were times when the participants would interact with one another, making confidentiality difficult. After a day of interviews and hearing oral histories from three participants in Tokyo, a group of six of us went out for dinner and drinks where we sat around a table in dim lighting talking about life, while nibbling on western and traditional foods. In ethnography having opportunities to spend informal time with the participants is important, giving insight into their culture and broader lives. Confidentiality in terms of their identity could have been difficult to

maintain since the participants knew each other and their backgrounds. Although confidentiality can be a challenge in ethnographic research, this concern is not of such relevance to my research as every participant gave permission for their names and interviews to be used. Reasons provided for using their names were that people wanted to share their stories and have what they said attributed to themselves.

Another ethical issue was appropriate navigation of social and cultural customs in Japan. Although there might have been cases where I was unaware of social or cultural expectations, I tried to mitigate moral or cultural offence by talking with my own Japanese family about culturally appropriate behaviour, discussing expectations with translators and hosts prior to arriving in Japan, and having translators present when I met with participants. Potential for mental and emotional harm to the participants was another ethical concern arising from the nature of the topics which were discussed. This harm was addressed in my human ethics application as processes were put in place to mitigate risk including, voluntary and informed consent, ability to withdraw from the research at any time, and provision of a list of local support services if needed. Copies of interview transcripts were sent electronically via email to all participants enabling them to check accuracy and add comments.

Sampling

I used purposive and snowball sampling to gather participants for my research. Two individuals and two organisations were purposively asked if they would like to participate as their characteristics meant they were a good fit for the research. From this, snowball sampling occurred where those research participants recruited others to participate. Incorporation of both snowball and purposive sampling provided a means to identify and contact the thirteen participants [sixteen including Moriguchi Mitsugi who was nine at the time of the atomic bombing of Nagasaki, and two New Zealanders, Roy Sefton³⁷ and Ruth McKenzie with Operation Grapple links.]

Consent to use names and images

Consent to use names and images which are included in this thesis has been provided by my participants. Their names are important in terms of identity. As stated on page ix, Japanese names have been used in the format, surname, first name, and English names are written as

³⁷ Roy has a QSM and affiliation to New Zealand Nuclear Test Veterans' Association.

first name, surname, according to cultural conventions. Throughout the research informed consent to use names has been sought and approved by my participants. Those who have contributed to this research provided consent to use their names and images as they desired to have their stories and opinions heard.

Participant details

My research participants consisted of both males and females across a variety of ages and locations. They also allowed for several positions to be examined with regard to the bomb. Criteria for inclusion in the research were: the individual is hibakusha or a direct family member, or they have professional knowledge and experience working with hibakusha. Families were included as they have a role in sharing memories which are passed down. Allowing professional voices is significant since they have understanding on the bombing and can impact what is officially known about hibakusha through publications and knowledge-sharing.

In total there are six female participants: Yamada Reiko, Nobuko Sugino, Ueno Teruko, Ogura Keiko, Higashino Mariko, and Dōune Hiroko. The seven male participants are: Miyake Nobuo, Morikawa Takaaki, Okamoto Tadashi, Maki Junji, Kajiya Fumiaki, Futagawa Kazuhiko, and Dr. Kamada Nanao. Ages ranged from late 30s to 89 years, with the majority of participants in their mid-70s to early 80s. Eleven participants told stories of their experiences of the atomic bombing and those close to them. Some recalled what they remembered about life before the bombing, at the time, and immediately after. One hibakusha, Futagawa, was in-utero at the time of the bombing and was born eight months later. Higashino was also included in this research as a second-generation hibakusha born in September of 1952. She is a licensed A-bomb legacy successor, who passes the story of her mother onto the next generation.

The two other individuals, Dōune³⁸ and Dr. Kamada have worked with hibakusha in their careers. Dōune, a woman in her late 30s photographed over 70 families with third-generation hibakusha. She was included in the research as she has experience recording and conveying atomic bomb experiences to younger generations via her images of hibakusha (Jiji, 2018). As Dōune said, “Now is the only time when we can listen to their stories” (Jiji, 2018). Dr. Kamada

³⁸ Dōune passes on experiences of A-bomb survivors by photographing third-generation survivors. Her photobook, *Live and Connect*, can be purchased from <https://3rdproject.official.ec/>.

has treated survivors of the atomic bombing of Hiroshima for over 50 years. His extensive knowledge of the group, and work on writing educational material and personal encounters as the chairman of the Hiroshima A-bomb Survivors' Relief Foundation made him another valuable participant.

Scope of the research

Scope of my research began broadly by examining people who had experienced exposure to radiation at Hiroshima, Nagasaki, and the nuclear test series Operation Grapple³⁹ in the Pacific. Focus then narrowed to examination of experiences from the atomic bombing of Hiroshima, allowing for inclusion of hibakusha's family members and professionals who have worked with the former groups. To allow for comparison where relevant, insight into experiences is drawn out in the discussion from a translated interview with a male hibakusha from Nagasaki and two individuals from New Zealand associated with the 1957/1958 Operation Grapple nuclear test series.

In total there are thirteen individuals who provided narratives on the atomic bombing of Hiroshima. As mentioned later in this chapter, in nine cases where respondents did not speak English, an interpreter/translator was used. Of the thirteen participants, four provided their narratives in English, only requiring minimal support with the questions that were asked. Regular contact with the translators was kept in advance of arriving and details such as locations for interviews, dates, and times were all arranged. After arrival in the field, I met with each individual in the agreed locations where we talked about their experiences and answered questions face-to-face.

Translation

Translation is an integral aspect of my fieldwork. Conducting research which incorporated verbal and written [information sheets and consent forms] translation presented challenges as it could impact the research and findings. During my fieldwork I had three interpreter/translators for the narratives shared about the atomic bombing of Hiroshima. One interpreter/translator Hirata Michimasa was used for the three participants in Tokyo and is himself a hibakusha. Koizumi Naoko, another interpreter/translator was used for the interview

³⁹ Operation Grapple was a series of nuclear weapons tests held by the British in the Pacific near Christmas and Malden Islands in 1957 and 1958. 551 New Zealand personnel were present at these tests.

with Dr. Kamada and Ueno. The final interpreter/translator,⁴⁰ spent a significant amount of time with me in Hiroshima and was present at the eight other interviews and oral histories. These three individuals contributed greatly to my research, and through their roles made this thesis possible. Even prior to arrival in Japan they had roles in cultural intermediacy and advice, and where appropriate, were key members of the research team.

Each translator brought their own understandings to what was said, creating potential for them to leave a mark on the research (Larkin et al., 2007; Temple & Young, 2004). Questions and discussions with participants were translated from English to Japanese, and then back from Japanese to English, showing potential for loss or slippage in translation. Temple (2002, p. 846) showed this by stating, “There is no one correct way of translating. Translation is more than an exchange of words from one language to another. Translators, as much as researchers, produce texts from their own perspectives.” There can be subtle differences in meaning between languages, and some words may not be translatable (Kapborg & Berterö, 2002). Therefore, this research aimed to address the above challenges by acknowledging the triad of interviewer, translator, and respondent. Choice of jargon-free language, incorporating non-verbal communication [drawings, images], allowing enough time for translation, and clarifying what was said assisted with overall understandings. All translated interviews were audio recorded then transcribed. Translation posed a challenge to the research and was addressed through the above strategies.

Fieldnotes and transcription

For the duration of my research fieldnotes were taken in a small black embossed journal. “Fieldnotes are the traditional means in ethnography for recording observational data.” (Hammersley & Atkinson, 2007, p. 145). Often notes are taken as soon as possible after an observation and are a form of representation which is written down (Emerson et al., 2011; Hammersley & Atkinson, 2007). It was not possible to write in the journal during the day due to potential disruption which could impact relationships, however, when time permitted, fieldnotes were written at the end of each day. Over time, my notes became more detailed and concrete. Emerson, Fretz, and Shaw (2011) acknowledged that there is an aspect of selectivity on the researcher’s part when writing fieldnotes since they write about what is seemingly ‘significant’ while omitting other areas. Additionally, all of the speech and non-verbal

⁴⁰ This individual wants their identity to remain anonymous.

behaviours cannot be recorded. Therefore, Atkinson (1992 as cited in Emerson et al., 2011) noted fieldnotes are not a ‘complete’ record of what occurs. Despite above criticisms, fieldnotes were beneficial when used alongside other sources to create a holistic understanding of participants’ experiences and everyday lives. To accompany my fieldnotes, a digital voice recorder was used at each interview and oral history. As Portelli (2011) acknowledged in *They Say in Harlan County: An Oral History*, there is as much meaning in the way that things are told as there is in what is told. Some meaning may have been ‘lost’ in the performative acts of the oral history interviews but was addressed when revisiting the transcripts through my additions of observations, while trying to retain the spoken form, punctuation, and sentence structure. The transcript is an act of interpretation (Portelli, 2011) and reinterpretation (Clifford, 1983). It must then be recognised that despite the amount of time put into transcribing, the transcript cannot be neutral due to its interpretive aspects (Portelli, 2011).

Thematic content analysis

After completion of my fieldwork, I returned to Christchurch, New Zealand, to begin analysis of my findings. Collating and categorising the materials and recordings which I had gathered were the next steps in the process. Then began the journey of transcribing the English translations of the oral histories and interviews.⁴¹ Each interview lasted between half an hour to two hours excluding informal conversation with each participant. Interviews were hand-typed into my computer while starting and stopping the recorder, a process which took over two months to complete. Transcribing the interviews was beneficial for remembering narratives I had heard, and for consideration of themes that emerged. Once all the data was accessible on documents, I then began thematic content analysis which looks at common ideas and themes that emerged during my research. These themes then became the foundation for my findings and discussion in Chapter 5 and Chapter 6.

Limitations of this research

Among hibakusha there are variances in experiences and the levels of impact that the bomb had on themselves and their family. It needs to be recognised that participating individuals wanted to have their stories heard and felt safe and ready to share them. In contrast there are individuals who do not feel the same or have the ability to ‘speak up’. Some people might remain silent due to social implications which are discussed in Chapter 6. Acknowledgement

⁴¹ These are intended to be preserved for others to access.

of the time between the event and the research is relevant to consider as part of the population who could have participated are deceased, and the narratives I gathered are provided by a group of individuals who were infants, children, and young adults at the time of the bombing. To allow for multiple perspectives, my research was open to all ages and genders who wanted to participate and have their voice heard. Despite the time which passed since the atomic bombings, there is significance in collecting these stories to contribute to the memory of the event. What is told can reveal how the atomic bombing of Hiroshima is remembered on both an individual and collective scale. The sample of the population used in my research is extremely valuable with each individual story contributing to education, knowledge, and understanding of nuclear weapons-use and their implications.

Conclusion

This chapter has considered methods which were used during my research process, introduced the participants, and outlined how and why they were selected. Although the participants are a sample of a population and may represent particular views, they are not the only perspectives available. Despite this, the thirteen individuals who participated in my research provided beneficial insight into experiences of the atomic bombing of Hiroshima since 1945. The following chapter focuses on the conceptual frameworks which became evident from my findings.

CHAPTER 4

CONCEPTUAL FRAMEWORK

My examination of narratives from the atomic bombing of Hiroshima on August 6th, 1945 highlighted significant themes around memory, trauma, and silence. Literature on memory is particularly relevant to this thesis showing ways the atomic bombings have been remembered since 1945. Silences, as evident in my interviews, become a key area to address when looking at memory. The Press Code, wider narrative of the atomic bombings, and everyday lives of hibakusha created a need to acknowledge the purpose that these silences play. Through narrative analysis I captured the lived experiences of my participants, and from this, aspects of performance became evident. In this chapter I apply theories of trauma and memory, and frameworks of silence, narrative, and narrative performance, to consider how oral histories and interviews reveal experiences of those associated with the atomic bombing of Hiroshima in 1945.

Oral histories

Oral history [also known as life history/life story] is an important part of ethnographic enquiry. It reveals information about a certain time and place, establishing collective memory and a link between generations (Plummer, 2011). Thompson (2015, p. 34) commented, “Family history especially can give an individual a strong sense of a much longer personal lifespan, which will even survive their own death.” This concept is evident in the legacy work which is taking place in Hiroshima. One of my research participants, Higashino, is an A-bomb legacy successor, who carries on the collective memory of hibakusha through sharing the experiences of her mother and grandmother:

I was born and raised in Hiroshima. I am a second-generation A-bomb survivor and licensed A-bomb legacy successor. My mother asked me to tell her story, I want to pass my mother's story down to the next generation. We must banish nuclear weapons from the world. World peace is not far away. The power to create it lies in our hands and our hearts.

Oral history gives voice to individuals and groups who may have been comparatively marginalized by power or authority (Borg, 2017; Thompson, 2015). Through participants sharing their stories and the stories of their families it enabled them to contribute to collective memories of Hiroshima.

Memory

Memory is a key theme in this research. Caruth (1995b) recognised that there is no single approach to traumatic memories, clinically known as post-traumatic stress disorder [PTSD]. Consideration of my participants' traumatic memories shows how individuals understand and remember their experience (Caruth, 1995b). In 1980, PTSD was recognised in the Diagnostic and Statistical Manual of Mental Disorders [DSM-III] (Caruth, 1995b; Wastell, 2005). Definitions of PTSD have been contested but,

most descriptions generally agree that there is a response, sometimes delayed, to an overwhelming event or events, which takes the form of repeated, intrusive hallucinations, dreams, thoughts or behaviours stemming from the event, along with the numbing that may have begun during or after the experience, and possibly also increased arousal to (and avoidance of) stimuli recalling the event. (Caruth, 1995b)

My participants who were victims of the atomic bombing experienced this event and trauma in different ways. As Wastell (2005) noted, in traumatic situations there is no time to think so people react. Trauma is an emotional response linked to both the known and unknown, and can result in long-lasting impacts (Caruth, 1996). Examined later in Chapter 6, trauma shows the shocking and unexpected nature of the atomic bombing for my participants.

The trauma is a repeated suffering of the event, but it is also a continual leaving of its site. The traumatic reexperiencing of the event thus carries with it what Dori Laub calls the "collapse of witnessing," the impossibility of knowing that first constituted it. (Caruth, 1995b, p. 10)

When Caruth (1996) discussed Freud, she considered how the experience of trauma repeats itself. In traumatic situations threats may be recognised too late. Caruth (1996) suggested that not having truly known the threat of death in the past, the survivor is forced to confront it again. This raises questions if trauma stems from an encounter with death or the ongoing experience of having survived it (Caruth, 1996). Caruth (1995) implied that focusing on survival puts death back into the picture, since witnessing death is part of the process of becoming a survivor. A text by Hashizume (2019) questioned if it was acceptable for her to be alive and 'doing nothing' when the two people who had saved her died. Life-defining moments such as the atomic bombing of Hiroshima establish identities as survivors (Caruth, 1996; White, 1999). Concepts of survival are examined further in Chapter 6.

Latency of traumatic memories

The latency of traumatic memories is evident in my research when participants recalled the long-term emotional and psychological impacts of the atomic bombing. Several individuals, as noted in later chapters, were not fully conscious during the immediate aftermath of event, suffering from gaps in memory resulting from trauma. Others were unable to recall events and suffered from intrusive memories. “The survivors’ uncertainty is not a simple amnesia; for the event returns, as Freud points out, insistently and against their will.” (Caruth, 1995b, p. 6). Caruth (1995a; 1995b) extends Freud’s earlier studies on latency of symptoms, with the idea that individuals are not fully conscious during trauma or may suffer amnesia as seen by the section *Memory Loss* in Chapter 5. Consideration of trauma and its implications also relates to what is discussed, silences, and how my participants talked about experiences as seen by what they chose to include and exclude from their accounts.

Memory complex

The atomic bombing of Hiroshima is part of personal, local, national, and global memory. Olesen (2020) argued that memory of Hiroshima cannot be understood in isolation and that it should be considered as part of a broader ‘memory complex’, which means it is connected to other memories, events, and situations. Olesen’s (2020, p. 90) theoretical concept of memory complexes brought attention to how situations, events, and memories can be linked through dialogue which bridges their separate experiences and refers to causal relations, comparability, and mutual struggles. Hiroshima as a part of a global memory complex was acknowledged in narratives shared by participants in this research. For example, one respondent, Higashino, discussed her experience at the 2016 hearing for the Marshall Island’s lawsuit against India, Pakistan, and Britain for allegedly failing to halt the nuclear arms race. Higashino situated her experience of the above hearing within global memories of Hiroshima, showing the connected nature of events.

I had an opportunity to speak about my experience to a person from the Netherlands... One of the members from the Netherlands who listened to my story came up to me afterwards, and she said, “It made me remember something that I had forgotten. When I was 10-years old I went to Hiroshima with my father, and I remember thinking how nuclear weapons are very frightening and it is wrong to go to war and to fight with others. That is something that I had forgotten. Listening to your story made me remember. So, I promise to work towards abolishment of nuclear weapons.”

-Higashino

The same month Higashino spoke with members from Netherlands at the Marshall Island's Lawsuit, talks for the 2017 TPNW had begun. Higashino explained that during these Treaty discussions Japan voted against the talks, but the Netherlands was the only North Atlantic Treaty Organization state which decided to abstain in the vote to take forward multilateral nuclear disarmament negotiations.⁴² One of the reasons the Netherlands chose to abstain, as Higashino shared, was the voice of hibakusha, with Higashino named as an individual who affected the Netherlands' decision. Higashino believes that the woman who had spoken with her after hearing the testimony,

worked really hard to go against her own party. This experience made me realise it does not matter how powerful you are or how effective you are, it kind of boils down to one person at a time and how each person reacts to this issue.

This example shows the impact that Higashino had, and how testimonies can cause change, spurring people into action. Higashino's comment reveals the connected nature of memories. Through sharing her story, it reminded someone in a position of power about their own experience as a child, which had subsequent flow on effects. The memory complex theory enables examination of the connected nature of events, memories, and situations, and demonstrates how Hiroshima is part of personal, local, national, and global memory.

Transformation of memory

Traumatic events can construct a cultural or national trauma. According to Jeffrey Alexander (as cited in Saito, 2006, p. 356) cultural trauma occurs when "members of a collectivity feel they have been subjected to a horrendous event that leaves indelible marks upon their group consciousness, marking their memories forever and changing their future identity in fundamental and irrevocable ways." The atomic bombings became national trauma constitutive of Japanese identity. Delay in memory of the atomic bombing of Hiroshima and shift to its re-emergence, signalled a national trauma which converted Japanese from spectators of distant suffering to a community of wounded actors, which is explored in the discussion below. After the Second World War Hiroshima was 'almost forgotten' however, more recently Hiroshima has become a 'mecca of peace' with over one million people visiting the Peace Memorial Park annually (Saito, 2006, p. 353). The 1954 Lucky Dragon fishing boat incident and the end to censorship contributed to establishment of a collective national sense of trauma. Between the

⁴² The Netherlands ultimately voted against the adoption of the Treaty.

6th of August 1945 and April of 1957 there were significant changes and transformations in Japanese collective memory of the atomic bombing.

Immediately after the atomic bombing, response of Japanese media was anger, and the imperial government accused the US of violating the Hague Tribunal for inhumane deployment of weapons (Saito, 2006). Following Japan's surrender, The General Headquarters, headed by Douglas MacArthur, the Supreme Commander for the Allied Powers, imposed censorship through the Press Code (Atomic Heritage Foundation, 2017; Grzybowski, 2018; Saito, 2006). The Press Code [began September 19th, 1945] banned publication of Hiroshima and Nagasaki's damages, preventing public awareness of the destruction caused by the atomic bombs and subsequently impacting memory emergence. Between 1945 and 1951 this imposed silence meant commemoration of Hiroshima's atomic bombing was primarily within the city's locality and was rarely in public arenas nationally, fragmenting commemoration between Hiroshima and the rest of Japan (Saito, 2006). With the signing of the San Francisco Peace Treaty by Japan in September 1951, Japan regained sovereignty. Hiroshima became more visible nationally from April of 1952 (Olesen, 2020; Saito, 2006). However, it was not until 1954, when crew aboard the tuna boat, Lucky Dragon 5, were exposed to fallout from the US hydrogen bomb test at Bikini Atoll that transnational and national discourse joined to define Hiroshima as a Japanese national trauma⁴³ (Olesen, 2020; Saito, 2006). New systems of identity and collective memory began to emerge where "Japanese identified with A-bomb survivors and saw themselves as nuclear victims." (Saito, 2006). This growing collective identity was evident through Japanese anti-nuclear movements, and support at the 1954 Peace Memorial Ceremony (Saito, 2006). Three years later in March 1957, the Medical Care Law [discussed prior in Chapter 2] was passed with the Japanese State providing medical assistance for hibakusha (Saito, 2006).

Saito's theory of collective memory is one way to consider how the course of commemoration of Hiroshima progressed over time. This theory is useful as it provides some explanations as to why my participants were reluctant to share their stories immediately after the atomic bombing, and how a new collective identity as hibakusha emerged.

⁴³ Distribution of tuna from the fishing boat to markets across Japan caused public fear from eating irradiated fish (Saito, 2006). After this experience, Hiroshima entered more into public consciousness as the general public became concerned that they might be impacted by radiation.

Beyond a theory of trauma

It has been argued that memory studies need to look beyond traumatic memory and capture cultural transmission of positivity (Rigney, 2018). Rigney (2018, p. 370) puts the concept of hope into analysis, viewing it as a ‘civic virtue’ based on ideas of possibility that pushes people to act. According to Rigney’s (2018) theory, memory and activism are entangled, questioning how and why memory is developed and framed. When examined together, traumatic memory and activism are a way to connect the past with the present. Rigney’s theory of trauma is relevant for this research in addressing why people decided to share their experiences. The majority of my participants who were alive at the time of the bombing did not speak about their experience until later in life but used their traumatic memories as a means for activism. One participant in this research, Maki said,

So, I worked until I was 72 years old and I had nothing to do with involvement with peace activities and I did not talk about my experience or maybe I could say you know, I chose not to talk about my experience until then.

This was followed later in the interview by his comment,

Nuclear abolishment is something we must do. If we keep going the way we are, I think we will have a huge nuclear war here, and we have to keep in mind that the nuclear weapons back then and now are totally different. The nuclear weapons of now are 10 times, 100 times more strong, more powerful, so we must avoid nuclear warfare at all costs, and that is what I talk about in my research. So, I try to tell people that we have to try and get along and understand each other without going to war. I can’t speak English very well but what I tell people from abroad is [he speaks in English here] “No more war. No more Hibakusha.” One of the other very key points that I would like to convey is that we should not have any more hibakushas. Even though I am getting older, I am very still passionate about my work and it is something that I would like to pass on to all of Japan and to the world.

Particularly strong to his message, was “No more war. No more hibakusha.” This quote is significant being one of few parts of Maki’s oral history spoken in English revealing the emphasis of this comment. The above excerpts demonstrate how scholars can look beyond traumatic memory to see how people move on, work through trauma, articulate experiences, and potentially convert them into action.

Post-traumatic growth

Post-traumatic growth [PTG] theory explains transformation following trauma (Collier, 2016). PTG was developed in the 1990s by two psychologists, Lawrence Calhoun and Richard Tedeschi (Collier, 2016). According to PTG, “people who endure psychological struggle following adversity can often see positive growth afterward.” (Collier, 2016, p. 48). Growth following a traumatic event is a process involving time, struggle, and energy (Taku as cited in Collier, 2016). According to the PTG inventory developed by Calhoun and Tedeschi, it looks for positive growth in five areas: “appreciation for life, relationships with others, new possibilities in life, personal strength, and spiritual change” (Collier, 2016, p. 48). In an article written by Collier (2016), they use Kay Wilson’s experience as a tour guide who was stabbed by a Palestinian terrorist and witnessed the death of her friend as an example of PTG. Like hibakusha in my research Kay Wilson had survivors’ guilt yet found positive change in the forms of personal strength, appreciation for life, and a focus on helping others (Collier, 2016). In my research, PTG can be used to look at the personal growth of hibakusha. PTG does not minimise their pain, loss, or suffering in any way, but can be used as a theoretical framework to consider why these individuals decided to share their experiences and work towards spreading peace. As Futagawa said, “we mustn’t let the cruel lessons of A-bomb in the world fade with the passage of time.” This concept links up with going beyond a theory of trauma to share experiences.

Silence

Decisions of my participants to share their stories challenged silences which emerged after the atomic bombing of Hiroshima. Enforced silence, censorship, and the potential for discrimination are some factors which prevented people from speaking about their experiences. In an excerpt provided from the diary of Michihiko Hachiya, one of the few surviving medical doctors, he wrote, “an old woman lay near with an expression of suffering on her face; but she made no sound. Indeed, one thing was common to everyone I saw — complete silence.” Silence, in this context shows a return to the self in times of trauma where everything was gone (Pope, 2006). This silence relates back to trauma, as it is a sign of people being unable to process and articulate their traumatic experience. Another type of silence was evident when people made decisions to not speak about their experiences for fear of discrimination.

One of the participants, Ogura, explained such silence,

But to tell the truth, not all the survivors wanted to say, “Hi, I’m a survivor”. Most of the people tried to hide that, especially people outside of the city and I know that many people living in Tokyo... waited until their children and their sons and daughters got married... So, people tried to keep silent for such a long time... 50 years I did not want to talk.

Choosing not to share narratives for many years, showed self-censorship and alluded to other factors such as discrimination. Chappell (2020) wrote about silence and how it took some people decades to speak about their experiences. These factors are discussed further in Chapter 6. Atomic bomb literature and survivors were not generally well received, and many individuals did not feel it was appropriate to attempt to articulate the event.

Other scholars also recognised silences and difficulty in sharing experiences of traumatic events. Donnan and Simpson’s (2007) ethnographic work on subjective experiences of South Armagh Victims Encouraging Recognition/ North Armagh Victims Encouraging Recognition [Saver/Naver] considered how language enters the public domain, and the silences which remain. People in their research were silenced or chose not to speak for reasons including, fear, threats, guilt, and possibilities that their stories would lack an audience (Donnan & Simpson, 2007). Prior to 1990 border Protestants in Saver/Naver had minimal voice due to the above factors, and it was not until the 1998 Good Friday Agreement that conditions were created which made it more acceptable and safer to share experiences of the Troubles (Donnan & Simpson, 2007). These silences relate back to the atomic bombing of Hiroshima, as national awareness of the impacts was silenced by fears of discrimination, suppression of information from both the Japanese and Allied Powers, and difficulty in sharing experiences amongst other factors. As my participant Futagawa shared, “we didn’t talk about the A-bomb too much because all of the information was suppressed, and we did not know so much.” Examination of silence, including inability to share narratives, and silences/pauses in the interviews are important, providing insight into experiences and reflecting why certain voices are or are not heard.

Conclusion

Themes from my research which are explored further in the following chapters have been unpacked using conceptual frameworks of memory, trauma, and silence. This chapter considered how the atomic bombing of Hiroshima has resulted in traumatic memories which have had impacts on my participants as discussed further in Chapter 5 and Chapter 6. Since 1945, memory of the event has transformed; early on enforced silences impacted abilities to share stories, however, after the end of the Press Code and following the Lucky Dragon No. 5 incident there were changes in the way people viewed the atomic bombings of Hiroshima and Nagasaki. This chapter revealed how memory has been shaped over time, and my participants' growth following the atomic bombing.

CHAPTER 5

INDIVIDUAL MEMORIES AND NARRATIVES

This chapter is driven by memory and narratives of my participants. Eleven participants told stories of their experiences and those close to them. Some recalled what they remembered about life before the bombing, at the time, and immediately after. One individual was in-utero, two participants were aged one, and another is a second-generation hibakusha therefore, they shared stories of their families. This chapter analyses findings from the oral history interviews considering experiences of the atomic bombing and its immediate impacts. It begins by examining why Hiroshima was chosen as a location for one of the atomic bombings. It then progresses to question what life was like for participants prior to the bombing at 8:15am on August 6th, 1945. Immediate physical and emotional implications from the attack are considered. From these short-term implications a range of themes emerged including, relationships, water, food, and survival. This discussion chapter provides a means for my participants to share their narratives on the atomic bombing.

The first encounter

Standing by the busy roadside in Asakusa, an entertainment district in central Tokyo, with cars and people constantly coming and going, it dawned on me that I was finally meeting the individuals I had been communicating with for months. Having never seen a picture of my translator or interviewees before, I began to wonder if the people walking past were the man and woman I was meant to be meeting. Nearly ten minutes passed, and my brown leather satchel started to feel heavy on my right shoulder. Inside the satchel were notebooks, an audio recorder and everything else a tourist on the streets of Japan might need. I looked down at my phone and as I turned my head, there was Hirata Michimasa [translator] and Sugino. We introduced ourselves on the sidewalk outside my hotel, Unizo Inn, and decided to catch a train together to another area of the city. By this point I had mastered the transport system and knew exactly where to go, *Suica*⁴⁴ card in hand. We walked to the nearest train station side by side, talking about our lives as if we were old friends catching up after years apart. After a short train ride, we arrived at Ikebukuro station where we walked down roads lined with small, homely businesses. At the top of a long staircase Hirata stopped and turned around to me. He had been

⁴⁴ A Suica card is a contactless, rechargeable smart card which is used as a fare card on train lines in Japan.

giving information about Japan throughout our train journey but asked me to acknowledge the view for a moment. I stood wondering what made this spot special. After a while of looking out over buildings and neighbourhoods, Hirata explained that these stairs are a destination called ‘sunset stairs’ or in Japanese, *Yūyake Kaidan*. Although it was midday when we were in the area, I could imagine a pink and orange sunset glowing over the buildings and illuminating them in a beautiful light. We walked further into a street of food vendors, down some alleyways, and back onto a sprawling main street. By this point we had been talking for hours and I was beginning to build a picture of their lives and how they felt about their atomic bomb experiences.

As our guide for the day, Hirata told us how we missed the cherry blossom season by mere weeks but wanted to show Japan’s beauty by taking us to an azalea garden which was blooming. Both Hirata and Sugino expressed how pretty the garden was, and we talked about how far Japan had come since the Second World War. That afternoon, Hirata invited us to the Fukagawa Edo Museum,⁴⁵ where we could learn more about different aspects of Japan’s history. I was thankful and accepted his invitation promptly. Walking into the museum building, Hirata and Sugino began asking each other if they had their ‘booklet.’ I looked at them in a puzzled manner asking what they were talking about. Hirata pulled out a booklet and showed me its cover, explaining that he, like other hibakusha who applied for a health booklet, received free entry into places like these. I nodded, thanking Hirata for explaining, and began to wonder what these booklets meant to hibakusha. Although I only saw this booklet utilised one other time outside of the interview scene, it was evident that a sense of collective identity had been created and associated with them. This first physical encounter was beneficial for meeting each other in an informal setting, and spending time learning about Japan and my participants’ lives since the bombing.

Interviews

The initial Tokyo interviews were held in Nishi-Ikebukuro on the afternoon of the 25th of April 2019. It was an overcast morning, and when the train from Asakusa arrived at the station it had just begun to drizzle lightly. Hirata was waiting for us not far from the station and walked with me to the location of our interviews. We stopped outside a tall building and I was ushered up to the third floor to where the interviews took place. The room was a bright white and had rows

⁴⁵ This is a museum of old Edo in the former Fukagawa ward of Tokyo, Japan.

of desks. Hirata and I pulled some desks together to make the atmosphere more engaging and create ease of conversation. I stood to welcome the first participant, Miyake, and then he sat directly opposite me. Two similar interviews followed with the interpreter/translator, participant, and myself present. At the end of each interview, respondents were given tokens of thanks for their participation and time, as was discussed with each of my translators prior for good practice. Directly after the final interview that day we went out as a group for dinner. The balance of formal and informal created a good atmosphere where we were able to talk on different levels about life and experiences.

On the 26th of April, I left the station in Asakusa early in the morning and took several trains to Hiroshima, arriving nearly six hours after departure. Once in Hiroshima I dropped my bags off at my accommodation, the World Friendship Center, and headed directly to Hachidori-sha. The café, on the second floor of a building in Hiroshima, was a key location for four of my interviews. Walking up a flight of stairs and into a corridor, there on the left is Hachidori-sha, with its intimate spaces and low wooden tables where you can sit and talk with hibakusha and legacy successors. These legacy stories are part of a Hiroshima municipal project, the A-bomb Legacy Successor program, which aims to preserve narratives of atomic bomb survivors (Miki, 2017). “Under the initiative, participants known as A-bomb successors spend at least three years learning the stories of survivors in depth. As of October 2017, there are 243 trainees of varying ages, 89 active successors, and 15 mentor hibakusha who pass down their stories” (Miki, 2017). Having contacted the café months in advance of my arrival to tell them of my research, I had been put in touch with a local translator that the owner knew well and had used before. Although the location of Hachidori-sha is public, the narratives and interviews which were held there were done privately.

That night, I was asked to speak about my previous research on discourse regarding New Zealand test veterans at Operation Grapple during one of the café’s events. At this event I was interviewed by two women, while sitting crossed legged around a low table⁴⁶ where you can eat and drink. Several of the individuals I had met and heard oral histories or interviewed earlier that day were there to listen to the researcher become the interviewee. The room packed to near capacity meant many people had to stand. I spoke about my past research on nuclear narratives from New Zealand and the how the country sent men to Operation Grapple, a series of British

⁴⁶ In the Japanese language, this table is called *zataku*.

nuclear weapons tests in the Pacific. We discussed some findings from this earlier research, and the implications that the test series had on individuals and their families, touching on areas which included health, social implications, intergenerational harm, and support for those affected. After the event one of my participants came up to me and expressed how interesting she found it that hibakusha faced similar challenges to others I had interviewed. She voiced her sympathy for Operation Grapple veterans, whom she also called hibakusha, reflecting on their similar health struggles and concerns regarding intergenerational damage from exposure to radiation. Following this, I held a further two interviews at ANT-Hiroshima. It was through my fieldwork, interviews, oral histories, and examination of narratives that the stories of the atomic bombing of Hiroshima began to emerge.

‘A small sun’

At 8:15 am the gunner of the Enola Gay saw the target of the T-shaped bridge in the centre of the city very close to the current Memorial Park. It is easy to recognise this T-shape as the target of the A-bombing. Soon, the gunner saw the targeted bridge in his sight, and pressed the switch of the release equipment. The A-bomb fell away from the airplane... Approximately 600 metres above the ground, the atomic bomb exploded with a blinding flash creating the fireball that blazed like a small sun.

-Morikawa.

August 6th, 1945 is a day which is etched into the memories of those exposed to the atomic bombing of Hiroshima. Some participants recounted their own experiences, and those who were too young to recollect the day have memorised stories which have been passed onto them. Experiences incorporated a reflection on what was immediately witnessed in the hours and days following. Prior to the bombing, early on the morning of August 6th, an air raid siren had been lifted in Hiroshima therefore, when the bomb exploded, people were continuing with their daily lives.

Setting the scene

Kajiya was exposed to the atomic bomb at six years of age when he was in first grade of elementary school. Kajiya's oral history began differently to other participants as he had a strong focus on the historical aspects that contributed to the atomic bombings of Hiroshima and Nagasaki. He spoke about the context of the Second World War and other attacks on Japan, then explained how the location of the bombings were chosen:

So August 6th, from Tinian airport, three airplanes flew to Japan. Before that hundreds of air raids came but this time only three. Only three. They were planning to drop the bomb — by their plan, the first target was Hiroshima and the second is Kokura and the third is Niigata, that was their plan. The first one was Hiroshima. [Kajiya does a hand symbol and ‘dun’ noise to symbol the bomb dropping]. This was a very clear day. Second one was Kokura in Kyushu area, so August 9th the plane flew to Kokura, but Kokura is not good weather, it is cloudy. So, by eyesight we have to see our target. Kokura was cloudy, so they gave up and went to Nagasaki, and dropped on Nagasaki... Hiroshima was August 6th when the A-bomb dropped, the second on August 9th Kokura was spared because of the weather therefore, Nagasaki. August 11th there was supposed to be another dropped in Niigata, but the governor is smart, so they all evacuated.

Kajiya was the only individual who provided a detailed description of why the atomic bomb was dropped on Hiroshima. Framing his oral history in this way set the scene for his experience and the following interviews.

Before the bombing

Few participants recalled life before the atomic bombing. During wartime life was hard for the Japanese with people facing loss of income, food insecurity, and participation in war efforts. Despite these challenges, Morikawa described his past in a reminiscent way using positive terms such as ‘happy.’ This choice of language can be seen in the opening excerpt of this thesis, part of which is included below:

This old map shows my hometown of Nakajima 73 years ago. There were 4,400 people living here enjoying a happy and fairly peaceful existence before A-bombing... Even in wartime kindergarteners played, sang, and danced every day. I was a healthy, vigorous boy of six. -Morikawa

Morikawa’s explanation of his life before the bombing indicates just how horrific things were at the time. This excerpt from his oral history also suggests a shift in how he viewed his life between pre- and post-atomic bombing. It shows what was missing immediately after, as there was no kindergarten, no playing, no songs, no dancing, no happy family homes, and poor health. Comparisons of life pre- and post-bombing reveals how Morikawa, as a child of six, even noticed the dramatic changes which ensued after the atomic bombing.

August 6th, 1945. 8:15am

On the morning of August 6th prior to the atomic bombing, an air raid siren was lifted in Hiroshima. Maki commented, “8:15 on the 6th, the air raid had been going in the morning, but it was called off, we were back in the factory working.” Kajiya, another participant, remembered leaving early in the morning for school with his sister.

There is no kind of summer vacation at that time because it is wartime. So, my sister and I together went to school. So, when I went to school, we started cleaning, wiping the floor. I am watching outside. I think I heard the sound of the B-29 airplanes. [‘brrrrrrrrrr’ — plane noise]. So, some students saw that airplane. At the moment the bomb exploded I was cleaning the entrance and somehow, I look up at the window and saw a bright flash. So, after the brilliant light there is a big ‘boom.’ So, the house made by wood collapsed at that moment, and so many levels fell on my head, and it became dark. -Kajiya

My research participants had clear memories of the day and what they were doing at 8:15am. Ueno, a nurse student working at the Red Cross Hospital, was 1.5 kilometres from the hypocentre. That morning she worked with dysentery patients in a building used for isolation.

We were making some special food for these dysentery patients and we had to disinfect the dishes and so forth... I looked up at the sky and the B-29 was you know, flying over the sky and turning around and I was really wondering because the yellow air raid alert had been lifted but still the B-29 was in the sky. So, I was murmuring to myself, ‘why is the B-29 still there?’ and then I was going into this building and then as soon as I entered the building, I saw tremendous light and heard noise and so I went under a desk and so many things were falling on me. -Ueno

At this point Ueno stopped talking, and with the help of the translator drew the outline of the building where she was at the time as seen in Figure 9 included below. This image shows the layout of the dormitory for nurse students at the Hiroshima Red Cross Hospital, which assisted in the explanation of Ueno’s experience as it showed a detailed layout of where she was, and places key events occurred.

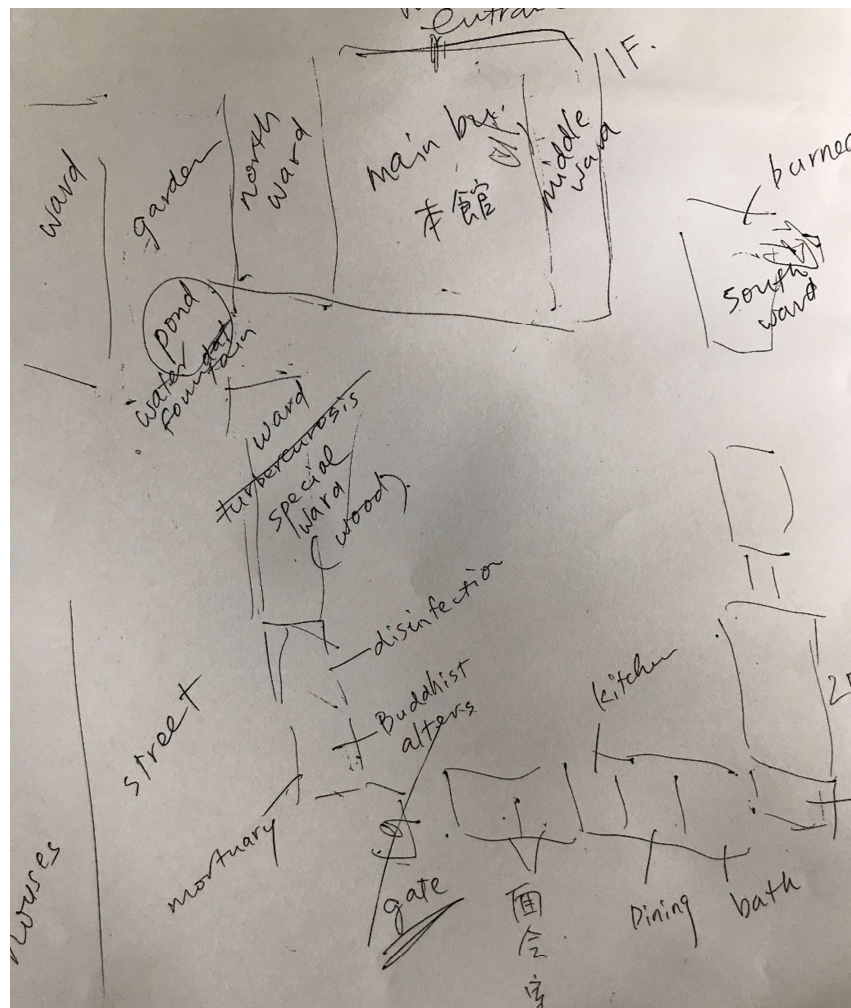


FIGURE 9: DRAWING BY UENO TERUKO — HIROSHIMA RED CROSS HOSPITAL LAYOUT.

This image, drawn by Ueno during her oral history explains her movements at the Hiroshima Red Cross Hospital in the time immediately following the atomic bombing of Hiroshima.

Hirata, one of my interpreter/translators, also shared his testimony from the atomic bombing of Hiroshima, explaining how as a nine-year-old he was under the mushroom cloud which, “was literally a hell or inferno on the earth.”

My family and I had just finished breakfast. All of sudden, there was brilliant flash. I thought it was a flare bomb even though it was daytime. The light came first along with the heat. Our house was 1.3 miles away from the blast centre. Within one mile from the blast centre all persons out of doors had burns and those closest to the centre were burned black and died. In my case, I was lucky to escape the burns because I was under a roof. At the moment of the flash my father pushed me into a nearby underground shelter. As soon as I was in the shelter the shock wave hit us. My father was injured by the debris caused by the shock wave... I no longer remember how long we stayed in the shelter, but when we came out, we found that our house was destroyed, and our wooden fence was on fire. Hiroshima had become a sea of flames.

-Hirata

My participants' vivid memories of the atomic bombing include recollections of where they were, what they were doing, and their thoughts. Each participant's narrative contributes to memories of the event.

The 'glittering' airplane

Yamada was eleven years old when the atomic bomb exploded. Her story differs to the other participants' narratives as she described the plane that dropped the bomb using imagery. On the morning of the 6th Yamada was on her school grounds for a flag signalling drill. Food scarcity meant children were fainting one after the other in the hot sun, and so they were told to rest in the shade of some trees for a while. It was a cloudless summer day when Yamada saw,

one B-29 flying in the sky... the boys had just waved out [at the plane] and I felt that the body, airplane body, glittered very beautifully, glittered with silver colour in the sky, blue sky, and all of a sudden, the scenery was turned dark. -Yamada

She remembered how at the time B-29s flew to Hiroshima frequently without bombings.

Later in the interview this idea that the planes were not there to cause harm was reiterated when Yamada commented, "Most of the cities in Japan were air attacked but in Hiroshima there is no air attack even fire attack in Hiroshima, so B-29 is kind of a safety symbol" [clarifies — for the children]. The B-29 bomber plane, as described by Yamada, is symbolic as it is the sign she associated with safety as a child, however it brought devastation to Hiroshima. The above excerpt contrasts the innocence of the children noticing the plane and waving, with the damage which followed minutes later.

Black rain

After the atomic bombing, radioactive material fell to the earth through black rain. My participants who were exposed to the black rain have unique experiences and face different challenges to those who were not exposed. The black rain darkened by radioactive particles was described by Higashino when she said, "it grew dark with night, black rain dropped, filled of radiation from the mushroom cloud building overhead." Experiences of the atomic bombing, for some, are strongly linked to the black rain, as it is believed to be the chief cause of their exposure to radioactivity. Yamada also spoke about students who she was mobilised with during the war and were exposed to black rain since the shelters were small and overcrowded.

“We got drenched from the sudden rain, which we later learned to be the radioactive black rain. We cuddled up to keep ourselves warm, but we were shivering with cold.” Yamada was exposed to both the atomic bomb’s blast which pushed her to the ground and the black rain which followed. Outside of the blast radius was another participant, Morikawa who was at a hospital 10 kilometres from the hypocentre. He remembered that about half an hour after the bombing the sky had grown dark and there was a ‘smoky cloud’ rising.

About that time much fallout, burnt papers, soot and dust fell onto our heads. Children romped around, grabbed the burnt papers flying. And then it started to rain with big drops, but it was not normal rain, it was sticky black rain which was not easily removed from the skin and the clothes. That was when I was exposed to the radiation of the A-bomb. Akiko [his mother] urged us to run back into the building. -Morikawa

Morikawa’s primary cause of exposure to radiation resulted from the black rain which fell on him while he was outdoors, and in the following years through eating and drinking contaminated food and well water. Since Morikawa’s exposure to radiation he has faced health problems including a cancer diagnosis in September of 2018. Many others, like Morikawa were exposed to radiation through the black rain, and these individuals have faced different sets of challenges as discussed in Chapter 6.

Physical injury

In the oral histories, interviews, and literature there were many physical injuries discussed, some of which include, trauma from being thrown by the blast, objects embedded in the body, severe burns, diarrhoea, cuts, broken bones, high fevers, purpura [skin blood spots], cancers, heart diseases, and hair loss (Chappell, 2020; Greenwell, 2013; Hiroshima Peace Memorial Museum, 1987; O’Malley, 2016; Takaki, 1996; Todeschini, 1999; Tomonaga, 2019).



FIGURE 10: KIMONO BURNED ONTO SKIN. PHOTO BY GONICHI KIMURA, COURTESY OF THE HIROSHIMA PEACE MEMORIAL MUSEUM.

Heat rays burned dark sections of the woman's kimono onto her skin — photograph was taken around August 15th, 1945.

As well as physical harm suffered by those who survived the immediate blast, shock, and heat waves, an estimated 60,000 (Greenwell, 2013) to 80,000 (O'Malley, 2016) people were killed immediately. A testimony in the Committee for Children of Hiroshima (as cited in Takaki, 1996, p. 45) said,

The force of the explosion had sent millions of shrapnel shards in all directions. Yoshihiro Kimura asked: “Where is mother?” “She is dead,” her father answered. Then she noticed that a nail five inches long had stuck into Mother’s head, and she died instantly.

In every oral history and interview I conducted physical harm was mentioned. Descriptions of injuries are weaved throughout this chapter and Chapter 6, showing pervasive harm that the bombing caused to individuals. Examples of physical harm are provided in the excerpts drawn from the oral histories below. Maki who was mobilised to work in a factory recalled how the heat rays directly hit him and the blast threw him approximately five metres away. Maki suffered burns on the left side of his face, arm, and abdomen — His friend who he was working with had burns on his right side. By the 7th of August, maggots were in the burn on Maki’s arm and once his father and cousin had found him, Maki was ill with a high fever.

I could not walk myself, and I was told they put me on a board and carried me back home. I was actually fortunate though because my sister had been a nurse, she used to be in the Korean peninsula, but she was back in the mainland. So, she had some medicine with her... So, I did heal faster than normal, and I am still very thankful for that. But later my sister told me how things were at the time: after they ran out of medicine, she would slice up potatoes and put it on the wound... And I imagine this is from radiation, but all of my hair fell out. -Maki

These described injuries show the immediate impacts of the bombing. Physical injury was also experienced by Okamoto Tadashi who was one year old when the atomic bomb caused his house to fall on him and his mother:

I was haemorrhaging from my left wrist because a piece of wood was kind of stuck into my wrist, and on the right side of my head there is long scarring where I was also bleeding out from and several places on my back. -Okamoto

Like Maki and Okamoto, every participant in this research acknowledged physical injuries which were sustained by those in Hiroshima when the bomb exploded. My interpreter/translator, Hirata, also recalled how people were severely burned, and he could not distinguish, “male from female, young from old.” Physical harm was the most common immediate theme discussed throughout the oral histories. As well as immediate harm, there are also longer-term implications which have been analysed in Chapter 6.

Mother and child

Amongst the injured in the atomic bombing were mothers and their infants. In two oral histories participants remembered how some infants survived while their mothers had died. Ueno described this as, “the most sad scene I had ever seen,” and Morikawa’s father Hiroshi felt his heart was “continuously tortured” by his memory of seeing a deceased mother with her injured infant.

What I remember is this young mother, and this was the most sad scene I had ever seen. That young mother was a little over 20 years old and she was holding her baby and she said, “I want water, please give me water” so I gave her some water and she said, “it is good” and “thank you” and she died there. And then I came back some time later and found out that the baby was still alive and she, the baby, was trying to have milk from her breast but the mother was already dead. I felt so sorry for the baby but if I took the baby away from the dead mother, if some people, the relatives, came there trying to look for them I thought they could never find them if the baby were away from the mother. So, I couldn’t take the baby away, and even today when I think of the baby, I wonder what had happened to the baby. I can never forget it. -Ueno

Similarly, Morikawa described his father’s experience,

When Hiroshi escaped from the burning building, he saw a baby whose skin was completely peeled exposing reddish flesh. The baby was trying to climb up the steps of the front entrance of the building. He stroked the baby’s head and put the baby back to the arms of the mother who already died. He left there praying for the baby’s long life. Later, Hiroshi described his feeling about this baby, that the warmth of the baby’s head and its cute eyes continuously tortured his heart. -Morikawa

The traumatic nature of witnessing these scenes left Ueno and Hiroshi questioning their decisions and thinking of the children many years later. An element of guilt is also evident in the way Ueno and Hiroshi described their experiences and justified their actions. These individuals queried their own conscience and relived their actions, as the baby ‘tortured’ Hiroshi’s heart and is something Ueno could never forget. In these two oral histories it shows how familial relationships as well as the biological connection between a mother and child was upheld by both individuals who witnessed these scenes, and these became a factor in their decision about how to act. Rather than separating the babies from their mothers, Ueno and Hiroshi put them back with their deceased family member in hopes that other surviving relatives would find the child.

In-utero

Futagawa, one of the “youngest A-bomb survivors” was born on April 1st, 1946, eight months after the atomic bombing. Futagawa’s mother and some of his siblings were protected from the blast as they were approximately three kilometres from the hypocentre. At the time of the explosion, they were visiting their next-door neighbour who had a straw thatched house. This house protected these family members as they were not harmed by projectiles or shattered glass in the same way they would have been, had they been in their own two-story home with glass. Futagawa’s father and eldest sister both died in the atomic bombing. “My father was working at the post office as a post-master.” The location of the post office which Futagawa’s father worked at was around 300 metres from ground zero. Futagawa’s father would take a locomotive train to Hiroshima station and from there take a streetcar and walk the final distance to work. Futagawa said, “he must have been killed by the blast and heat rays instantly, he was only 47 years old.” Futagawa’s eldest sister, aged thirteen when she died, was a student in junior high school. In the Japanese wartime context students were also included in the National Mobilization Act.⁴⁷ “So school children were forced to work to make up for the wartime labour shortage.” (Futagawa).

On that terrible day in Hiroshima, 6,400 students were working on building demolition for fire breaks in order to prevent fires from spreading and to make evacuation routes. My sister was working about 1 kilometre from the hypocentre, from ground zero. I am sure, she was one of them. But 6,400 students were killed on that day. So, my father and elder sister were either terribly burned by heat rays and crying out for water just before they died, or they jumped into rivers... The next day, August 7th, my mother rushed to the area near ground zero where my father’s post office and my sister’s working area were. She desperately searched for them along the riverbanks, wandering through the city — each day, every day... As a result, I was exposed to the A-bomb’s radiation in my mother’s womb. -Futagawa

Futagawa’s oral history and interview were significant as he provided a different perspective being my only participant who was in-utero at the time of exposure. Before he was born, the atomic bomb had already impacted Futagawa’s life, causing the death of his father and elder sister, resulting in his exposure to radiation in his mother’s womb, and seriously impacting the landscape of the city he grew up in. Futagawa said, “my mother never told me about the A-bomb, my father and elder sister while she was alive, so I don’t know anything about those

⁴⁷ This National Mobilisation Act began on May 5th, 1938. The first article, “gave the government sweeping powers, demanding that, during times of war or conflict, all human and material resources would be employed to effectively defend the country.” (Nagasaki National Peace Memorial Hall for the Atomic Bomb Victims, n.d.).

days.” It was through listening to others speak that he found out what happened, which shows the value of sharing experiences. The trauma and sadness which his mother felt from losing her husband and child is shown by an earlier excerpt in Chapter 4, about the blouse which she kept hidden for years as a memento of her daughter who died. This trauma along with fear of discrimination also explains why his mother did not apply for the A-bomb survivor’s health book for her children. Futagawa’s narrative links with earlier descriptions of familial relationships and shared narratives, as his own personal history is extended through describing the experience of his family who were alive in 1945 and experienced the atomic bombing.

Second generation

Higashino Mariko a second generation hibakusha, was born in September of 1952. As an A-bomb legacy successor Higashino shared the oral history of her mother and grandmother, but also added her own second-generation perspective to the story as seen by inclusion of her experience at the Marshall Island’s lawsuit mentioned in Chapter 4. She wants people to recognise the harm that nuclear weapons and atomic radiation continue to pose, and to consider how we can create peace in the world.

My mother asked me to tell her story, I want to pass my mother’s story down to the next generation. We must banish nuclear weapons from the world. World peace is not far away. The power to create it lies in our hands and our hearts. My mother and grandmother were A-bomb survivors. My grandmother passed away at age 64, my mother Chisako is 91 years old and doing great! She is an active A-bomb storyteller.

-Higashino

Through sharing experiences of her mother and grandmother Higashino showed how these stories can be passed down and used to speak out about the harm of nuclear weaponry.

Relationships and narratives

Importance of relationships emerged from my oral histories and interviews. None of the hibakusha were with their whole immediate family at the time of the bombing and in ten of the eleven oral histories and interviews, people searched for those they were close to. One of the first things mentioned after ensuring their own safety or immediately helping others, was finding family and friends.

For example, when Higashino shared her mother's story she said,

Early the next morning, she [Higashino's mother] set out in search of her mother. There was no one left alive to help her, so she wandered the ruins of the city alone... She crawled in the city centre. When she looked down into the river there were so many bodies floating there that she couldn't even see the water. Five days later she was still searching.

Similarly, Kajiya said,

I walked around looking for my father and mother and older sister, but I couldn't find them. So many people were burned, and their faces were swollen, and so burned, we could not recognise who they are. I was so small, so I tried to find my family.

The aftermath of the atomic bombing showed the strong sense of value in relationships which people held. Ueno explained how her father looked for her to check if she was safe and well. Once they were reunited, "...he said, "why don't we go home together?" But there are so many people around I couldn't go home leaving these suffering people and so I asked him to go and look for my elder sister." Some hibakusha never found their lost relatives and friends. These individuals searched for closure but did not receive it. Ogura's brother-in-law's house was in the central part of the city near the Peace Park which meant, "he lost everybody" and he was, "always trying to find those missing people." (Ogura). These narratives show what is considered most important in unexpected traumatic events such as the atomic bombing. People sought out family and connections, and it was these relationships that helped people to cope and overcome the trauma which they faced.

Sharing narratives

Sharing stories of family members and people participants were close to came up in all eleven of the oral history interviews. The shared nature of narratives (Plummer, 2011) resulted in participants recalling what they had heard about the bombing and its immediate impacts. This shared experience is shown by participants weaving their encounters with other individuals, particularly those who lost their lives as a result of the bombing.

Yamada Reiko:

Yamada, who was eleven, recalled how her father was working at the elementary school within 500 metres of the hypocentre as part of the national evacuation project for children. She remembered how her father was severely burned on his face and had many injuries from debris and glass. Yamada also included her eldest sister's experience of the atomic bombing explaining, "My eldest sister was near Hiroshima station. The first day, on the 6th, she couldn't come back, the next day she came back home with tears, with her back burned." Sharing narratives is a way for people to place their experience within broader contexts and to pass on stories of their family members who lived through the atomic bombing.

Morikawa Takaaki 'James':

Morikawa's oral history followed the pattern of sharing family experiences as he spoke about both his immediate and wider family.

Morikawa:

I'll introduce my family in 1945. Father, Hiroshi 35 years old, broadcasting engineer of Hiroshima Central Broadcasting Station. Mother, Akiko, housewife, 32 years old, and Mikiko elder sister, 9 years old. This... is my aunt, Kikue Kanda who died by the A-bomb. I will touch on the story of my family and Kikue Kanda's today.

Morikawa also spoke about experiences of his extended family:

This girl died on her father's back while they were evacuating from the burning city. And the other uncle and aunt run their printing house in the current Peace Memorial Park, just 350 metres distance away from the hypocentre and were killed instantly. So, when my mother visited the place to search for my elder sister, she found just white powder. There is not ash or bone. -Morikawa.

His aunt, Kikue Kanda was shopping on the morning of August 6th. Following the bombing, she spent one night lying in a roadside gutter on the hillside next to some staff from the broadcasting station where Hiroshi worked. As Morikawa said, "this is also a miracle." From the person she spent the night on the hillside with, Morikawa's family learned that Kanda was taken to a relief station but died and was cremated there. When telling his story, Morikawa intertwined the story of his family and those closest to him. At one point he described a picture drawn by Shinohara Fumiko who was his uncle, Dr. Kanda's, neighbour. Shinohara passed Kanda's city hospital after the bomb with her injured baby whose brain was visible and

witnessed Morikawa's cousin Aiko with half of her body burned. Talking to the image [from his interview] Morikawa explained,

Hidemi, a boy, was trapped under the collapsed building and asked his father to help him from the coming flames. Dr Kanda, left in the picture, pulled on his hand but the burned skin on Hidemi's hand, stripped off and then he could not be pulled out. He burned to death. This is a story which was told from my mother. But, when I found this picture, I was very shocked, the detail of the situation of Kanda's family was described backside of this picture. I was very shocked to know.

Including other's experiences showed how Morikawa's memory is linked to his family's narrative of the atomic bombing of Hiroshima.

Ogura Keiko:

Ogura shared the story of her brothers and their survival. The day prior to the atomic bombing, her thirteen-year-old brother was working on a road near the hypocentre, and the following day over 300 students who were working there were killed. Ogura's eldest brother, aged fifteen, had evacuated to a temple on a hill before the bombing as part of the government guidelines mentioned earlier. Ogura was told that after the bombing, the Buddhist priest opened the main door and told the children that their parents were behind Buddha in heaven. Of around 30 children, nearly 25 had lost family members and some became orphans.

Children burst into tears when teachers delivered the envelope, it is said. Around midnight they ran away from the temple because they were educated in case Japan surrendered or Japan would be defeated, all children would be killed. Such a rumour spread so children were so scared, we are orphans right now, we have to get out of the temple and then hide in the mountain — it is so sad, my brother told me. And then, 1945, over 2,000 orphans returned. I remember those days. And then, no food ... I saw many street children for a long time in the city, and then some were so starved and died.
-Ogura

An article in The Chugoku Shimbun (2012) stated that approximately 9,000 children from 36 of the 41 elementary schools were evacuated from the city. Of those children, some lost their entire families and returned to the city orphaned (The Chugoku Shimbun, 2012). In a text by Kosakai (1972) it was mentioned that the trauma of losing family caused children to cry for their deceased parents. Sharing her brother's narrative shows how experiences of hibakusha are not in isolation, but instead are linked to many other individuals who they saw, helped, and met in the aftermath of the atomic bombing.

The atomic bombing of Hiroshima, as described by my participants, is strongly influenced by a collective memory of August 6th, 1945 and beyond. Scattered throughout the personal experiences and that of direct family members were things that had been remembered or passed on to the individual from a wider societal setting.

Both Sugino and Okamoto were young children at the time of the bombing, and as such their oral histories rely heavily on others sharing experiences and collective memory passed on from those who were with them when the atomic bomb was dropped.

Nobuko Sugino:

Sugino was around one year old when the atomic bomb was dropped on Hiroshima. It was years before she asked her mother about their experience, and now Sugino studies the atomic bombing of Hiroshima. Although she was only an infant at the time, she shared her story along with her mother's and sister's. According to her mother, the atomic bombing caused them both to be caught under beams of their broken house, where they were immediately rescued by a male neighbour. Following Sugino's description of her experience, she relayed her mother's thoughts at the time:

At the same time my mother worried about my elder brother's [Hisashi — 13 years] situation who was just first grade of middle school and had to join the housing projects. The demolishing project forced by the government, destroyed houses to make wider spaces to protect from fire. All the students of that grade, first grade, were working near the epicentre, and died including their teachers. My elder brother and teachers' corpses could not be found.

Sugino's elder sister who was eight years old had just departed the house around 8am, fifteen minutes before the explosion. When Sugino's mother escaped to the suburbs of Hiroshima with Sugino they happened to meet Sugino's sister who was in the company of her friend's family. "We were so lucky to meet them by chance — We were truly lucky." Together, Sugino, her sister, and their mother went to an elementary school in the suburbs of Hiroshima which was used as an evacuation area and temporary first aid station (Ives, 2020). Pictured below in Figure 11, is an example of schools serving as relief stations for the injured. At the elementary school, Sugino recalled running around, and said, "my mother and my sister both sat in exhaustion. Several people who were sitting eventually died. All night long, my mother saw them gradually die. My sister had a severe burn and could not even talk a word." The next day, they relocated

to her grandmother's house in the countryside. Sugino's sister died peacefully by her mother and grandmother's side on August 26th, 1945.



FIGURE 11: VICTIMS PICTURED INSIDE HONKAWA ELEMENTARY SCHOOL WHICH SERVED AS A RELIEF STATION. PHOTO BY TOSHIO KAWAMOTO, COURTESY OF THE NATIONAL ACADEMY OF SCIENCES ARCHIVES.

Okamoto Tadashi:

Okamoto, like Sugino, included experiences of his family in his oral history. Okamoto was one year and five months old at the time when the bomb dropped and had been sleeping in his house with his mother. The house collapsed on them and after escaping, a neighbour led them to a safer location.

Shimasaki:

What have you heard from your mother about what you experienced on the day?

Okamoto:

So, she has told me about that day here and there, but we never really sat down and actually talked about that day.

Maybe it has to do with my never asking her exactly what had happened, but she does have the health book, the health book for A-bomb survivors — and also scarring from that day, and I would think that that was maybe the first time, you know one of the reasons why I asked her, “what happened to you?” because of her scarring.

Through inclusion of other’s experiences, it enabled hibakusha to share stories of those that had died and locate their narratives within the memory of the atomic bombing and its implications.

Nagasaki

At two minutes past eleven o’clock, on August 9th, 1945, three days after the atomic bombing of Hiroshima, the US detonated a plutonium bomb above Nagasaki. The original target Kokura was spared due to poor visibility from clouds above the city and so the bombers flew south to Nagasaki (Briggs, 2020). As a result of the atomic bombing, as many as 70,000 people were instantly killed (Briggs, 2020). Nagasaki became the second and last time that nuclear weapons have been used in warfare. I had the opportunity while visiting the city to interview and hear the testimony of Moriguchi, a Nagasaki hibakusha. His experiences reflect similar themes which were raised by hibakusha from Hiroshima.

Moriguchi Mitsugi:

Born in 1936, Moriguchi was nine years old when the atomic bomb was dropped on Nagasaki. At the time of sharing his oral history, he was aged 83. Moriguchi recalled how before the bomb was dropped in the war, Nagasaki had endured five heavy raids from the US, commenting that the heaviest ones he remembered were on August 1st and 2nd, 1945. One of the bombs dropped near his home and so of the eight siblings, the youngest three, Moriguchi (9), his elder sister (10) and younger brother (6) escaped to a shelter. On the 6th of August, the three youngest children and their mother escaped to Yamazato which Moriguchi explained was, “very, very close to the hypocentre, and my mother said this may still be dangerous, so we moved to a farther place.” Reflecting on her decision, Moriguchi said,

If we were in Yamazato we might not be able to meet like this today... The family who invited us to live in Yamazato perished. And so, after Yamazato we escaped to Saga prefecture, that is 60 kilometres away from Nagasaki prefecture.

Moriguchi recalled how on the day of the atomic bombing he, “heard the tremendous sound of the explosion and saw the smoke and mushroom cloud.” He said, nobody knew anything so

they speculated that a bomber might have crashed, but soon after adults began speaking about a “new type of bomb.” “Gradually the story reached us, and we came to understand Nagasaki city had been completely destroyed.” Moriguchi’s mother returned to Nagasaki city where his father and some of his elder siblings lived. “We three tried to go with our mother and she said, “no,” so we stayed in Saga.” Moriguchi’s mother did not return until the night of August 12th, but had found his injured father, sister, and brother. Moriguchi said, “that was the happiest moment of my life.”

Emotional implications

The atomic bombing resulted in emotional implications and shock from the trauma of the event. When examining differences in emotional responses, age and experiences came into consideration. Kajiya and Morikawa, who were both six, expressed their feelings from the day in their oral histories and interviews. Trauma was raised by Kajiya after escaping from under a collapsed house alone. He recalled seeing the dead, and commented it was, “a miserable, a terrible sight, a horrible sight, but at that time I did not feel any fear.” Kajiya’s experience of trauma and shock was reiterated further when he described seeing his family again.

I met up with a woman I knew in my neighbourhood. She said, “your parents are alive, but your mother is seriously injured so she will die soon.” She said that to me. So, I got very nervous, shocked. She took my hand and took me to my mother’s place so, I could meet my mother in the corner of the military ground. So, she is my mother [shows painting] she is so bloody, all, whole body was bloody. When the bomb was dropped, she was doing some sewing work by the window. When it exploded [‘dunnnnnn’ noise] the glass by the window... pierced into her body. In her body 50-60 pieces of glass pierced into her, and one of the glass pieces pierced into her left eye. She stayed alive until 94 but she lost her left eyesight... My sister was laid down on the grass, already dead.

As discussed earlier in the conceptual framework chapter, trauma is not only about destruction, but also about survival (Caruth, 1996). Kajiya’s memory of this terrible, unexpected event left him in shock. Morikawa also witnessed death at a young age. Morikawa’s emotions became heightened from uncertainty surrounding his father’s safety when he did not return from the city on the 6th. For example, Morikawa said, “We fell into an abyss of anxiety over Hiroshi’s safety, because he didn’t come back for two days. When he appeared, he was dragging a foot, but we were crazy with gladness and relief.” This emotion reflects the situations which he experienced and demonstrates how his responses have been implicated in his memory of the bombing. Morikawa also recalled how victims fled to the hospital he was at: “I still remember

the screaming, the groaning from next door but it became silent by the next morning. For a six-year-old boy I was very terrified to see them because they looked like bloody ghosts. This is my experience anyway.”

Ogura, slightly older at age eight, explained how her house was near a Shinto shrine which was commonly believed to have first aid and be an emergency location. Many people fled to the area and the rivers became full of the dying. Every day she would see people alive in the morning who would be dead by the afternoon. “It was so hard for an 8-year-old girl to see people die in my house every day.” These traumatic memories stuck with Ogura for many decades. The confrontational nature of traumatic situations, as discussed in trauma theory, are evident here as Ogura’s memory of the event is replayed, and she can recall witnessing death and the feelings which accompanied her reality.

Yamada, aged eleven, also suffered from the unexpected nature of trauma as she did not know how to react as the atomic bombing happened so suddenly. Although her family survived, she felt empathy for those who were not in the same situation:

The first time my father came back, and my sisters came back, and all six members of my family returned home compared with other families missing somebody or watching. I watched the bodies lying on the roads, they were ready to pass away. By seeing it, first is surprise, second is pity and thirdly, I felt very sorry and sad. But the tears cannot come out from my eyes, just very miserable memories.

Thinking about that day, Yamada remembered how the lawn of her home was full of the deceased and dying. On the third day after the bombing, she saw black smoke from the elementary school and “understood that is the smoke of the bodies.” As word of the harm caused by the atomic bombing spread, Yamada heard of neighbouring families who lost fathers, husbands, and children. “Such kind of information or news was spreading around, and I really felt that the result is just evil on the earth and I couldn’t help stopping tears for the sad facts.”

Maki also eleven was mobilised and working at a factory when the bomb exploded. “Nobody knew about the atomic bomb that day, so I felt that a bomb had hit me directly. I felt sad because I thought I would die, and that all went through my mind in a second.”

When asked about the impact that the bombing had on him personally Maki replied,

Well, first I didn't think too much about it as far as A-bomb goes because all I saw was my friends or my relatives, and my family who were close to me, and we did not have any information, so I wasn't really sure what was going on in a bigger scale.

Memories and emotions of my participants reflected their age, experiences, knowledge, and feelings at the time. Those who were younger generally focused on personal emotions such as anxiety over safety of their family. In contrast, those who were older often considered the implications for others and showed responses such as sympathy or compassion. Trauma theory and memory of the atomic bombing of Hiroshima reveal the shocking and unexpected nature of the event for my participants. Through repeated remembering of the day, the trauma my participants faced both stemmed from the encounter with death and the experience of having survived. Emotional implications of the atomic bombing, as described by participants in this research, reveal aspects of trauma, grief, fear, and a guilty complex which are discussed further in Chapter 6.

Survival

Experiencing the atomic bombing of Hiroshima led some participants to reflect on survival, and how their situation determined whether they lived or died. For example, Kajiya said if he had been any later evacuating from under the collapsed house, “I would have been burned... It was a big fire, and the city was burned — In this fire so many people died.” Maki also considered survival when he described how students at the junior high were divided into working groups; three of the five classes went to the Toyo Factory, another group went to a factory in Koi, and Maki went to work at a munition's factory in Funairi. Upon reflection, Maki said, “depending on where we were put to work really had a lot to do with if you lived or died.” Some students were mobilised at a factory outside the 2-kilometre mark, others were sent to demolish homes approximately 1.5 kilometres from the hypocentre, and those in Koi were roughly 800 metres from the hypocentre.

Where I was mobilised, there was one person who had died and 15 injured... The worst was the people who were mobilised in Koi, so, 50 people were ordered to go demolish homes that day. There is a record in this booklet of teachers arguing with each other about whether they should let the children go and demolish homes on that day. One of the teachers, the third-grade teacher from junior high school said we should follow the orders. The second-grade teacher, junior high principal teacher, he said that the children are very tired from working, and he said it is probably not a wise decision to let them go and demolish homes that day. So, the second-grade teacher decided to keep the children at home that day. He was told that he will be responsible, he will have to take responsibility for his decision, but he decided that that would be fine, and to let the children stay [at home]. Because of this teacher's decision, all of the second graders, nobody was harmed. The third graders went to demolish homes 800 metres away from the hypocentre, and all of the classmates, everybody, including the teachers, lost their lives. So, there is a reporting of a teacher who stood up for his students. Back in that time it was very rare to go against an order. -Maki

An article by the International Review of the Red Cross (2015) also spoke about how survival was determined by the decision of a teacher. Instead of going to school, Yamamoto Sadao had been asked with other students in his year, to gather at the eastern drill grounds approximately 2.5 kilometres from the hypocentre (International Review of the Red Cross, 2015). The location where the first-year students were working was on the riverbank, behind a building about 600 metres from the hypocentre of the explosion (International Review of the Red Cross, 2015). This variation in distance from the hypocentre was the difference between life and death. Students in Yamamoto's year were burned but survived whereas all 321 of the first-year students were killed (International Review of the Red Cross, 2015).

Similarly, Miyake, a junior college student in 1945 reflected on his 'luck' of survival. When the bomb dropped on Hiroshima, Miyake was a passenger on a streetcar. Being, "smaller than the usual person" meant that he was buried, a situation which he believed caused him to escape the bomb's direct flash. By the time the shockwave arrived he had been quick to act and jumped off the streetcar but was thrown to the ground by the blast. Miyake had originally thought it was an ordinary, direct bombing saying, "I was afraid that I might be dead." He remembered glass hitting other passengers, whereas the wounds to his foot and finger were from jumping off the streetcar. When discussing the physical harm to his body, Miyake said, "I don't know why but I was lucky that there is no severe damage... most of the other passengers had severe impacts."

Morikawa considered his survival in a different way, through reflection when looking at an image which was displayed at the Hiroshima Peace Memorial Museum.

Morikawa:

Can you see the three figures?

Shimasaki:

Yes.

Morikawa:

This picture shows three mannequins of A-bomb victims, mother with boy and girl who are wandering in the ruins of Hiroshima just after the A-bombing detonated above Hiroshima sky. Three figures which actually evoked and exhibited in A-bomb Museum, told us their pain, horror, misery, and sorrow caused by a single evil bomb. But they were removed away by officials because of the negative impact to the children. I used to imagine three figures to overlap my family, Akiko, Mikiko and myself. If we didn't evacuate from Hiroshima city to the suburbs, we might be ghosts like this.

His description of, “pain, horror, misery, and sorrow” show the effects that the bombing had on individuals, and how Morikawa used comparative links to the three figures in the exhibition as a means to reflect on his own survival. This relates to my discussion of institutional silence in Chapter 6. Silence and lack of a forum to give voice to one's own experiences impacted abilities to speak out, as the Hiroshima Peace Memorial Museum did not open until ten years after the atomic bombing. From the connections which Morikawa made, it shows the important role that museums and other tools play in both dissemination of knowledge and in providing an expression to the experiences of survivors. These tools give hibakusha a way to process their experiences which can assist in overcoming trauma. Hibakusha who participated in this research reflected on their own survival when they were faced with death. Findings show that factors such as location and timing played significant roles in whether people lived or died.

Memory loss

Another theme which emerged is memory loss. Five of the eleven hibakusha commented on the timeframes in which they or their family had no memory of events. Three individuals could not recall events as they were beaten unconscious from the blast, and the two others have traumatic memory loss. Maki was thrown approximately five metres when the blast wave hit.

He commented,

I lost consciousness, and when I gained consciousness, I saw that all of the structures were broken down. I saw many injured people come out and I saw that they had shards of glass all over their body.

Another example of timeframes where memory is missing was shared by Higashino when she explained that her mother Chisako saw, “a bright flash and tremendous explosion. She came to in a field 30 metres from her house.” Similarly, Ogura lost consciousness and woke up on the road after having been beaten by the blast.

In contrast, Ueno’s and Miyake’s experiences of memory loss are associated with shock and trauma. Working as a nurse student Ueno recalled that directly after the bomb,

I was under the desk and then I looked up after it became quieter. I saw two beams coming from the broken roof, so I saw some sunshine coming through the broken roof, and at that time, I remembered those beams. After that I don’t remember what I was doing. When I came to, I realised that I was standing on the debris sort of, on the roof of the second floor of this building.

Later for about one week after meeting her father in the aftermath, she also has no memory; “I don’t remember where I stayed during the night and what I ate or what I did. I don’t remember it.” Miyake could recall events up until he asked a soldier to rescue his mother. He remembered that he tried to go to the riverside to wash his face but noticed corpses in the river, “but after that moment I am entirely blank on that day.” He questioned what he did after he was left alone. “I cannot remember however hard I tried to recall. I might miss my memories by the shock of the big disaster, which suddenly overhung me.” Caruth’s theory of trauma acknowledged how people can forget or have distorted experiences when exposed to traumatic events (1995b, 1996). Both Ueno and Miyake are unable to recall part of their experience, which is associated with the severe shock and trauma from the atomic bombing.

Assisting the injured

Age of my participants when they were exposed to the bombing played a significant role in their ability to take action to help others. Maki aged eleven, and Ueno a nurse student, felt that they were in a position where they were able to assist others before returning to their family.

Maki recalled,

We had a place set up nearby which was all broke where we were supposed to go for shelter if something had happened... So, we evacuated to that school, but the school had been broken and it was on fire. Me and my eight friends, we used a pump for water to try and diminish the fire, to try and put the fire out. We worked really hard to put the fire out, and about the time when the fire was going out, I remember I started to feel the pain from my burns. So, the teacher told us to go home.

Similarly, Ueno remembered how together with the head nurse she tried to put out fires [at the Red Cross Hospital] using water from the water tanks in a bucket relay, but the strength of the fire was too great and, “everything was burned down.” She asked soldiers who could walk to help,⁴⁸ and along with other nurses and doctors who were able, they tried to assist people trapped under the collapsed buildings. “We could help some out, but many couldn’t because the fire came so quickly.”

Ueno:

So, I was in charge of the people on the first floor of this main building and I wanted to know if anyone was left in the building alone, so I looked around and found one soldier, patient, left all alone and he was suffering from vertebral tuberculosis. And he needed some plaster case and so it looked like a turtle’s shell — the plaster case. And I asked if he was alone there, and he said “yes,” and he said, “I was going to die here.” I thought, what could I do for him? He was about 27 or 28-years old and I carried him, and so there is a big plaster too — the plaster case which was used for the back.

Upon reflection Ueno did not know how she was strong enough to carry this man outdoors to lay him on the lawn. My participants who were able did what they could to assist others. Action was also evident when individuals and families searched through the devastated city of Hiroshima for relatives and friends, when people chose to help one another, and when the city and its inhabitants began the process of rebuilding and living with the after-effects of the atomic bombing.

Limited supplies and treatments

Medical supplies, treatments, and professional help for the injured was limited in the immediate aftermath of the bombing. Maki, Ueno, Higashino, and Futagawa all commented on medical supply constraints. An article by O’Malley (2016), also acknowledged that medical staff,

⁴⁸ Ueno clarified that in 1945 it was an army hospital, so the inpatients were soldiers.

supplies, and treatments were limited. On August 6th, 1945, there were 298 doctors who lived in Hiroshima, of which 270 immediately died, leaving 28 to care for survivors (O'Malley, 2016). Therefore, assistance for the injured was limited due to the destruction, high number of deaths among the doctors, and wartime supplies.

Maki sought help for his wounds in Eba town but said that half of the town was gone. “There were doctors and nurses there, but they did not have enough medicine so all they could use was oil for cooking.” (Maki). Ueno recalled how many people were “seriously burned, and their skin was hanging from the tips of their fingers,” yet, “we couldn’t give them any treatment... so all we could do was give them water.” The drawing below by Kichisuke Yoshimura, from the collection of the Hiroshima Peace Memorial Museum depicts people with their clothes ripped and skin hanging down, which is similar to the described experience of what Ueno witnessed.



FIGURE 12: ‘GHOST-LIKE’ FIGURES. DRAWN BY KICHISUKE YOSHIMURA, COLLECTION OF THE HIROSHIMA PEACE MEMORIAL MUSEUM.

People near the riverbank with clothes ripped and skin hanging down, as seen by Yoshimura around 10am on August 6th.

Relief to the injured and dying was limited by available resources at the time. In a description by Higashino she said when Chisako found her mother,

Her head was very bandaged, and her body was infested with hundreds of maggots — it took 10 hours to remove them all. Even living bodies were decaying. She could hardly breathe because of the smell. Her mother's left side was full of glass. Her right side was burned black. Broken bones protruded from her nose and her right eye was dangling from the socket... All the doctors and nurses at the station, even the ones who had not been in the bombing had vomited blood and they took some medication. Only one veterinarian, animal doctor, told Chisako that her mother needed an operation to remove her right eye immediately. However, medical supplies which survived the bombing had long since been used up, there was no anaesthetic. During the operation, Chisako prayed in the hallway outside, for her mother's scream filled her ears afterwards. It was hell on earth.

Located approximately ten kilometres from ground zero, Ninoshima Island became a temporary army shelter and quarantine. According to my participant Futagawa, about 10,000 atomic bomb victims were taken to the island. This figure is also given by Hirohara (2020) and Japan Rail (2020). Like participants from Hiroshima, Moriguchi wanted medicine for his injured family members but found none. Recollections of limited medical supplies and makeshift treatments depicts the situation that those in Hiroshima faced in the days, months, and years after the atomic bombing. The above quotes show that people used supplies and skills they had, to do what they could to help themselves and others.

Water

A recurring theme throughout the oral histories was water. Water was a means to extinguish the flames that were burning the city, it was given to the injured and dying, rivers were filled with bodies, and water is also essential for survival. Out of the eleven oral histories,⁴⁹ six included water in their discussions. From the five others who did not talk about water, three were aged one year at the time of the bombing, which is a contributing factor why water may not have been discussed. When the bomb exploded, the hypocentre's temperature rose to 3000-4000 degrees Celsius. The human body consists of approximately 60 percent water, so bodies were instantly vaporised. When talking about this, Morikawa said, "What was residue? Not white bone, but white powder." He also commented that some of those who survived the

⁴⁹ This does not include Dr. Kamada and Dōune as they are professionals who did not provide personal experiences of the atomic bombing, but rather gave information on what it is like to work with hibakusha.

bombing died after they ingested food and water contaminated with the radioactive dust, fallout, and black rain.

Participants who spoke of easing the thirst of the injured and dying have vivid traumatic memories. Ogura felt trauma and shock as, “the people I gave water died drinking it in front of me and later my father said, “children you shouldn’t give water did you know that?” and I was shocked.” This became a traumatic memory for Ogura as she could not forget the faces of people who she gave water to for a long time. This repeated suffering is recognised by Freud’s trauma theory (as cited in Caruth, 1996), as Ogura replayed her actions, and knew too late the threat of death. Trauma was also evident in Kajiya’s oral history as 73 years on, he remembered people saying to him as a six-year-old,

“I want water, water please, water, water.” Even though I was so small, people said to me, “please water, please give me water.” So, they couldn’t do it by themselves. They are so heavily injured, seriously injured so they couldn’t move. So, every time somebody walked through, they tried to call them, “give me water.” So, there is no cup, no bottle, so we couldn’t give them any water. Somebody said if you give them water, they will die soon... So, so, many people lost their lives saying, “give me water.”

Traumatic memories associated with water were also shared by Ueno who encountered severely injured and dying asking for water. When Ueno went to help, she realised the water pipes were broken however, she was unable to walk far so scooped water from a cistern to let people drink. She remembered that even though, “the water was not that clean... people were so grateful, and they said it’s good and then they died.” Around the third time Ueno returned to the tank she saw people had put their heads in it and died so she was unable to use that water either. Ueno was deeply shocked by the scenes she witnessed, scenes that still haunt her today.

Futagawa raised scenarios which incorporated water when talking about his father and sister who were never found and died in the atomic bombing. “So, my father and elder sister were either terribly burned by heat rays and crying out for water just before they died, or they jumped into rivers [where many drowned].” This concept of rivers being filled with bodies was also raised by Higashino who said her mother Chisako, crawled around the city, and “when she looked down into the river there were so many bodies floating there that she couldn’t even see the water.”

Water, although being a potential factor in some deaths, was typically seen as a symbol of life. Human bodies rely on water for survival. Those who were injured and dying sought water, and people fled to the rivers to ease burns and escape the flames. This theme of water is reiterated in the Hiroshima Peace Memorial Park due to its location near two rivers. Use of water in Hiroshima is done with reference to victims who sought water. One of the main pieces in the park designed by Kenzo Tange⁵⁰ is called the *Flame of Peace* (Explore Hiroshima, 2020; Maki, & Niihata, 2020).

The pedestal expresses the shape of two hands pressed together at the wrist and bent back so that the palms open up toward the sky, a design which is to console the souls of victims who craved water and wish for nuclear abolition and everlasting world peace. (Explore Hiroshima, 2020).

Nagasaki, the only other location where an atomic bomb had been used in warfare, also utilised water in the Nagasaki National Peace Memorial Hall for the Atomic Bomb Victims. “At ground level is a sculpted basin filled with the water so desperately craved by victims of the bombing. The quiet walk around this basin is intended to give visitors an appropriate sense of solemnity before entering the hall.” (Nagasaki National Peace Memorial Hall for the Atomic Bomb Victims, 2020). Water is a central theme in my oral histories and interviews. Memory of the atomic bombing of Hiroshima has been intricately linked with discussions on water and how it is both a means for survival but has also been associated with trauma of witnessing death.

Food

When examining experiences at the time of the bombing and the city’s future prosperity, food was another theme which emerged. Ueno remembered how the Red Cross hospital patients were thin from the food shortage. She recalled her own hunger after a day of extinguishing fires and helping survivors, and when it had grown darker, she noticed she had not eaten breakfast, lunch, or dinner. Ueno found some hard biscuits, but after eating two or three was still hungry. Later when she saw the head nurse, the head nurse told her,

In these dormitory buildings there were a lot of pigeons [we both laugh] and this was burned because the buildings were wooden, and pigeons were really burned beautifully in a nice way, so let us go and eat the pigeons. We found very nicely burned pigeons and without any salt we ripped off the legs and ate the pigeons and it was so delicious. So later, when I told people about my experience of eating pigeons, people told me you

⁵⁰Tange: Born September 4th, 1913, Died March 22nd, 2005.

shouldn't talk about it, it should be taboo because pigeons are symbols of peace and eating pigeons, you know doves, is [pause]. That is sometime later.

Morikawa also spoke of food commenting,

We took radiation-contaminated food and well water over the years because we had no information or knowledge about radiation. During the war it was difficult to get food stuffs or daily goods, so we had to obtain the bare necessities of life necessary from the farmers. And water, we have no tap water. We have to take the water from the well. So, it was contaminated by that black rain. Thus, I was exposed to radiation accordingly.

Food sources already limited from the war, were further impacted by the atomic bombing. Ogura remembered that they questioned future food sources,

What we were afraid was for 70 years we would not have any vegetation so on. But, for the first time we saw green leaves coming up and then we crazily tried to raise plant, vegetables and so... And the moreover during the war and after the war there was very strict control concerning rice. Our dream was to eat rice, you see.

A year after the atomic bombing, Ogura saw the black market filled with food despite people being “hungry and starved.” She remembered hiding rice under her sweater and feeling scared that the police would find it and take it away. Following the atomic bombing there were severe struggles with food stability a significant concern in post-atomic bombing life.

Conclusion

This research which examines experiences on the atomic bombing of Hiroshima was conducted in April and May of 2019 while visiting Tokyo, Hiroshima, and Nagasaki. Despite the 73 years which had passed since August 6th, 1945, it remained a vivid day in the memory of my participants. According to the oral histories and interviews, the impacts which hibakusha and their families have faced as a result of a single atomic bomb being dropped on the city of Hiroshima were great. Memories of the event, people, places, experiences, and feelings contribute to understandings of how my participants responded to the atomic bombings. The immediate impacts were also followed by a series of longer-term implications which are examined in Chapter 6.

CHAPTER 6

MEMORIES OF SUFFERING: IMPACTS AND IMPLICATIONS

This chapter builds on findings from the previous chapter which considered short-term effects of the atomic bombing. My findings show a series of longer-term implications which are related to physical and mental health, social life, and hope for the future. Examination of these impacts enables consideration of narratives on experiences from the atomic bombing of Hiroshima. I start by discussing physical health damage including scarring, fatigue, diarrhoea, and cancers. Following this discussion, responses towards hibakusha are examined. Through discrimination towards this group silence became evident. A series of emotional responses have also been noted, with those experiencing the bombing showing aspects of trauma, grief, fear, worry, and guilt. When speaking with my participants, there was a prominent theme of hope for the future. This chapter demonstrates the longer-term implications of the atomic bombing through examination of the interviewees' narratives which reflect some experiences of the atomic bombing of Hiroshima.

Physical implications

A variety of longer-term physical implications were mentioned in the oral histories and interviews, which reflect findings from other literature. Longer-term physical injuries include but are not limited to; scarring, keloids, thyroid diseases, eye problems, infertility, cancers, and chronic radiation sickness such as fatigue, nausea, stomach aches, and diarrhoea (Busby, 2006; Caldicott, 2014; Imamura, 1989; Kosakai, 1972; *Medicine, Conflict and Survival*, 1999; Roff, 2003; Tomonaga, 2019).

One participant, Maki was thrown five metres by the blast and suffered burns to his left side and arm. "If there is anything, compared to my right arm, it is harder for me to put strength in my left. And in wintertime... there have been many times when my fingers have turned purple." Okamoto also had a number of experiences which he believes are linked to his exposure to radiation. In his 40s he had nearly five months of bodily fatigue, and then in his early 60s he had stomach aches. Below is his description of these stomach-aches and the impact that they had on his life.

Early morning, I would wake up and have this very bad stomach-ache and I would go to the bathroom and have diarrhoea and cold sweats. After a while I would feel nauseated and eventually, I would lose consciousness and I would find myself on the floor of the toilet. This happened about seven times during the 2 years. -Okamoto

Okamoto said he began, “to feel this fear for death, that maybe next time I will not wake up once I lose consciousness.” The seventh time that he experienced this stomach-ache, he tried to go downstairs to the bathroom but lost consciousness and hit his chin on a wooden chair. Okamoto has not experienced this again, but the scar on his chin from his fall remains.

The interpreter/translator from my Tokyo interviews, Hirata, shared his testimony from the atomic bombing of Hiroshima when he was aged nine, and said,

Concerning myself, because of the radiation effects of the A-bomb, my white blood cell count is less than half as great as yours. I did not know about this until I was refused to be a blood donor when I was a high school student. I have been very susceptible to bacterial infections throughout my lifetime.

Another longer-term health consequence, discussed by Morikawa, was internal exposure to radiation, which is where radioactive particles enter human organs from the mouth and nose and continue to emit radiation and kill human cells. Morikawa referred to reports about Hiroshima University photographing uranium alpha rays in 2015 which were emitting from the cell of a lung cancer patient who was exposed to the black rain. This example provided is explained in further detail by Baba (2015) who wrote about the research by Hiroshima University and Nagasaki University, and how they found evidence of internal exposure to radiation in a woman who lived where radioactive fallout from the atomic bombing of Hiroshima was detected.

According to Mr. Kamada, the 29-year-old woman was living in Furuta-machi (now part of Nishi Ward), 4.1 km from the hypocentre, at the time of the atomic bombing. She had just given birth and was unable to relocate. For about two weeks she ate vegetables and drank water that she obtained in the vicinity of her house. Starting in 1998, she suffered from one form of cancer after another, including lung cancer, stomach cancer and colon cancer. Because she had been relatively far from the hypocentre, she had almost no external exposure to radiation, so the effect of internal exposure was suspected as the cause of her multiple cancers.

The research group placed cells from the woman's lung cancer in a special emulsion and then dried and photographed the cells. The radioactive material in the cells emitted alpha rays, and the traces of damage to the cells appeared as black lines. Of the nuclear materials detected in the soil in the same area just after the atomic bombing, only uranium, which has a long half-life, would have remained in 1998, the year the woman's symptoms appeared. So, uranium is believed to be the cause of the woman's lung cancer. (Baba, 2015)

Questions of internal exposure which were raised by both Morikawa and Baba (2015) were also commented on by Roy Sefton. Sefton, a nuclear test veteran who I interviewed, was on one of the Royal New Zealand Navy frigates during Operation Grapple in the Pacific. He was present for five nuclear detonations from April 1957 until Grapple Y on April 28th, 1958. Sefton recognised that there is no 'proof' that his health has been impacted from witnessing the atomic bomb tests, however he shared a study, *Sister Chromatid Exchange* (Rowland et al., 2005) and stated how scientific proof showed that the DNA of some people who were at the tests had been affected. Personally, Sefton suffered from muscular and skeletal problems, and "fatigue with no apparent reason," both health issues he did not have prior to witnessing the tests.

It's always been my conclusion... that the radiation that we suffered wasn't at the time of detonation, it was during the time that we were working within the exclusion zone. We used to, you know, because of a lack of fresh water aboard the ship, we'd track rain, tropical rainstorms and guys would go up there and wash their teeth and bathe and wash their clothes in it... And consuming it, you've just got to swallow a bit. Then you're faced with, is it going to pass through your body or is it going to lodge in an organ, and if it does, it pulses away there for 20, 30, 40, 50 years before it turns into a cancer... it's a highly emotive thing. -Sefton

Morikawa, Baba (2015), and Sefton recognised physical harm as being a potential implication of not only acute exposure but also internal exposure to radiation through food and water.

Burabura-byō

Another participant, Miyake, did not know if he had any direct effects of radiation from the atomic bombing, but for years afterwards suffered from diarrhoea. In his interview he also spoke of cancer and 'Burabura-byō' disease amongst survivors. Miyake described this disease as an effect of radiation, which impacts energy and means some hibakusha cannot physically work. Burabura-byō disease is further explained in texts by Hida (n.d.), Hixson (2012), Kyodo (2017), and Langley (2014). Dr. Hida, a survivor of the atomic bomb dedicated his life to helping others and warned, "Once radiation gets into the human body, it leads to long-term

exposure to low-dose radiation.” (Hixson, 2012). Dr. Hida’s knowledge of the disease’s effects on survivors, included both those with acute radiation syndrome [a high dose of penetrating radiation in a short period of time] and individuals such as those who were exposed to the black rain or residual radiation (Hida, n.d.). Dr. Hida’s work showed that many survivors had a condition known as Burabura-byō disease which had made people feel easily fatigued and, in some cases, too tired to even stand (Hixson, 2012; Langley, 2014). As an implication of Burabura-byō disease, individuals were labelled as ‘lazy’ or ‘pretending’ to be sick (Langley, 2014). According to Dr. Hida, this disease is a result of both acute and chronic exposure to radiation (Hixson, 2012; Langley, 2014).

Challenges faced by black rain survivors

Individuals whose primary exposure to radiation through the black rain, have faced different challenges to other hibakusha. As mentioned in my methodology chapter, the 1957 Medical Care Law, aimed to improve and maintain health of hibakusha through medical treatments and examinations (Naono, 2019). The law also defined hibakusha as a category and separated them from other war sufferers. Legal definitions under this law included those with injuries from the atomic bombing, with emphasis on radiation effects (Naono, 2019). Despite this, individuals who fall within the category of black rain survivors have faced struggles regarding recognition of their status as hibakusha. This struggle has been further hindered by the image of concentric circles,⁵¹ which is a dominant frame for measuring survivors’ suffering. Under this law, eligibility for state assistance required proof of location at the time of the bombing (Atomic Heritage Foundation, 2017).

Whether or not one is identified as hibakusha under the Medical Law depends on one’s whereabouts when the bomb exploded and the date and time of first entering the city. In other words, to become hibakusha, one is forced to recall and provide proof of his or her location in reference to spatiotemporal distance from the site of the bomb’s explosion. (Naono, 2019, p. 335)

State approval of an application is decided based upon the possibility of having been affected by the atomic bomb’s radiation (Naono, 2019). In 1976, the Japanese government established a law which extended medical benefits to black rain survivors (Masato, 2020). This law applied to those who resided within an approximately 19-kilometre-wide and 11-kilometre-long zone, primarily to the northwest of the hypocentre which had been drawn up by meteorologists

⁵¹ See Naono, 2019, p. 335.

(Johnston, 2020a). The designated zone was the result of a 1945 meteorological study that consulted local residents and found black rain had fallen roughly 29 kilometres north to south and 15 kilometres east to west of the epicentre (Johnston, 2020a). Within this region, there was a smaller area where black rainfall was heavier therefore, becoming the area used to recognise eligibility for benefits according to the 1976 law (Johnston, 2020a; Masato, 2020). This system was critiqued from its onset with individuals noting that the zone which separated the light and heavy rainfall cut through neighbourhoods and villages (Masato, 2020).

In the late 1980s, Masuda Yoshinobu, a retired official with the Japan Meteorological Agency, presented the results of his own research, which concluded that the black rain fell over a wider area than previously assumed. Between 2008 and 2010, Hiroshima Prefecture and the city of Hiroshima surveyed local residents to determine the health impacts of the bomb. Analysing more than 30,000 completed questionnaires, experts drew up a new rainfall map showing significant black rain across an area about six times larger than the designated zone. (Masato, 2020)

One of my participants, Morikawa, discussed the four categories of hibakusha [outlined under the 1957 Medical Care Law discussed in Chapter 2] and how his experience differed to others since his primary exposure to radiation was through the black rain. His exposure was caused by black rain falling on him while he was outdoors, and through eating and drinking contaminated food and well water. Limitations surrounding categorisation meant those exposed were ‘lucky’ [Morikawa] if they got a medical booklet. For example,

The government have drawn a line and said if you are in this line you can have one of these because you know, they think it’s the area that the black rain fell. But the truth is, the black rain fell outside of that line as well. -Morikawa

This quote shows how black rain survivors have not been acknowledged in the same way as those within close vicinity to the atomic bomb due to boundaries which were applied that determined whether individuals were eligible for state assistance or not. In 1995, a more comprehensive Hibakusha Relief Law was passed, and “officially defined the *hibakusha* as those who were within two kilometres of the blasts or visited the bombing sites within two weeks.” (Atomic Heritage Foundation, 2017).

Some black rain survivors, 75 years on, have continued their battle for recognition as hibakusha. A group of 84 plaintiffs who were adversely affected by the radioactive black rain, took on a case for free medical care and recognition of their suffering, calling for the 1976 law

to expand and acknowledge black rain affected areas (Johnston, 2020a; Negron, 2020). Their case began in November of 2015 (Johnston, 2020a). On July 29th, 2020, the Hiroshima District Court recognised black rain victims who were outside of the boundary which had been set by the government (Johnston, 2020a; Masato, 2020). According to the court's ruling, all 84 plaintiffs who were in areas northwest of ground zero, had developed radiation-induced illnesses, and should be recognised as atomic bomb victims (Yamaguchi, 2020). The Japanese government is looking into appealing this ruling.⁵² Acknowledgement of the harm that these people have suffered has taken too long, with 75 years passing since their initial exposure. The appeal means that the aging population of plaintiffs [between 4 months and 21 at the time of the atomic bombing (Johnston, 2020a)] must wait longer for a decision. Some survivors have serious illnesses and other original plaintiffs have died since 2015 (Johnston, 2020a), showing the urgency in recognition of their exposure.⁵³ Black rain survivors faced different challenges to other hibakusha due to officially recognised categorisations. These individuals amongst others who have been excluded from support and recognition over the years, have a desire to be acknowledged and provided with support for the health issues they have suffered which are likely caused by radiation.

Despite the appeal from the central government, this ruling is ground-breaking being the first court decision to recognise the 84 plaintiffs as atomic bomb survivors and address the boundary of the affected areas (Johnston, 2020a; Kyodo, 2020). This court-ruled decision could redefine how Japan identifies hibakusha, their eligibility for hibakusha certificates, and medical and welfare benefits. My participant, Morikawa, whose primary exposure to radiation was through the black rain and ingesting contaminated products was able to receive the medical booklet providing him with access to support. However, he sympathised with other black rain survivors who were not within the designated zones for acknowledgement yet were exposed to radiation.

⁵² According to Yoshihide Suga, the Japanese Chief Cabinet Secretary, the government would review the ruling (Negron, 2020). In articles by Kyodo News (2020), Johnston (2020a), Yamaguchi (2020) and Yeung and Wakatsuki (2020) it was stated that the Japanese government have already appealed a court ruling which would provide health care benefits to people outside of the currently recognised zone for black rain survivors in Hiroshima.

⁵³ An article by Yeung and Wakatsuki (2020), included the experience of Seiji Takato aged 79 who has suffered from a stroke and heart problems since his exposure to the black rain. Takato described how he had been 'anxious' due to the age of the plaintiffs and concern that they would die if the case were prolonged (Yeung & Wakatsuki, 2020).

Cancer

The most commonly discussed longer-term physical implication raised by seven of the thirteen participants in my research was cancer. About four years prior to Maki's interview, he was diagnosed with prostate cancer. He explained that the marker for normal prostate is between 1 and 4, whereas Maki got 14. He did not want surgery, so his doctor treated the cancer with medication and chemotherapy. Six months later Maki's numbers "went down to 0.03 which is lower than the average person," which is where he is keeping it. Another interviewee, Morikawa was diagnosed with prostate cancer in September 2018, with unidentified cause. Morikawa voiced that he is interested in the causality of his case, "Starting from black rain, ending by the prostate cancer. This is a continuous story." One of my female participants Sugino is also a cancer survivor. Futagawa similarly spoke of cancer when he was asked if he or any of his siblings have had what might be termed 'radiation-related' illnesses. His response was that his two brothers died from a "really strange cancer."

Family members of my Nagasaki interviewee suffered from cancers. Despite Moriguchi being 60 kilometres away at the time of the blast, his family returned to the Nagasaki on August 20th. They travelled within one kilometre of the hypocentre while returning to his home just outside the three kilometres mark. Moriguchi said, "I am sure we had effects from radiation, now only myself and my younger brother live." All of his immediate family members who died after the bombing had developed cancers; his elder sister had breast cancer, and the others had liver cancer. As Moriguchi added, his older brother had "many, many diseases" but died of cancer. Cancer had a proportionately high prevalence amongst the hibakusha I spoke with in this research and suggests potential causal links between exposure to radiation and cancer incidences.

Dr. Kamada provided the table below which shows the year of development of malignant tumours, and the suspected increase of malignant tumours in his research population against the observed increased.⁵⁴

⁵⁴ There are many more cases of malignant tumours than listed, and some which continued to appear outside of the observations and recordings of health institutions.

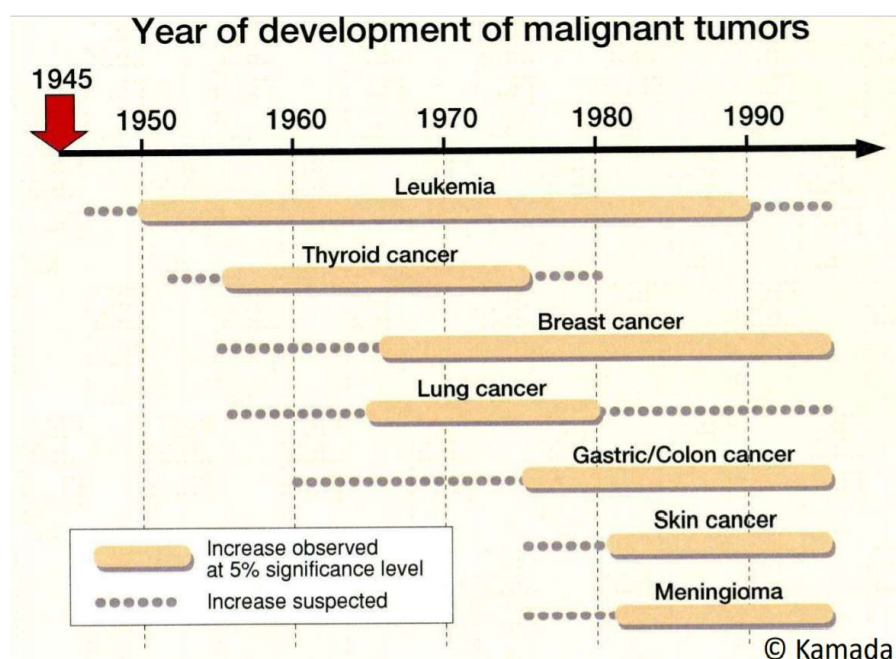


FIGURE 13: TIMELINE OF DEVELOPMENT OF MALIGNANT TUMOURS -DR KAMADA.

Image used with the permission of Dr. Kamada.

This table shows statistically relevant observed increases in development of malignant tumours. A text by Roff (2003, p. 102) discussed how incidences of leukaemia among survivors “peaked within five years, but it has still not returned to normal more than 50 years later.” The length of time for cancers to become apparent was significant with increases in thyroid cancer not evident until 10 years after the atomic bombing, lung and breast cancer 20 years, colon and gastric 30 years and meningioma over 50 years (Roff, 2003). However, the concern has become that by the time these cancers are apparent, people have entered an age where they are more prone to cancer, so the causal factor is difficult to determine (Roff, 2003). Brenner (2014, p. 82) also raised questions about causality of cancers since, “more than 40 percent of any population will naturally get cancer, and as you lower the dose of radiation, you have to look for very small increases in risk over and above that 40 percent background. You need larger populations to see that tiny increase in risk.” Medical implications mentioned by Caldicott (2014) with regard to the Fukushima Daiichi Nuclear Power Plant⁵⁵ mirror that which has resulted from human exposure to radiation at Hiroshima, Nagasaki, and from Operation Grapple.⁵⁶

⁵⁵ A magnitude 9 earthquake on March 11th, 2011 caused a tsunami which disabled the power supply to this power plant resulting in a nuclear accident where all three cores melted.

⁵⁶ Refer back to Chapter 3.

Caldicott (2014) noted four facts regarding medical implications of radiation [exposure]:

1. There is no safe dose of radiation as each dose is cumulative and can lead to genetic disease or cancers.
2. Specific groups of people are more vulnerable to radiation's effects including children and foetuses, with women also having higher sensitivity than men.
3. Acute radiation sickness can result from high doses of radiation.
4. *The latent period of carcinogenesis and the incubation time for leukemia is five to ten years. For solid cancers, it is fifteen to eighty years. It has been shown that all modes of cancer can be induced by radiation exposure- both external and internal- as well as over six thousand genetic diseases caused by mutations in the eggs and sperm, which are passed on to future generations.* (Caldicott 2014, p. 4).

These implications of radiation exposure as recognised by Caldicott (2014) are important to consider when examining the impact of nuclear weapons. “When cancer manifests, it is impossible to determine precisely its etiology or cause, but there is a large literature proving that radiation causes cancer, including the data from Hiroshima and Nagasaki.” (Caldicott, 2014, p. 7). Longer-term effects from the atomic bombing of Hiroshima and exposure to radiation have resulted in various physical problems for participants. Physical harm also relates to the ongoing questioning of genetic damage and emotional impacts.

Social responses towards hibakusha

Societal responses towards hibakusha were mentioned by every participant. Some of my participants directly experienced discrimination, and others who did not experience discrimination first-hand, heard negative rumours about marriage and children. When Maki was asked if he noticed a response after the bombing he commented, “I have heard many things but have not experienced [a social response to being hibakusha] myself personally.” In Morikawa's oral history he told how his father's cousin lost his eye in the atomic bombing:

I went to go see him when he was in a Red Cross Hospital before he passed. When I went to visit, he told me that living through social discrimination was even more difficult than dying. So, he was late in getting married and they were worried about having children that may be disabled. In all of the ways that the neighbours saw him and viewed him in a strange way, all of the social discrimination that he faced was extremely difficult. And that was for me, the last word that he left.

Social discrimination had significant impacts on mental health and wellbeing, shown by Morikawa's family member who felt that it was worse “than dying.” As explained in a text by Kawanaka (2015), she did not want to be hibakusha due to discrimination and fears of giving

birth to deformed babies, so there were times when she wanted to die. Also evident in the above excerpts are two common themes of marriage and concerns regarding health of descendants.

Marriage

Marriage, another theme in my research, relates to physical injury and social perceptions toward hibakusha. As Tomonaga (2019) and the International Review of the Red Cross (2015) recognised, physical injuries from the atomic bombing could impact abilities to marry due to scarring and facial keloids. In my research, despite physical appearance having an impact, social perceptions towards hibakusha had greater influence on marriage prospects. Rumours about marriage to hibakusha were raised by Sugino, Miyake, and Futagawa. Being hibakusha had a considerable impact for some individuals if they chose to marry outside of Hiroshima city due to assumptions some individuals held toward the group. Below examples show aspects of this discrimination.

Sugino spoke of her close friend saying how when her friend went to get married, her partner's mother asked if she was from Hiroshima. Due to rumours which had spread Sugino's friend faced objections to her marriage. Miyake also acknowledged that during the Press Code, rumours about hibakusha prevailed. He provided the example that, "ladies who were ready to work to get married were refused by the family, the partner's family, just for the reason of being hibakusha." Similar social discrimination is noted later in this chapter by other participants and literature. Discriminatory actions towards hibakusha when seeking marriage was likewise recognised by Futagawa. In his late twenties, Futagawa spoke with a friend who lived in Tokyo about getting married.

She was going to get married to a man who lived in Hiroshima... he is a hibakusha. So, she asked me on the phone, she called me and said, "I'm going to get married" and, "congratulations!" I told her. "But can I ask something? It's ok but my fiancée he came from Hiroshima, same as you and hibakusha, is it ok to get married?" she asked me. I was so shocked. I never talked about it like that, but I told her, "it is ok, it is completely ok, that many, many, Hiroshima people get married with like situation, they have happy times, a happy life, it is ok." So, that was the first time...

Second time... August 6th, I stroke the Peace Bell... In those day I met many media people; newspapers, tv and one of the reporters from a big newspaper asked me at that time if I was still single. "Why don't you get married? It is the effect of A-bomb?" the reporter asked me. "No, I am just only single" [emphasis, saying very loud].

Discrimination towards hibakusha as a result of negative rumours showed how the atomic bombing could impact their marriage prospects.

Genetic damage

Survivors of the atomic bombing also held fears regarding genetic damage and potential for their descendants to be affected. One of my interviewees, Dr. Kamada, a medical professional who worked with hibakusha for over 50 years, joined a special clinic at Hiroshima University Hospital in 1962 for survivors of the atomic bombing. He was asked by the Japanese Government to work at this clinic for outpatients and through this work, he became involved with hibakusha. At the time, he saw patients and studied chromosomes. My interview with Dr. Kamada raised important issues about genetic abnormalities and societal responses towards hibakusha.



FIGURE 14: FROM LEFT TO RIGHT — KOIZUMI NAKO [INTERPRETER], SHIMASAKI OLIVIA [RESEARCHER], AND DR. KAMADA NANA O AT THE ANT-HIROSHIMA BUILDING, HIROSHIMA.

Dr. Kamada's research examined genetics and shows abnormalities in certain areas. Findings from his research included, "chromosome aberration abnormalities if the person is comparing the distance from the hypocentre where this person was exposed to the atomic bomb... closer to the hypocentre there are more ratios of abnormalities in the chromosome." His research spanned over 50 years and is still continuing. Initially Dr. Kamada researched chromosome abnormalities among survivors, he then focused on chromosome abnormality studies among leukaemia patients, followed by leukaemia patients not exposed to the atomic bomb. Through his research Dr. Kamada, "found four genetic structures that is specific of, characteristic to, the chromosome abnormalities among leukaemia patients."

Shimasaki:

What impact have your findings had so far?

Dr. Kamada:

At the beginning, that was about 50 years ago when we found some chromosome abnormalities among the A-bomb survivors and informed it to these patients and then there was a fear that it could directly be impacting the genetic effects to their children or grandchildren.

Shimasaki:

Fear about genetic concerns being passed on. What comments can you make on that please?

Dr. Kamada:

But I want people to understand if you take some blood from the arm and find some chromosome abnormalities from the chromosomes here, it does not mean this is carried to your children directly. And so even though we had found out that there are some chromosome abnormalities among the A-bomb survivors, we had to inform the people that doesn't mean this is directly conveyed to the second generation. This is a misunderstanding. So even though we knew the result of our research we had to wait five years because you know, this is a somatic cell, not a reproducing cell so some chromosome abnormalities in the somatic cell does not mean that will be carried to the second generation, so we tried to educate people before disclosing our research results — we published it in 1975 after we waited five years.

When the above research was published, Dr. Kamada said half of those who read it understood correctly, and the other half misunderstood the findings, thinking that abnormalities would be passed to the second generation. To address this misunderstanding the researchers tried to educate people on differences between somatic cells and germ cells.

When there are abnormalities in the somatic cells then you can estimate the exposure dose level and these abnormalities will cause cancers in the body. And we cannot really study the abnormalities in the germ cells, but we can speculate some abnormalities. If there are abnormalities in the germ cells it will affect the second generation.

-Dr. Kamada

Intergenerational concerns

Concerns about genetic abnormalities follows on from the discussion by Dr. Kamada and social discrimination towards hibakusha. Marriage prospects are linked to fear of genetic abnormalities as there is anxiety that the health of hibakusha and their exposure to radiation could impact offspring. After the atomic bombing there were fears about reproductive functions since women's reproductive organs are sensitive to radiation damage (Todeschini, 1999). Women were anxious of miscarriages, stillbirths, premature babies, and giving birth to deformed children (Kawanaka, 2015) or infants with microcephaly (Todeschini, 1999). In ten oral histories there were questions and concerns about exposure to radiation and whether genetic abnormalities could be inherited.

Due to insufficient research, a direct link between atomic radiation and health problems in second generation survivors is yet to be scientifically confirmed. It is nevertheless reality that hibakusha and their descendants still worry about the after-effects of the bombing even today. This is the true horror of atomic weapons, the radiation they release lasts for decades and they hurt innocent lives for generations.
-Higashino

Higashino, a second generation hibakusha shared her mother's experience, and said, "Two years after the bombing Chisako's first child died after 80 days due to what doctors called the 'atomic bomb sickness'." Hirata, shared in his testimony that, "Chronic effects have also led to birth defects including mental retardation. I must emphasize that radiation effects have a high probability to plague our children and probably our grandchildren as well."

Moriguchi, from Nagasaki had first-hand experience of these genetic concerns.

My older brother who was working as a mobilised student in a factory got married and had children, but their children were so miserable: The first baby was born, the first baby didn't have shape... And the second baby did not have arms or legs. My brother's, older brother's wife, was also hibakusha... And after that they had three children. So, the third, fourth, and fifth children were fine. -Moriguchi.

In response to experiencing these genetic concerns within his own family Moriguchi believed radiation had an effect on the babies. According to Tomonaga, (2015, p. 510) miscarriages and malformation of babies were observed frequently, "but there were no good statistics showing radiation-dose effect." However, it was also stated that babies with a small head were recorded in 62 out of 1,470 births (Otake and Schull, 1998 as cited in Tomonaga, 2015, p. 510). "The

larger the dose to the mother's uterus was, the higher the incidence of microcephalic babies, suggesting high dose radiation interrupted brain development. This is the most obvious phenomenon observed among foetuses exposed to radiation in utero." (Tomonaga, 2015, p. 510).

In a speaking tour that launched the Japanese version of the book, *Pacific Women Speak out for Independence and Denuclearisation* [Zohl de Ishtar — Ed, 1998] Kate Dewes (as cited in Busby, 2006) spoke of the experiences of hibakusha. Dewes shared that after the atomic bombings, some Japanese women stopped menstruating, others gave birth to "bunches of purple grapes," and people she spoke with knew of intellectually handicapped children who were hidden away. Women had told Dewes (as cited in Busby, 2006, p. 261) that, "researchers had rarely asked about menstruation problems, miscarriages, or deformed children therefore these concerns were not documented for fear of discrimination." Through Dewes' tour, media attention and openness in the discussion of these issues prompted both first and second generation hibakusha to approach her. These women shared the, "cover-up which continues to take place in Japan over the genetic damage caused to their children" (Dewes as cited in Busby, 2006, p. 260).

After speaking in Nagasaki, a young woman called Kimie, aged about 23, gave me photos of her young son and asked me to share her story with anyone who would listen outside Japan. She told me that she was a second generation hibakusha, and that during her pregnancy she had been warned by two older doctors that her baby might be deformed. When her son was born with a deformity to his hand, her husband blamed her grandparents' exposure to radiation and immediately divorced her. He does not keep contact with his son. Like many other hibakusha women before her, she continues to suffer discrimination because she is speaking out. She was told by other doctors that genetic damage is not normally attributable to radiation, and that therefore her son would not be eligible for compensation. (Dewes as cited in Busby, 2006, p. 260)

Similar genetic concerns were raised by my participants with associations to the nuclear weapons testing at Operation Grapple in the Pacific in 1957 and 1958. Ruth McKenzie, an Operation Grapple widow, shared stories about the health of her children and grandchild. McKenzie spoke about her, "three children, two of whom had been really badly affected by the genetic implications of the testing." Her oldest son has an impaired immune system, Asperger's syndrome, and chronic fatigue syndrome. McKenzie also said, "My daughter who was born 13

months later, has suffered all her life from Fallot's Syndrome⁵⁷ — she had successful surgery when she was three,” and has since had “further major life-saving surgery.” Following on from her discussion of her children she spoke of the third-generation implications saying, there was a lot of deliberation before one of her sons had a child, and that is McKenzie's only grandchild.

In New Zealand, a study on Operation Grapple veterans found that of 443 conceptions from 235 men involved with the Grapple tests, there were 99 miscarriages, 16 stillbirths, 2 perinatal deaths, and 25 early childhood deaths (Medicine, Conflict and Survival, 1999).⁵⁸ Further research on genetic damage, can provide crucial information which supports or rejects genetic damage claims. Both McKenzie and Sefton spoke of a presumptive list, for which five conditions are compensated by New Zealand Veterans' Affairs [NZVA]. These conditions are, “cleft lip, cleft palate, adrenal gland cancer, acute myeloid cancer, and spina bifida manifesta.” (NZVA, 2019). Sefton pointed out a link between the effect on the individual exposed to radiation, their children, marriage, and emotional well-being.

It's a highly emotive thing, and I think the big thing here is that it's a thing that can affect not only the veteran but the children as well. And I've got to say over the years, there's been a number of marriages that have broken up, there's been sad events where children have been born grossly deformed... there's as I said, divorces, and that's come about because the wife is blaming the husband because the children are affected... which is horrifically unfair because he would never of had a, well he wouldn't do this by choice, but you know that. And then I've had instances where children are blaming the father because of their health problems — There's been the odd suicide. -Sefton

Comparing the experience of Hiroshima's hibakusha and Grapple veterans is interesting as it reveals similar worries regarding genetic damage in their offspring. As well as abnormalities noted in this section under intergenerational concerns, my research shows the emotional

⁵⁷ Fallot's Syndrome [Tetralogy of Fallot] is caused by a combination of four heart defects which are present at birth.

⁵⁸ This research goes on to state that out of 324 children there were 231 health conditions noted as well as conditions acknowledged in the third generation (Medicine and Conflict, 1999). As well as difficulty in conceptions, literature on Operation Grapple veterans by Roff (1999) showed that some men were sterile. For further reading refer to Medicine and Conflict (1999). Intergenerational concerns were also noted by British men who observed Operation Grapple, as one family had three generations of problems, and then “the nuclear timebomb... exploded again in the fourth generation” with a woman's baby having no arms or legs (Rimmer, 2002). In consideration of the potential for intergenerational genetic damage, Brunel University London (2016) planned a three-year chromosomal analysis of cells from nuclear test veterans, their children, and control family groups. Dr Kamada's research [Japan] which was discussed earlier, also examined chromosomes and found abnormalities in certain areas. These findings showed that the closer an individual was to the hypocentre, then there were more ratios of abnormalities in the chromosomes, but these abnormalities can only be speculated in the germ cells.

implications of genetic damage and rumours, and how they impacted responses of my participants when having their own children. As Morikawa stated, “My current concern is that the influence of the radiation is passed on to the generation of my children and grandchildren.” Ogura, Miyake, Okamoto, and Maki similarly talked about the suffering that people have faced and questions about whether their children will be healthy or not.

Ogura:

Many years later, that was 70 years later, my classmate for the first time told what happened to them, and then they showed their scars and about their children — some couldn't deliver normal baby, or dead baby delivered or, their wedding was cancelled, such a thing.

Miyake:

All the fathers or wives or mothers, the couples who get married have always had the same feeling that they wished healthy baby was born. Of course, we did not speak out loudly but, in my heart, I wished for healthy births, and I have two sons and right now a grandchild. So, in my case, I was lucky.

Okamoto:

I have two children and three grandchildren and every time I find out they are pregnant up until they give birth there is always that worry and concern that there may be some kind of radiation-related effects that could be passed on to them.

Maki:

My wife is a hibakusha also. I got married when I was 27 and two years later, we had our first child. We were a little worried, but we had two daughters and now I have four grandchildren. Luckily for our family, including myself, we did not have the 'so-called' radiation-related diseases in our family.

During an interview with one of my participants, Ueno, she explained how she married in 1952 and was pregnant with her first child in 1953. Following on from a discussion about familial relationships and impacts, Ueno was asked for her opinion on potential genetic concerns. In response she said,

I got pregnant with her [Ueno's daughter is also in the room], she is the eldest child, and I was really worried about some effects on the baby and every day I prayed in front of the Shinto altar, Buddhist altar so the Gods and the Buddha...

Shimasaki:

Was it a common fear about children?

Ueno:

I think everyone is concerned. And for example, the smaller brains, microcephaly the cases, we were worried... And I was healthy, but I had a terrible fear when I knew that I was pregnant and when I was delivering the baby and when the baby was born. The first question I asked the nurse is whether the baby is ok, and the nurse told me, "yes, she is fine." So, I was really relieved.

Despite the limited research on genetic damage in the second generation and beyond, there is significance in examining the impact that the atomic bombing had on individuals' feelings and beliefs. Recognition of the pervasive impact of the rumours and sharing experiences is shown by Ueno's first question after the birth of her daughter, as she asked if her baby was ok. Emotional trauma and fear of intergenerational harm show both the physical and emotional toll which the atomic bombing had on individuals.

A comment made by Sugino provides another example of rumours about genetic damage. When she gave birth to their first daughter she said, "I noticed that my first daughter was born in a very good situation, then he [Sugino's husband who is not hibakusha] thought 'I did it'." This comment shows how influential rumours about genetic damage were, as her husband thought he was the reason their daughter was born healthy.

Fears over genetic damage were also included in an article by Caputo (2019) which shared Nakatani Etsuko's story and her father's experience. Her father worried about the health of his children and discrimination as second generation hibakusha (Caputo, 2019). "Rumours spread that bomb survivors carried contagious diseases and that their children would be disabled or have deformities." (Caputo, 2019). Etsuko, born four years after her father's initial exposure, has been anxious ever since hearing her father's words of worry (Caputo, 2019). As a child Etsuko was ill which her family feared was a result of the bomb and is one reason why she never married or had children (Caputo, 2019).

Even today, at 69, Etsuko still worries about getting sick because of her father's exposure to radiation. And she's not alone. A few years ago, she founded an organization of children of survivors of the Hiroshima bombing. She's also a plaintiff in a lawsuit against the Japanese government seeking to win medical benefits for survivors' children. (Caputo, 2019)

Responses towards the atomic bombing of Hiroshima raised concerns about genetic abnormalities in children of hibakusha. Whether or not there is sufficient research to support claims of genetic damage in the second generation onward, my findings show that the belief that there is, has caused fear and worry in the majority of my participants and continues to be an area which is of concern to them.

Press Code

The Press Code had a role in determining responses toward hibakusha as information was obstructed and unable to be shared or disseminated in the wider public. Miyake said the Press Code in Japan, accelerated rumours and caused fear about abnormalities in new-born babies. The Press Code began in September of 1945 (Atomic Heritage Foundation, 2017; Grzybowski, 2018, Hook, 1991; Nishimura, 1989) at the start of the Occupation period. Under General Douglas MacArthur, the Press Code suppressed news about Hiroshima and its inhabitants, and was established to censor ‘books, newspapers, radio, film, plays, magazines, and personal letters and phone calls.’ (Grzybowski, 2018, p. 2). Hirata commented,

The US Army controlled Japan after World War II and declared a Press Code relating to the atomic bomb... Rumours that A-bomb survivors would be the source of infection were prevalent, largely because of the observable acute effects of the radiation. Consequently, hibakusha were subjected to both physical and mental agony. They encountered difficulties relating to employment, marriage, birth, health and so on.

Both Miyake and Maki said the Press Code caused damage toward hibakusha to be hidden as the information was suppressed. Grzybowski (2018, p. 52) made a similar point saying,

It was common practice to keep one's hibakusha status secret, only revealing it after marriage or even on their death beds. By preventing the stories and medical information of Hibakusha to be published, Hibakusha were largely misunderstood, with people even thinking their condition was contagious.

The Press Code impacted responses by limiting public knowledge of the atomic bombing and its impacts. Even amongst themselves, people were ‘forbidden’ to talk about the bomb (Hashizume, 2019). This censorship was detrimental to hibakusha, preventing open flow of information and hindering individuals speaking out, which caused rumours to circulate as noted by Hirata. According to Grzybowski (2018) censorship was at its peak from late 1945 until early 1947, then from 1949 to 1951 censorship processes were weakened (Grzybowski, 2018). When the Treaty of San Francisco was signed in 1951, it called for peaceful relations between

Japan and Allied Powers. With the end of the Occupation in April 1952, aspects of restrictions on media were lifted (The Chugoku Shimbun, 2015).

Motivating factors to break the silence

The atomic bombing of Hiroshima resulted in silences imposed by institutions, the Press Code, and emotional trauma. Public censorship of the atomic bombing through the Press Code impacted media reporting and willingness of hibakusha to share personal experiences. Information did not flow freely and rumours about the impacts of the bombing spread as seen by the earlier discussions on marriage and children.

Futagawa's narrative relayed institutional silence as he did not remember learning about the atomic bombing. However, he did recall a collective experience shared by many on an informal and often unspoken level, as school students were in the same situation. Futagawa thought that his age group never learned about the atomic bombings as they knew everything concerning the atomic bomb and its after-effects from relatives. As shown by Futagawa's narrative, people outside of the experience may not have known the effects from the atomic bombing due to absence in dissemination of educational material. My participants noted motivating factors in breaking silence regarding experiences, two of which were sharing knowledge and the Hiroshima Peace Memorial Museum. It was not until a decade after the atomic bombing that the Hiroshima Memorial Museum opened, which indicates the extent of institutional silence. It is during these same years that Futagawa would have been in school. In an article by Jordan (2019), Okamoto [one of my participants] stated his parents never wanted to speak with him about August 6th. "This silence was mirrored throughout much of Okamoto's day-to-day life: from elementary school all the way through to university, where he studied in Osaka, four hours east of Hiroshima, the tragedy of Hiroshima was not discussed." (Jordan, 2019). Institutional silences reveal why some people did not speak of the atomic bombings.

The Press Code suppressed the quantity and quality of information available regarding the damages of the atomic bombings (Hook 2019). Silences were also evident from the emotional trauma of growing up in a devastated city, losing family members to the atomic bomb's immediate and chronic effects, and seeing first-hand the impacts of the devastation. Despite silences which were evident in my research, there was also a collective memory and understanding amongst those who grew up in Hiroshima and knew first-hand the effects of the atomic bomb.

Self-censorship

Concerns about discrimination when seeking marriage and having children is another factor which led to silence among hibakusha. “People tried to keep silent for such a long time.” (Ogura). As mentioned earlier in this chapter, under the intergenerational concerns section, Ogura had classmates who remained silent about their experiences of cancelled weddings and abnormal births. Self-censorship and the stigma attached to being a hibakusha or member of their immediate family was evident. In contrast, Okamoto did not experience an external response to being a survivor of the atomic bombing, but personally felt conscious of his status as a hibakusha. An example of the self-censorship which was raised in his interview are included below:

Shimasaki:

Have you experienced any sort of social response to being hibakusha?

Okamoto:

For me it is the opposite. So, for me, it wasn't so much that people saw me as hibakusha and were discriminated, but it was more me being conscious that I am a hibakusha and many issues or you know struggles came from that. So, can I talk about that?

Shimasaki:

Yes, that would be really good.

Okamoto:

So, one of the things, is you know, my scarring, my injuries. As I have told you before I had injured my left wrist and the right side of my head which is very visible from the outside, so I had this very strong feeling of wanting to hide it throughout my life. So, the other thing is when I got married, well before I got married, I knew I had to tell them that I was a hibakusha but I struggled with telling my wife that I was a hibakusha because I have heard stories that you know, when a man is a hibakusha sometimes the parents of the women would not want their daughter to get married to a hibakusha... Fortunately for me, my wife and my wife's parents they were people who did care too much, you know, that I was a hibakusha.

This consciousness of being hibakusha reveals how the atomic bombing impacted Okamoto's view of himself. Due to his physical injuries and rumours he had heard, it caused mental fragility in disclosing his situation.

Trauma and silence

Trauma associated with the atomic bombing of Hiroshima impacted individual decisions to share experiences. An example of this involuntary silence is shown when Morikawa said, “Hiroshi did not talk about his experience for a long time to other people, even his family. It was too painful to speak about his memories of that cruel sight and hellish experience.” This censorship shows the emotional trauma and toll that the atomic bombing had, as Hiroshi was unable to articulate his experience. Further in-depth discussion of trauma and silence is examined under emotional responses, and trauma and grief.

Dōune Hiroko — Silence and the third generation

Dōune, one of the thirteen primary participants in this research, works with hibakusha doing portrait photography. In her field of work, she has been exposed to some of the silences which span generations. Dōune first got involved with photographing hibakusha at the end of 2014. “I have always wanted to do something for peace, but I had no idea about what I am supposed to do so I was talking to a friend of mine about this and she said, “Why don’t you take a picture of me?” ...At the time I did not know that I was a third generation hibakusha.” Silences mentioned earlier regarding disclosure of hibakusha status was also evident in Dōune’s experience, as she only found out that she herself was a third generation hibakusha two years after she started taking pictures of the group.

Shimasaki:

What brought you to find out that you are a third generation hibakusha?

Dōune:

I couldn’t really ask my family directly, but there were so many hibakusha around me and so I started to wonder, you know, maybe I am one of them too... Even before I was old enough to understand anything, I knew about hibakushas, it is not an uncommon thing, they are basically everywhere.

Through her photography, Dōune challenges silence by publicly sharing hibakusha stories in her work, exhibitions, and publications. Dōune’s exhibitions were mostly in Hiroshima and Nagasaki, but she hoped to share her work in more locations. By the time of her interview in April of 2019, she had photographed approximately 80 families of hibakusha.

There are many hibakusha who went outside Hiroshima or Nagasaki and would come and visit my exhibit and often they would start talking to me about their experience and would say, “I haven’t told this to my own family yet,” and would tell me about their experience.

As well as the silence which surrounded Dōune’s own experience of being a third generation hibakusha, through her work she discovered other silences where people had not shared their stories previously. By photographing hibakusha and choosing to speak out for peace, Dōune provides a platform for other generations of hibakusha to share their experiences.

Shimasaki:

How do you find these people [to photograph], or do they contact you?

Dōune:

So sometimes you know, I would make fliers or try to find people on the internet, and I would contact them but 70 percent of the time they decline. But it goes both ways...



FIGURE 15: THIRD GENERATION PERSPECTIVE.

Above left image is taken by Dōune Hiroko of Sumida Atsuko (hibakusha) and her granddaughter Sumida Hiromi. Right image is taken of Sumida Hiromi holding an image of herself and her now deceased grandmother. Image used with permission.

Silences show that despite the decades which have passed since the atomic bombing of Hiroshima, there are still individuals who do not feel comfortable sharing their stories or experiences within their own family. Photographing hibakusha alongside second and third generations was one reason why Dōune thought people denied her requests to take their photos. Dōune believed denied requests might result from people feeling uncomfortable speaking about their experiences in front of their descendants as there are, “so many different feelings toward the A-bomb and what happened depending on the generation.”

Silence on multiple levels, from educational institutions, media, and the press, to the individual or personal level is a key finding in my research and is seen in every oral history and interview. Silence is both about controlling oneself and being controlled. Flow of information about the atomic bombing and feelings towards it can be restricted which is seen in the interviewee’s stories about lost marriage opportunities and social ostracism.

Collective memory of the atomic bombing has been impacted by silences that constrained information-sharing and stories between generations. As time passed, some individuals felt that they were able to effectively communicate and share their experiences however, recognition of the silences which remain are important. Parts of the affected population are still unable or feel uncomfortable sharing their experiences. Similarly, omissions in the narratives of my participants reveal the ongoing impact of the bombings on an emotional and social level, and how some topics are still be difficult to broach. Understanding why people share their experiences is just as important as understanding why others choose to remain silent.

Emotional responses

Consequences of the atomic bombing of Hiroshima have not ceased. Trauma, grief, fear, PTSD, depression, and a ‘guilty complex’ are some of the responses which were recorded in my research. These responses are also noted in articles by Tomonaga (2015) and Caputo (2019). Like secrecy, the silences discussed above, can intensify feelings of fear and paranoia (Donnan & Simpson, 2007). My participant, Dr. Kamada, examined psychological effects among atomic bomb survivors and found a variety of short and longer-term impacts which are listed below. In the early stages after the bombing he found excessive irritation, stupor and amnesia, two to three years after the bombing suicide among survivors was prominent, and as of 2019, PTSD was evident (Dr. Kamada). Findings Dr. Kamada shared from his research with 1,300 survivors showed 74 percent felt remorse and guilt, 54 percent had an infinite fear against

radiation disease, and 25 percent escaped from memories of their atomic bombing experiences. Acknowledgement of the psychological effects is integral for understanding the experiences of hibakusha and looking beyond physical trauma.

Trauma and grief

Witnessing the atomic bombing and its immediate aftermath, as well as losing family members, caused trauma and grief my participants. One participant, Sugino, had an elder brother who was near the epicentre on the day of the atomic bombing.

For a while, my mother would call out, “Hisashi is back!” when the doors or the windows jarred when the strong wind blew. She would jump up from her bed saying that “Hisashi came home.” ‘Hisashi’ is my missing brother’s name. We do not know how my brother died. I think all mothers who lost their children were continuously worried thinking of how they died. They were concerned whether their child died in the midst of getting home calling out their mother’s names. I can never imagine the emotional pain my mother went through losing her own two children.

This emotionally raw excerpt reflects the trauma of losing a family member and the lack of closure as Sugino’s brother’s body was not found. Sugino shared that it was a “common sense or feeling” to question what happened to missing family members. Trauma and grief are long-lasting. Sugino’s mother would weep and cry for many years after the bombing, in memory of those who died. Aged one at the time, Sugino does not remember her own experience however, she recalled that up until 4th or 5th grade of elementary school, she felt uneasy and would grasp her mother when trucks passed her house with a ‘big noise.’ These noises triggered reactions in her, that reminded her of the atomic bombing.

Another participant Yamada also suffered trauma from witnessing severe physical injury, death and disaster caused by the atomic bombing. She explained,

What I cannot forget and cannot forgive is the terrible appearance of the people who were wounded and died by the atomic bomb. I clearly remember the face of my sister’s friend, ugly destroyed by burns who called my sister’s name, the charred mother of my friend who returned to her children by crawling on all fours. -Yamada

Emotional impacts of the atomic bombing were also shared by my participant, Ogura.

Everybody, each person has scars, trauma, but they did not want to tell and what we have to struggle was bad memory, trauma. I myself have a trauma... the people I gave water and died drinking it in front of me and later my father asked me, "children you shouldn't give water did you know that?" and I was shocked already I gave water that actually among the sufferers, two persons died. I cannot, I could not forget their faces and I was so scared, the nightmare stayed for a long time... what I want to say is like, everybody without saying keeps fear and sadness and everybody has their own memory, bad memory that is, such kind of trauma repeatedly recall and then cannot forget.

-Ogura

In a reflection by Futagawa, he spoke of a small blouse that belonged to his sister which is also discussed in Chapter 1 and Chapter 5. His description of this blouse paints a picture of the grief that his mother felt and shows the emotional impact which it also had on him. Futagawa remembered that the blouse was in the back of a chest of drawers of his mother's, and it was the only thing which she had left that belonged to her daughter. He said, "When I saw the uniform, I was so shocked, I felt pain, I regret, and I was sad." When he questioned why his mother kept the blouse for such a long time, he understood the depth of her sadness and suffering. This blouse which was kept safely as a reminder of his sister who died, demonstrates the emotional impact that the atomic bombing has had on individuals and families. The death and loss of family members, as well as an inability to retrieve their remains or ashes, as mentioned by interviewees, caused major emotional tolls. Therefore, this blouse like many other physical items, became connected with the memory of an individual.

Out of the eleven hibakusha from Hiroshima in this research, three moved away from the city. Miyake commented that he, "did not want to be reminded of life in Hiroshima after the A-bombing, so he just could not stay in Hiroshima any longer." The severe damage he saw to the environment and human life became a factor in his decision to leave and not talk about his experience for decades. Emotional responses of trauma and grief show prolonged effects that the atomic bombing has on individuals and their families.

Fear and worry

Fear and worry are two other emotional responses which emerged from my research.

During the time I was working at the hospital I checked every day if my hair would come out and if I have purple spots on my body or when I brush my teeth I would not bleed from my gums or not, so I checked every day. (Ueno)

Checking for radiation-related signs of illness demonstrates the impact of the bombing on Ueno, as it became a daily act, and reminder of her experience and health concerns. Dr. Kamada mentioned fear in an oral history which he wrote, using the following example as an explanation: “If your friend develops breast cancer, a survivor friend, then another friend of yours develops breast cancer then you fear that you might develop breast cancer too.” This example is similar to part of Sugino’s narrative where she discussed how her friends had got leukaemia suddenly and this caused her worry and question if it would happen to her as well. When talking about her friends’ experiences of cancer Sugino said,

Ever since that day, I was always worried to have cancer someday. When I was 40 years old, I got breast cancer. My mind went blank, but at the same time, I was in shock because I knew it was going to come. Fortunately, I was able to cure it and I have been actively giving out testimonies about the A-bomb attack on the best of my abilities.

This sense of fear or worry seemed to permeate how hibakusha thought about their future and generations to come.

Survivor’s guilt

The concept of guilt was apparent when speaking about surviving the atomic bombing and was associated with experiences where people had to leave the injured and dying to save themselves. Survivor’s guilt is used to describe guilt which people may feel when surviving the death of another (Juni, 2016; O’Connor et al., 2000). More recently this theory of guilt has adapted to include any perceived advantage that a person believes they have in comparison to others (O’Connor et al., 2000). For the purpose of my research, I use the former definition. Hartman (2014) used Anna Freud as an example, to reveal how she was confronted with dreams following the death of her aunts in Nazi concentration camps and her father’s death. Through Freud’s own recovery she came to terms with these deaths and her own survival (Hartman, 2014). The guilt of having survived can occur from witnessing the suffering of others (Hartman, 2014). Amongst the research cohort in an article by Donnan and Simpson (2007) an

individual felt guilty for not having done more during political violence in Northern Ireland. This guilty complex of the victims was also seen in my research with hibakusha from Hiroshima. For instance, the fires which burned the city impacted abilities to rescue the trapped or injured. Miyake recalled how many people could not help their wounded relatives:

I mean parents, friends, partners were just buried in the debris and the fire is coming then the person who is alive could not help the other people and had to discard any feeling of the rescue and that makes the victim, I mean the victim means, living, alive people have some kind of a guilty complex.

Guilt from an inability to help was evident amongst those who witnessed suffering and death. In Dr. Kamada's interview, he found that many survivors felt a strong sense of guilt for having survived and that they felt they should have done more for others. He discussed psychological effects and found when working with hibakusha, there was a strong feeling for those who died in the atomic bombing. "They believe that these people who had died, died on behalf of them." (Dr. Kamada). Another participant Yamada said that even, "years after the bombing, we survivors still vividly remember those who desperately cried for help: their cries and memories are not gone; we are still tormented with remorse that we could not help them." This guilt is both a short- and longer-term implication of the bombing, impacting individuals at the time and through continual memories of the event.

Kajiya touched on a different type of guilt when he relayed his mother's decision to let his elder sister return to the city. This guilt is different to the above examples instead involving choices which were made prior to the atomic bombing.

Kajiya:

Every time August 6th came around, she [Kajiya's mother] was praying and crying. So, she says my sister was dead because of me [mother]. So, I got angry, you did not kill my sister, it is A-bomb, stop crying, so I was angry at her at that time she said to me, she had hidden her emotion before that. At the time, during the war time, 8 to 12-year-olds would have to go to the school, so she [Kajiya's sister] went to the suburb of Hiroshima to escape the bombing. Small children lived with their parents, I am first grade, but my sister was in the third grade, so she was supposed to be in the suburb of Hiroshima in my neighbourhood. When my mother went to see her... my sister begged her to take her back to Hiroshima city, "take me back, take me back." If she takes her back it is very dangerous and my father would scold it, so she [his mother] says "no." So she said to her many times, "if you stay in the countryside it is safe, so stay here"... She really wanted to take her home, but Hiroshima is dangerous, so my mother said, "no, no, no." When my mother got on the bus to go back to Hiroshima, she [Kajiya's

sister] was running to the bus. At that time, the bus was very slow so she [Kajiya's sister] could easily catch up with the bus. She really wanted to come back to Hiroshima to see the family. So, my mother said to my sister, "you will die when you are in Hiroshima city." "I will stay with you my mother, even if I die, I will stay with you," she says. So, my mother gave up at last, and took her to the city in Hiroshima. Just three days after, the A-bomb was dropped. So, she unfortunately was there [and died].

Kajiya said his mother, "regretted that moment, if she wouldn't have taken her to Hiroshima, my sister would have lived." Although the death of Kajiya's sister was not caused by their mother, Kajiya's mother felt guilt over her daughter's death.

Beyond trauma: Sharing experiences

Participants' decisions to speak about their experiences was influenced by a variety of factors including, guilt, retirement, time, opportunities to talk, a willingness to share stories, and hope. In a text by Rigney (2018) discussed in Chapter 4, it was argued that memory studies needed to surpass traumatic memory and capture the cultural transmission of positivity. Examination beyond theories of trauma allowed questioning of why people decided to share their experiences.

Miyake tried to forget his A-bomb experience from his youth in Hiroshima. However, when he was 53, a woman from an A-bomb survivor group [Toyukai] visited him and invited him to join, which he accepted. This group consists of individuals from both Hiroshima and Nagasaki who experienced the atomic bombs, and now live in Tokyo. Miyake said,

I felt so sorry that I did not work for the movement, the hibakusha movement and non-nuclear weapons world and I just had some kind of a guilty complex on that, and I started to be active as one of the sufferers who shared the same experience with them.

The opportunity to share his experience and guilt of not joining the movement earlier, led Miyake to join the hibakusha movement after 40 years working as a civil engineer. Since making the decision to share his testimony, join the movement, and promote peace, Miyake said he will continue to do this "until he stops breathing."

The most common factor why people decided to share their experiences of the atomic bombing was retirement. Retirement was a significant factor as people had more available time, understood and reflected on their experiences in their complexity, felt that they were given opportunities to share testimonies with others, and took ownership of what happened to them.

The time which had passed since the atomic bombing also meant that societal perspectives had changed, which provided a new landscape to share their experiences within. With time, society became more receptive to hearing their narratives, as seen in the discussion about museums later in this section.

Shimasaki:

What prompted you to start talking about your experiences?

Maki:

I worked until I was 72 years old and I had nothing to do with involvement with peace activities and I did not talk about my experience or maybe I could say you know; I chose not to talk about my experience until then. So, after I quit work, I went to the Peace Memorial Museum for the first time. So, I had surgery, you know, other surgeries up until then, but I had worked kind of like a CEO for a stationary store. And when I went to the museum, I was in shock finding out all the details of what it was, and what the A-bomb was and what was behind everything. So, I love baseball and I thought that when I quit my job, I would enjoy sports or enjoy fishing, you know, take it slow. But people like me who were mobilised to work as a junior high student, about 7,200 had died. And from my own school 353 people had died. I found out that 56 of my classmates, people who were in my same grade had died too... So that was the turning point for me. That there might be something that I am supposed to do as the ones that survived.

As a survivor this feeling of ownership to ‘do something’ is relevant to the post traumatic growth theory. Following adversity Maki reflected on his survival and showed positive growth through educating others about the atomic bombs and peace while speaking about his experience.

Okamoto also began to speak about the atomic bombing of Hiroshima after his retirement:

So back in 2004 I retired from my job, up until then I was a work-only kind of person. I worked, I was not involved in any peace activities and, but once I retired I figured well I can't just play around every day, so I tried to find a different kind of job, you know, more part time and the place where I was sent to was the Peace Memorial Museum and there while working I found out about the volunteers there... and so I thought well maybe this is you know, something I could do.

Throughout the fieldwork it was made clear from participants that the Peace Memorial Museum and Peace Memorial Park in Hiroshima are locations for reflecting on the past and contemplating the future. In particular, museums figure in both Okamoto and Maki's narratives as motivating factors for sharing their testimonies. This recognition links to an earlier

discussion on institutional silence and the above discussion on changing social perspectives. There are now public [institutional] education programmes, and open forums for sharing oral histories where discussions take place. Through Okamoto's opportunity to volunteer at the museum he has also become a Hiroshima Peace Volunteer, legacy successor, and shared his own narrative.

In 2013 Okamoto participated in the *Global Voyage for a Nuclear-Free World: Peace Boat Hibakusha Project*. Up until 2013, he had volunteered as a guide in the museum and Hiroshima Peace Memorial Park, but it was during this voyage he spoke about his experience of the atomic bombing for the first time. Okamoto said,

After seeing other hibakusha talk and doing other peace activities I really felt this is exactly what I wanted to do, and right around the time when I got off the Peace Boat the city was actually recruiting people to speak of their experience and also to be trained to pass on other people's experiences, you know, which is the successor programme that they are doing. So, this was a three-year programme, I went to go apply to become a speaker for my own experience and they denied me because they said you don't really have your own memory because you were so young so you cannot really speak as a hibakusha, but we have this successor programme so would you like to sign up for that? So, I figured at the time, the training is three years and if I study it would be a good learning experience for me, and if I do it and if I don't like it you know, I can just not do it and quit. But after about a year of training I found out that there are mainly three parts to this successor programme when I speak to other people; one is talking about the destruction and the effects the A-bomb had on Hiroshima, and the second is the testimony and messages of hibakusha who have their own memory, and the third part was what each of the legacy successors thought personally. And when I found that out I said well, you know, I can use this part to speak about my own thoughts and experience.

The above excerpt demonstrates how peace activities and other hibakusha sharing their experiences had a positive effect as they helped Okamoto become part of the successor programme and to feel comfortable sharing his own experience. Through this programme Okamoto found an avenue to also share his own narrative of the atomic bombing.

Another participant, Morikawa, explained how he had many occasions throughout his life to share his testimony. As a businessman, as well as in his private life, Morikawa would get asked where he was from, which opened discussions about Hiroshima. As of April of 2019, Morikawa had visited 60 countries and travelled overseas more than 150 times. Like Okamoto, Morikawa

also took a voyage on the Peace Boat to share his testimony and appeal to the inhumanity of nuclear weapons.

The 104 days voyage by the Ocean Dream Peace Boat left from Yokohama port August 18th, 2016, with five Hibakusha, including myself. The ship called at 25 ports in 21 countries, and at every port A-bomb testimonies and appeals for nuclear abolition were practised to the people and the politicians. I have done my A-bomb testimony in Malaysia, India, Greece, Belgium, Netherlands, United Kingdom and the United Nations, New York city. -Morikawa

Although Morikawa had opportunities to share his experience and his family's, similar to my other participants, he began to concentrate on this more after retirement.

After retirement I have a lot of free time so that I can concentrate on speaking the testimony. That is why every month, day of 6th I used to go to Hachidori-sha or the Social book café to meet foreign people who come to hear the testimony directly from the survivors like us. -Morikawa

The receptivity of individuals to hearing the narratives of hibakusha is seen by other educational institutions, including schools. Ogura shared her oral history with elementary school students and found that they had difficulty in understanding the circumstances surrounding the atomic bombing as they had not experienced daily life in 1945. For example,

Their imagination was kind of limited, and always they draw a picture, "no, no, no, like this," and for instance, we were wearing sandals, you know going to school but saw the girl they think that was me, you know, wearing beautiful shoes, "oh no, no."
-Ogura

Over time, the openness to hearing these narratives has meant there are greater opportunities for hibakusha to contribute to memories and understanding of the atomic bombing.

Dr. Kamada similarly mentioned how people have shared experiences after retirement. He explained that after his retirement from Hiroshima University he worked for the Hiroshima A-bomb Survivors Relief Foundation as their chairman. There were 200 staff working for the foundation who took care of survivors in the A-bomb survivor's homes. Dr. Kamada saw a need for educating those who were taking care of the survivors, and as a result, developed 14 educational items for the staff. At the time we spoke, a total of 45 educational items were available to wider groups including the general public. One of these items written by Dr.

Kamada is, *One Day in Hiroshima: An Oral History*, which focuses on the story of Mrs Ishii. Dr. Kamada said that he found,

Many people have told me the same thing... People who were exposed to the atomic bomb, when they get older more people start to talk about their experiences, there are some reasons; when they are younger they were struggling in their daily lives and so they didn't have much room in themselves to look around but when they reach the age of 60 or older maybe they have more stable lives and their family have stabilised, in the social status too and then first time it had become possible for them to look back so they can start telling their stories.

When asked what Dr. Kamada wants to achieve from telling hibakusha's stories he explained that he wants people to know and understand the atomic bombing, using accurate information and "exact data based on scientific research." Retirement has enabled participants to have the time to share their stories. Changing societal perspectives and greater technological advances to disseminate experiences are also factors which have impacted decisions to speak out.

My interpreter/translator from Tokyo, Hirata, a Hiroshima hibakusha, also shared his testimony. He felt that emotional fear hindered him from sharing his experience when he was younger. It was not until 1995 when Hirata saw a fellow worker at a protest march that he realised they were both hidden hibakusha within the company and chose to join the movement.

Hirata:

For fear of discrimination, I did not say anything about my bombed experience to the company. I gave myself up to work and often forgot my experience under the pressure of business. When I was young, I tried to be active in the hibakusha movement, but I got disappointed at the fact that it was toyed by politics and so quit participating. Thereafter, I put my interest in my job, caught up in it and have never been active in the hibakusha movement, although I always pray in my heart on August 6 regardless of where I am.

In 1995, at the Smithsonian Museum, Enola Gay, the aircraft used for dropping the A-bomb on Hiroshima, was exhibited but the A-bomb exhibit which showed the disastrous damage of the A-bomb was cancelled due to the opposition of the US Veteran's Association.

One day, while watching a TV news program, I saw the protesting march by a US peace group carrying the banner against the cancellation of the A-bomb exhibits. In the front line of the march there was a short guy with an Asian face. His face looked similar to that of my company senior. When I met him in the company hallway at a later date, I asked him if he joined the march. It turned out that he joined the protest by taking an

annual paid holiday. That was Mr. Miyake [one of my research participants] ... Namely, we are both hidden hibakusha in the company.

This happening reminded me of my origin and incited me to start the hibakusha movement. At first, I started to work in my local community after my work or on weekends. I noticed that most people in the world do not know this inhumane character of A-bomb. I felt that my duty was to dispatch hibakusha's desire for nuclear abolition globally rather than internally... especially to younger generations, with reference to my bombed experience on that day.

Although Hirata became involved with the movement during his working years, he continued to give his testimony in the hope and desire for nuclear abolition. Like those from Hiroshima who became more involved after retirement, an interview in Nagasaki showed similar patterns of involvement.

I started to talk about my experience only when I came here [Referring to the organisation Nagasaki Heiwa]. I was a schoolteacher at the elementary school. I was busy while working so after I retired, I started to work and help here. -Moriguchi

Moriguchi explained that,

I started to talk about my experience in 1969, and back then the Japanese government was saying there is no difference between hibakusha and non-hibakusha in health condition and we knew there was, and so we started the research... And we decided to collect stories by the atomic bomb survivors.

For 50 years the organisation collected testimonies however, Moriguchi recognised difficulty as time progressed resulting from age, situation, and deaths. Consideration that retirement and stability in life could create opportunities for hibakusha to share their stories creates an interesting scenario since with time hibakusha are dying and these stories, if not collected may be lost.

Moriguchi:

There have been many people who do not like to tell their experience to us because they do not want their family to realise, they are hibakusha. But now, those people who refused to tell came to realise they are dying soon and so now is a time they can tell their story. So that even now, those people came out.

Shimasaki:

What population group did you find comes here most to share testimonies?

Moriguchi:

So, about the testimony, at first the young people and older people wanted to tell their experience. However, when Japan's economy kept growing in 1970 to 2000, around this time people hesitated to tell their stories, probably because they may think of their marriage or other discrimination. And recently, since 2010, for the last 10 years or so, people are willing to tell their stories. Probably because as I mentioned before they might, they might think this is the last chance for them to tell.

Decisions to share experiences of the atomic bombing, as found by my research are influenced by factors including, aging, guilt, retirement, time availability, changing societal perspectives, concern that their stories will be lost, a willingness to share experiences, and hope. It is through sharing their memories that knowledge and understanding of the atomic bombings can be recorded and passed on to future generations.

Third generation perspective

Dōune, the photographer who was interviewed in this research, shared experiences of the third generation, providing a different perspective to other participants. When Dōune was asked about the goal of her exhibits on hibakusha, she said she wants it to be a turning point for the third generation as it is a way to listen to their grandparent's stories directly. She remarked, "I think something good can come out from starting to think about peace from that perspective, from a third-generation perspective." As a photographer she tries not to convey her perspective on nuclear weapons, but personally believes they need to be abolished and that "human beings and nuclear weapons cannot coexist..."

So personally, one of the things, I wish this could be one of the ways, a door, for people to start thinking about nuclear issues. And it would be great if it would spread out into the world, not just here or Nagasaki. So, one of my personal wishes is to do an exhibit in one of the nuclear nations. -Dōune

It has been over 75 years since the atomic bombings. Testimonies of the survivors are important to capture as this generation is one of the last who will be able to hear hibakusha's narratives first-hand.

Future hope

Participants in my research showed hope for the future, with focus on gaining support for hibakusha. When discussing what each individual would like to see in the future and their perspective on nuclear weapons, ten of the thirteen interviews recorded a hope to see a more peaceful world without nuclear weapons. The three other participants also voiced their hope for a more peaceful world outside of their oral history and interview. In the closing remarks of Hirata's testimony he shared:

In hearing my story, I hope you realize that the nuclear weapons should not be permitted to coexist with human beings. I do not intend to blame or ask apology for A-bombing. We, Hibakusha, have never uttered a word of retaliation for the A-bombing of Hiroshima and Nagasaki by the United States. Instead, we have tried hard to tell others about our experiences and to speak loudly to abolish nuclear weapons as our obligation on behalf of those who died from the bombing. We are really afraid that continued existence of nuclear weapons will lead to the extinction of the Earth's inhabitants. I believe that human beings should be wise enough to learn from the history or experience. In closing my remarks, I sincerely ask your help to influence and motivate your family, friends, and hopefully your government to abolish all nuclear weapons and save this beautiful planet for our children, grandchildren, and further generations.

Consideration for the future and a desire for a more peaceful world has influenced the actions of my participants. Alongside 'hope,' the term 'peace' was frequently mentioned. Okamoto said, "I do what I do, you know, as a volunteer because I want peace and I want the abolishment of nuclear weapons." Sugino remarked, "I wish no nuclear weapon on earth and peace all over the world. I want to live in a peaceful society." Another example was when Higashino commented,

We must banish war and nuclear weapons from the world. World peace is not far away. The power to create it lays in our hands and in our hearts. Please think about what you can do to help create peace in the world.

Through sharing their narratives my participants, like those in Mann's (2012) article, hope to assist in change and create a world without these weapons. When speaking to elementary students, Okamoto asked them to share whatever was left in their heart after hearing his testimony; "by talking I believe that the circle of peace grows larger and that is where, you know, peace begins." Like other participants, Morikawa stated, "I am planning to dedicate the rest of my life to this, speaking out for peace." Nuclear weapons are a direct challenge to the peace that my participants seek.

As long as there are nuclear weapons, there is no peace on the Earth. So that the existing nuclear weapons are never used, I hope no more hibakusha would be created. I am talking about my experience of the atomic bombings while continuing the campaign of the abolition of nuclear weapons, hoping that the dead people as the foundation of peace will have a day of peaceful sleep as soon as possible. -Yamada

The desire of my participants to share their narratives for peace reflects the hope that they have for the future. Maki commented that ultimately, “war is wrong, and we should not fight with each other, and as a hibakusha, nobody should have to experience what we experienced.” His desire was eloquently clear, and despite the majority of his oral history being translated, Maki shared his hope in English, “No more war. No more hibakusha.” Maki’s own story has been memorised by three people to pass on to the next generation. Sharing narratives emerged throughout the research and is key to future understandings of the atomic bombings and nuclear weaponry. Maki’s final comment illustrates his desire for peace and to have his story, alongside other hibakusha’s shared.

I would just like to ask that, you know, in our old age we are still looking forward and working hard towards peace. We would appreciate it, I would appreciate it, if our thoughts are taken to heart and spread to the world for a better future. -Maki

As seen above in my research, the testimonies and interviews finished on a hopeful note. When asked why each individual decided to participate in my research, their responses were resoundingly similar incorporating hope. Sefton, an individual who I interviewed that witnessed the Grapple tests said,

Oh, that’s quite simple, look I am always hounding people to research us and generally as I said because I’m a layman they don’t take any notice of me. You see you never know what’s going to come out of what you may write... And you never know who is going to look at it in the future.

Together with my participants we have worked to create a memory of Hiroshima and share experiences.

Memories and oral histories

With the passing of the 75th anniversary of the atomic bombings, the number of hibakusha who are healthy and alive must be considered. If their experiences are not recorded soon, they may be lost or forgotten. Moriguchi explained, “I am already old and so I cannot do much, but I want you, young people, to create the world without nuclear weapons.” Hibakusha are an aging population. Reflection of the Peace Boat, mentioned earlier by Okamoto and Morikawa, shows the impact of time on abilities to share testimonies. The Peace Boat Project began in 2008 and conducts global voyages to share testimonies of hibakusha (Peace Boat, 2020). Morikawa expressed that originally hundreds of hibakusha applied, “But currently... gathering only five people is very difficult.” The voyage Morikawa attended in 2016, only had five hibakusha apply. When referring to his own experience, this was followed by the comment, “Masochistically I regarded myself as ‘endangered species.’” Dōune also spoke of the impact of time when I asked her what she had learned from photographing hibakusha. Her response was,

One of the things that I feel is that we as third generation is probably like the last generation that we can hear first-hand stories from our grandparents and actually remember them to pass it on. But as I take the pictures, what I did realise is that our generation a lot of us have not heard the stories first-hand from our own family and one of the things that, you know, I feel that that would give power for us to actually hear the story first-hand and to be able to pass it on or to remember... that is one of the things that I have learned. -Dōune

The concept of family history giving an individual a longer personal lifespan (Thompson, 2015) which I raised in Chapter 4 is significant, relating to Dōune’s comments showing the sense of connection between family and memory. Acknowledgement of time which has passed since the atomic bombing and the number of hibakusha who are still alive shows importance of collecting their oral histories before it is too late.

Conclusion

This chapter has shown a variety of perspectives both at the time of the atomic bombing of Hiroshima and since. Each experience contributes to the event’s narrative. For example, Futagawa can provide a different perspective as an in-utero survivor to first and second-generation hibakusha. When examining the longer-term implications of the atomic bombing, it was discovered that the emotional impacts of trauma, grief, silence, worry, and concern were raised more frequently than physical health problems which the participants had. These

narratives add to our understanding of the atomic bombing of Hiroshima and nuclear arms through showing the variety of consequences which survivors suffered and how their lives have been altered as a result. Consideration of the holistic experience of each participant contributes to the literature on nuclear weapons. Through this research's examination of memory regarding experiences of eleven hibakusha and two professionals, it adds to discussions on nuclear weapons, and places their narratives in current debates. The following chapter summarises findings and provides an overview of my research.

CHAPTER 7

CONCLUSION

My thesis, *Seventy-five Years on: An Ethnographic Exploration of Oral Histories on the Atomic Bombing of Hiroshima*, has aimed to build on awareness and understandings of survivor's experiences of nuclear-weapons-use and consider their long-lasting impacts.

Importance of recording memory

My research shows the individualised experiences of my participants. During this research I was fortunate enough to speak to hibakusha, their families, and professionals who have worked with the aforementioned groups. Oral histories and interviews of hibakusha must be collected and preserved to contribute to the narrative on the atomic bombing of Hiroshima. As Borg (2017, p. 29) noted, "The timeless nature of oral histories... allows previously suppressed stories to reach more listeners in the present day." Listening to what survivors have to say is a valuable way we can learn about what happened on the day and how it has impacted lives since 1945. It has now been 75 years since the atomic bombings of Hiroshima and Nagasaki. When there are no living survivors, the life narratives which have been shared will influence how the memory of the atomic bombing of Hiroshima is understood. As discussed in Chapter 4, oral history as part of ethnographic inquiry is important as a means to consider certain times, places, and establish collective memory (Plummer 2011).

Overview of findings

Findings of my research as seen in Chapter 5 and Chapter 6 show key themes of memory, and physical, emotional, and social implications. My participants suffered more than physical injury, with the emotional consequences of being a survivor remaining with them and their families for over seven decades. Every research participant showed emotional responses towards the atomic bombing of Hiroshima. For those who witnessed destruction and harm, aspects of fear, trauma, worry, and guilt were evident. Enforced silence, censorship, and the potential for discrimination had implications upon individuals' decisions to speak out, with the majority of my research participants remaining silent for years after the atomic bombing. The discussion chapters show that amidst these silences, rumours spread which raised social concerns surrounding marriage and intergenerational harm. As Hashizume (2019, p. 106) said, "No doubt, each and every survivor has had to secretly live with all sorts of emotional and

physical pain.” Damage caused by the atomic bombings, which is seen in Chapter 6, extend beyond the individual, and have impacted subsequent generations. Despite challenges that my research participants faced, they demonstrated post-traumatic growth. Over time, they have shown an appreciation for life, maintained and developed relationships through sharing their experiences, taken on new possibilities [such as the Peace Boat Voyage], and displayed strength and hope for the future. Importantly, each oral history and interview shows how memory of the same event can be viewed in many ways. The narratives of each participant contribute to memory of the atomic bombing of Hiroshima, with each experience adding more depth and understanding to the implications of nuclear weapons use.

Fieldwork

My research not only used dialogue, but also texts, images, and other tools. Through fieldwork I positioned myself in my own research and placed what my participants had told me within wider contexts. Stories of the physical harm which had been shared were reiterated when I visited the Hiroshima Peace Memorial Museum — refer to Figure 16.



FIGURE 16: LOOKING TOWARDS THE HIROSHIMA PEACE MEMORIAL MUSEUM.

Image taken from the Hiroshima Peace Memorial Park looking towards the Hiroshima Peace Memorial Museum in the days following its reopening in 2019.

I arrived in Hiroshima for the reopening of the museum following renovations. The glass front of the building let in the spring sunlight, and I queued for a short time to get my ticket for the exhibition. After walking up the stairs, I was shocked to be plunged into a monotonous room

with an enlarged image of Hiroshima that spanned the height and width of a wall. Pushed further into the exhibition by the heaving crowds, I was confronted by the graphic nature of the photographs, drawings, and other museum items. Each item felt as if they told stories themselves. The drawings by A-bomb survivors, of figures with reddened skin hanging off, bloated, with expressions of pain and horror reiterated the stories of the suffering which had been shared by my own research participants. These were not just imagined images; they were the experiences of the people who had drawn them. I could feel the emotion of each image, and they were etched into my memory in perfect clarity. The museum made items like Futagawa's deceased sister's blouse which was examined in Chapter 1 and Chapter 6 more tangible, as I had the opportunity to see the physical objects which participants discussed. My own experiences and actions in the research helped me to engage with and understand my participants and what they had to share.

Autoethnography

Incorporation of autoethnography allowed reflexivity and consideration of my role in the journey of this thesis. In my research, ethnography is a mediation of meanings and interpretations between the researcher, translator, and participants. Through my own experiences, I gained a deeper element of engagement and understanding of my participants and their narratives on the atomic bombing of Hiroshima. Visiting physical locations described in stories and seeing the atomic bomb dome gave me a greater sense of the damage that was caused and how it continues to impact people and the city. No matter how much I talked with my own family, read books, or Japanese guides, there is nothing quite like immersing yourself in the culture, and finding a connection with the people and their history.

A journey of (re)discovery

This thesis has been a journey of discovery. Travelling to Japan to hear experiences of the atomic bombings of Hiroshima and Nagasaki was part of a journey of personal rediscovery and discovery into how the atomic bombings are remembered. Stepping off an overnight flight into the black of the evening in Narita, Japan, I was expecting an instant connection with this part of my heritage. In honesty, I was so exhausted that I drifted in and out of sleep the whole way to my accommodation. The moment I felt a real connection with Japan and the people I had come to meet was in the informal times when we sat down over dinners and started to talk about our everyday lives. We laughed, shared wine and beer, and ate food until our bellies were full. Through the research journey I had the pleasure to learn not only about my research

participants but the people, the gatekeepers, interpreters, and visitors to the city. They showed me the meaning that Hiroshima still holds to this day. The development of memory of the atomic bombing is intertwined with aspects of life. Through their survival and openness to share experiences, I was able to hear from hibakusha how one act has changed the lives of so many. My participants, like myself, have not journeyed alone. As seen in previous chapters, narratives which have been shared down generations are a testament to this, extending an individual's sense of life history far beyond their own. Through my participants' willingness to journey with me, they have contributed to the literature on human impacts of nuclear weapons use.

Legality of nuclear weapons

Nuclear weapons development and use have not gone without opposition from individuals, groups, and campaigns (Rees 2003, Wittner 2010). Similarly, there have been introductions of treaties and local policies, which have been discussed in earlier chapters, preventing their existence and use. My participants viewed nuclear abolition as a must. While conducting my research the TPNW, mentioned earlier in Chapter 1 and Chapter 4, was ratified. As of January 2nd, 2021, there were 86 signatory states and 51 state parties (United Nations Office for Disarmament Affairs, 2020). The TPNW which will enter into force on January 22nd, 2021, is the first global multilateral agreement to comprehensively prohibit nuclear weapons, with aims towards their total elimination (International Committee of the Red Cross, 2017, United Nations Office for Disarmament Affairs, 2020). Developments in national law and international agreements have the potential to create positive change which addresses past harm and prevents future damages.

Limitations

Limitations of my research which have been discussed earlier in Chapter 3 include, the process of interpretation/translation, acknowledgement that 73 years had passed since the atomic bombing of Hiroshima at the time of the interviews, age of participants, and that some people closest to the epicentre died immediately preventing them from sharing their own stories. As this research was conducted with participants in Japan, and I do not speak Japanese, an interpreter/translator was present at all the oral histories and interviews. Some participants were able to share their narratives in English, but for those who spoke in Japanese limitations have been discussed in the methodology chapter. Using an interpreter/translator also meant there was potential for slippage between translations, and that translators could leave a mark on the

research since they had a role in interpretation of what was said. I addressed challenges of interpretation and translation through acknowledgement of the triad of interviewer, translator, and respondent, using jargon-free language, incorporating non-verbal communication, allowing enough time for translation, and clarifying what was said. Through recognition of this limitation, I was able to put processes in place to assist communication. The length of time since the atomic bombings can also be viewed as a limitation due to potential for memory to be impaired with more than seven decades having passed. Additionally, my research only examines the experiences of nine hibakusha alive at the time of the atomic bombing, one in-utero survivor, a second generation hibakusha, and two professionals who have worked with people from the aforementioned groups. Due to size constraints of this MA thesis, I was unable to include the entirety of my findings from the oral histories and interviews. What has been presented are key themes and significant factors to consider in the experiences of those exposed to the atomic bombing of Hiroshima.

Suggestions for further research

I suggest that further exploration into the human experiences of the atomic bombing of Hiroshima can contribute to understandings and memory of the event. Being open and receptive to narratives is important, as Borg (2017) wrote in *Little known South Australian history: Uncovering the truth behind the nuclear weapons project at Maralinga*, acknowledgement of oral traditions as a valid means to establish truths is an on-going issue. Through providing people with a means to share narratives [both of their own experiences and others], it gives them an opportunity to participate in history-making processes. Spending more time in the field and conducting further research into experiences would be beneficial, as seen from my findings, since each narrative makes significant contributions to memory of the event.

My research demonstrates how the indiscriminate atomic bombing was a defining moment in the lives of my participants who are hibakusha, and that the short and longer-term implications extend beyond the individual. Each narrative is a view of the same event but filled with perspective and meaning. There is an interrelated nature, yet no two participants had the same experience, which reveals why narratives should be gathered before these memories are lost and more hibakusha die. It is through hearing about nuclear weapons and their impacts on humans that we can build on knowledge and education to assist in nuclear abolishment, peace, and the prevention of future harm.



FIGURE 17: CHAINS OF 1,000 PAPER CRANES⁵⁹ FOLDED AND SENT TO THE HIROSHIMA PEACE MEMORIAL PARK.

The cenotaph in the Hiroshima Peace Memorial Park, dedicated to the victims of the atomic bombing reads, *Let all the souls here rest in peace. For we shall not repeat the evil.* Keeping the memory of the atomic bombings of Hiroshima and Nagasaki alive is important so that we can learn from the past and acknowledge those whose lives have been impacted. We have a responsibility to the future, to generations to come, and most of all, to those affected by the atomic bombings and nuclear weapons tests globally. Threats of nuclear warfare are not new, but the ways in which we respond to them can shape future directions and outcomes that are faced.

⁵⁹ Paper cranes have become a symbol of peace associated with Sadako Sasaki who suffered leukemia after exposure to the atomic bombing as an infant. According to Japanese tradition if you fold 1000 cranes you are granted a wish, Sadako died before she was able to complete folding her 1000 cranes, so her classmates finished folding the final cranes in her honour.

A Prayer for Peace

An inferno on earth,
Scorches everything it touches.
Manmade and mankind,
Beyond repair.

A silent march.
You see people reach out for their mothers,
Drowning in the very water,
They begged for.

Tears that no longer run.
Unable to speak,
Chained without shackles.
A life forever changed.

And yet,
What remains is strength,
And hope,
And a prayer for peace.

Olivia Shimasaki

REFERENCES

- Abrams, L. (2010). *Oral history theory*. Routledge.
- Ajlouni, A.W. (2007). Health Consequences of nuclear fission products. *Journal of Applied Sciences and Environmental Management*, 11(3), 11-14.
<http://www.bioline.org.br/pdf?ja07057>
- Allen, P. B. (2009). *Violence in the emergency department: Tools and strategies to create a violence-free ed*. <http://ebookcentral.proquest.com>
- Atomic Heritage Foundation (2017, July 27). *Survivors of Hiroshima and Nagasaki*. Atomic Heritage Foundation. <https://www.atomicheritage.org/history/survivors-hiroshima-and-nagasaki>
- Atomic Heritage Foundation. (2019). *Target Committee Recommendations*.
<https://www.atomicheritage.org/key-documents/target-committee-recommendations>
- Baba, Y. (2015, June 11). University researchers find first evidence of internal exposure to radiation in lung cancer cells; victim lived 4.1 km from hypocenter in Hiroshima. *The Chugoku Shimbun*. <http://www.hiroshimapeacemedia.jp/?p=45474>
- BBC News (2020, August 6). *Hiroshima bomb: Japan marks 75 years since nuclear attack*.
<https://www.bbc.com/news/world-asia-53660059>
- Beach, H. (2003). The Nuclear Battlefield. In D. Holdstock and F. Barnaby, (Eds.), *The British Nuclear Weapons Programme, 1952-2002* (pp. 31-44). Frank Cass and Company Limited.
- Bernard, V & Homma, H. (2015). After the atomic bomb: hibakusha tell their stories. *International Review of the Red Cross*, 97(899), 507-525.
doi:10.1017/S1816383116000242

- Berreman, G.D. (2007). Ethics versus “realism” in anthropology. In A. Robben & Sluka, J.A. (Eds.), *Ethnographic Fieldwork: An Anthropological Reader* (pp. 298-315). Blackwell.
- Borg, M. (2017). Little known South Australian history: Uncovering the truth behind the nuclear weapons project at Maralinga. *Oral History Australia Journal*, (39), 23-31.
- Brenner, D. (2014). Effects of ionizing radiation on living systems. In H. Caldicott (Ed.), *Crisis without end: the medical and ecological consequences of the Fukushima nuclear catastrophe*. The New Press.
- Briggs, A. (2020, August 5). Twists of fate made Nagasaki a target 75 years ago. *National Geographic*. <https://www.nationalgeographic.com/history/2020/08/twists-fate-made-nagasaki-target-atomic-bomb/>
- Brunel University London. (2016, April 20). *Study to examine nuclear test veterans for genetic damage*. <https://www.brunel.ac.uk/news-and-events/news/articles/Study-to-examine-nuclear-test-veterans-for-genetic-damage#>
- Busby, C. (2006). *Wolves of Water*. Green Audit Books.
- Caldicott, H. (2014). *Crisis without end: the medical and ecological consequences of the Fukushima nuclear catastrophe*. The New Press.
- Campaign for Nuclear Disarmament. (n.d.). *How do Nuclear Weapons Work?* <https://cnduk.org/how-do-nuclear-weapons-work/>
- Caputo, I. (2019, March 26). Seven decades after the bomb, children of Hiroshima victims still worry about hidden health effects. *The World*. <https://www.pri.org/stories/2019-03-26/seven-decades-after-bomb-children-hiroshima-victims-still-worry-about-hidden>
- Carney, M. (2015, March 9). Tokyo WWII firebombing, the single most deadly bombing raid in history, remembered 70 years on. *News*. <https://www.abc.net.au/news/2015-03-09/tokyo-wwii-firebombing-remembered-70-years-on/6287486>

- Caruth, C. (1995). An interview with Robert Jay Lifton. In C. Caruth (Ed.), *Trauma. Explorations in memory*. (pp. 128-147). The Johns Hopkins University Press.
- Caruth, C. (1995a). *Introduction*. In C. Caruth (Ed.), *Trauma. Explorations in memory*. (pp. 151-157). The Johns Hopkins University Press.
- Caruth, C. (1995b). *Trauma. Explorations in memory*. The Johns Hopkins University Press.
- Caruth, C. (1996). *Unclaimed experience: Trauma, narrative, and history*. The Johns Hopkins University Press.
- Caruth, C. (2014). Parting words: Trauma, silence, and survival. *Intervalla: Platform for Intellectual Exchange*, 2, 20-33.
- Chan, M. (2017, September 22). What is the difference between a hydrogen bomb and an atomic bomb? *TIME*. <https://time.com/4954082/hydrogen-bomb-atomic-bomb/>
- Chappell, E. (2020). Hibakusha memories: Between the generations. *Wasafiri*, 35(2), 79-86. doi:10.1080/02690055.2020.1721143
- Clancey, G. & Chhem, R. (2015). Hiroshima, Nagasaki, and Fukushima. *Lancet*, 386(9992), 405-406. doi:10.1016/S0140-6736(15)61429-5
- Clifford, J. (1983). On ethnographic authority. *Representations*, 1(2), 118-146.
- Collier, L. (2016). Growth after trauma. Why are some people more resilient than others-and can it be taught? *American Psychological Association* 47(10), 48.
- Connor, N. (2019, December 14). *What is radioactive half-life -physical half-life – definition*. <https://www.radiation-dosimetry.org/what-is-radioactive-half-life-physical-half-life-definition/>

- Cortazzi, M. (2011). Narrative analysis in ethnography. In Atkinson, P., Coffey, A., Delamont, S., Lofland, J., & Lofland, L. (Eds.). *Handbook of Ethnography* (pp. 384-394). SAGE Publications Ltd.
- Donnan, H., & Simpson, K. (2007). Silence and violence among Northern Ireland border protestants. *Ethnos*, 72(1), 5-28. doi:10.1080/00141840701219494
- Emerson, R. M., Fretz, R. & Shaw, L. (2011). Participant observation and fieldnotes. In Atkinson, P., Coffey, A., Delamont, S., Lofland, J., & Lofland, L. (Eds.). *Handbook of Ethnography* (pp. 352-368). SAGE Publications Ltd
- Explore Hiroshima. (2020, June 20). *Flame of peace*.
<https://www.hiroshima-navi.or.jp/en/post/007123.html>
- Grant, R.G. (n.d.). Bombing of Tokyo. World War II. *Britannica*.
<https://www.britannica.com/event/Bombing-of-Tokyo>
- Greenwell, J. (2013). The atom bombing of Hiroshima and Nagasaki: Were they war crimes?', *ISAA Review*, 12(2), 35-44.
- Grzybowski, M.E. (2018). Knowledge and Power in Occupied Japan: U.S. Censorship of Hiroshima and Nagasaki. *Senior Projects Spring 2018*. 134.
https://digitalcommons.bard.edu/senproj_s2018/134
- Haley, A. (2015). Black history, oral history and genealogy. In R. Perks, & Thomson, A. (Eds.), *The Oral History Reader* (3rd ed., pp. 1-17). Routledge/Taylor & Francis Group.
- Hammersley, M. & Atkinson, P. (2007). *Ethnography: Principles in Practice* (3rd ed). Routledge.
- Hanson, V. (2016, April 21). The horrors of Hiroshima in context. *National Security and Defense*. <https://www.nationalreview.com/2016/04/hiroshima-nagasaki-bombings-historical-context/>

- Hartman, J. J. (2014). Anna Freud and the holocaust: Mourning and survival guilt. *International Journal of Psychoanalysis*, 95(6), 1183-1210. doi:10.1111/1745-8315.12250
- Hashizume, B. (2019). *The day the sun fell*. Bouterey S. (trans.). Austin Macauley Publishers Ltd.
- Heyl, B. S. (2011). Ethnographic interviewing. In Atkinson, P., Coffey, A., Delamont, S., Lofland, J., & Lofland, L. (Eds.). *Handbook of Ethnography* (pp. 369-383). SAGE Publications Ltd.
- Hida, S. (n.d.). *Account of a medical doctor who had to face innumerable deaths of victims from the exposure to A-bomb radiation*. <https://www.afsc.org/sites/default/files/documents/Shuntaro%20Hida%2C%20Japan.pdf>
- Hirohara, N. (2020, June 26). Ninoshima: Island of refuge. *Nippon.com*. <https://www.nippon.com/en/column/g00381/>
- Hiroshima-Nagasaki Publishing Committee (Eds.). (1981). *Days to remember: An account of the bombings of Hiroshima and Nagasaki*. The Japan Peace Museum/ Atelier for Peace.
- Hiroshima Peace Memorial Museum. (n.d.). *Heat*. http://hpmmuseum.jp/modules/exhibition/index.php?action=ItemView&item_id=59&lang=eng
- Hiroshima Peace Memorial Museum. (1987). *The outline of the atomic bomb damage in Hiroshima*. Hiroshima Peace Memorial Museum.
- Hixson, L. (2012, July 12). Japanese doctor concerned about risks from internalized radiation after Fukushima disaster. *Enformable*. <http://enformable.com/2012/07/japanese-doctor-concerned-about-internalized-radiation-after-fukushima-disaster/>

- Hook, G. (1991). Censorship and reportage of atomic damage and casualties in Hiroshima and Nagasaki. *Bulletin of Concerned Asian Scholars*, 23(1), 13-25. doi: 10.1080/14672715.1991.10413159
- Horowitz, A. J. & Primordial Soup Co. (2011). *Nuclear Savage. The Islands of Secret Project 4.1*. <https://vimeo.com/ondemand/28826>
- Ikeda, K. (2014). Unarticulated memories of the battle of Okinawa: The early fiction of second-generation war survivor Medoruma Shun. *Positions: East Asia Cultures Critique*, 22(2), 301-328. doi:10.1215/10679847-2413691
- Imamura, S. (1989, May 13). *Kuroi Ame (Black Rain)*. [video].
- International Committee of the Red Cross (2017). *2017 Treaty on the Prohibition of Nuclear Weapons Signature and Ratification Kit*. eng_.ratification_kit_2017_tpnw.pdf
- International Review of the Red Cross (2015). After the atomic bomb hibakusha tell their stories. *International Review of the Red Cross*, 97(899), 507–525. doi:10.1017/S1816383116000242
- Ives, M. (2020, August 6). *After atomic bombing these photographers worked under mushroom clouds*. <https://www.nytimes.com/2020/08/06/world/asia/hiroshima-nagasaki-japan-photos.html>
- James, D. (2015). ‘Listening in the Cold’: The practice of oral history in an Argentine working-class community. In R. Perks, & Thomson, A. (Eds.), *The Oral History Reader*. (3rd ed., pp. 73-91). Routledge/Taylor & Francis Group.
- Japan Rail. (2020, June 26). Ninoshima. *Japan Experience*. <https://www.japan-experience.com/city-hiroshima/ninoshima>
- Jiji (2018, August 14). Photographer using project to pass on experiences of A-bomb survivors through family portraits. *Japan Times*. https://www.japantimes.co.jp/?post_type=news&p=1466017#.Xoe7jYgzZPY

- Johnston, E. (2020, June 23). The Battle of Okinawa: Fierce fighting at the end of World War II. *Japan Times*. <https://www.japantimes.co.jp/news/2020/06/23/national/battle-of-okinawa-world-war-ii/>
- Johnston, E. (2020a, August 12). Japan to fight ruling recognizing Hiroshima ‘black rain’ victims. *Japan Times*. <https://www.japantimes.co.jp/news/2020/08/12/national/crime-legal/japan-fights-hiroshima-black-rain-ruling/>
- Jordan, M. (2019, June 10). Inside the café where A-bomb survivors reveal their stories. *News.com.au*. <https://www.news.com.au/travel/destinations/asia/inside-the-cafe-where-hiroshima-survivors-reveal-their-stories/news-story/69085014c47073d083c6e80e5798c2a2>
- Juni, S. (2016). Survivor guilt: A critical review from the lens of the holocaust. *International Review of Victimology*, 22(3), 321-337. doi:10.1177/0269758016637480
- Kapborg, I., & Berterö, C. (2002). Using an interpreter in qualitative interviews: Does it threaten validity? *Nursing Inquiry*, 9(1), 52-56.
- Kawanaka, H. (2015). I turned out to be a hibakusha soon after I was born. In Japan In-Utero Hibakusha Network (Ed.), *Reflecting on the 70 year after the A-bombing: An anthology of autobiographies of in-utero hibakusha* (pp. 11-12). Japan In-Utero Hibakusha Network.
- Knowles, A. (2011). Resilience among Japanese atomic bomb survivors. *International Nursing Review*, 58(1), 54-60. doi:10.1111/j.1466-7657.2010.00855.x
- Kondo, D. K. (1986). Dissolution and reconstitution of the self: Implications for anthropological epistemology. *Cultural Anthropology*, 1(1), 74-88.
- Kondo, D. K. (1990). *Crafting Selves: Power, Gender and Discourses of Identity in a Japanese Workplace*. University of Chicago Press.

- Kosakai, Y. (1972). *A-bomb: A city tells its story*. Hiroshima Peace Culture Foundation.
- Kyodo. (2017, March 21). Noted Hiroshima hibakusha Dr. Shuntaro Hida dies at 100. *The Japan Times*. <https://www.japantimes.co.jp/news/2017/03/21/national/noted-hiroshima-hibakusha-dr-shuntyaro-hida-dead-100/>
- Kyodo News (2020, August 11). Japan gov't to appeal ruling on A-bomb "black rain" victims. *Kyodo News*. <https://english.kyodonews.net/news/2020/08/93964dcd51c1-breaking-news-japan-govt-to-appeal-ruling-on-a-bomb-black-rain-victims.html>
- Langley, P. (2014). Dr Hida. Bura disease is Chronic Radiation Syndrome. *Paul Langley's Nuclear History Blog*. <https://nuclearhistory.wordpress.com/2014/02/25/dr-hida-bura-bura-disease-is-chronic-radiation-syndrome/>
- Larkin, P. J., Dierckx de Casterlé, B., & Schotsmans, P. (2007). Multilingual translation issues in qualitative research: Reflections on a metaphorical process. *Qualitative Health Research*, 17(4), 468-476. doi:10.1177/1049732307299258
- Laub, D. (1995). Truth and Testimony: The Process of the Struggle. In C. Caruth (Ed.), *Trauma. Explorations in memory* (pp. 61-75). The Johns Hopkins University Press.
- Lendon, B. & Jozuka, E. (2020, March 8). History's deadliest air raid happened in Tokyo during World War II and you've probably never heard of it. *CNN*. <https://edition.cnn.com/2020/03/07/asia/japan-tokyo-fire-raids-operation-meetinghouse-intl-hnk/index.html>
- Lewis, J. & Stelle, B. (2001). *Hell in the Pacific. From Pearl Harbor to Hiroshima and beyond*. Channel 4 Books.
- Madison, D.S. (2012). *Critical Ethnography: Method, Ethics, and Performance*. Sage.
- Maki, R. & Niihata, T. (2020). Landscape design in Hiroshima Peace Memorial Park: Transition of the design by Kenzo Tange. *Japan Architectural Review*, 3. <https://doi.org/10.1002/2475-8876.12136>.

- Mann, C. (2012, August 10). Hiroshima survivors spread message of peace. *Stuff*.
<https://www.stuff.co.nz/the-press/news/7451022/Hiroshima-survivors-spread-message-of-peace>
- Marcoñ, B. (2011). Hiroshima and Nagasaki in the eye of the camera: Images and memory. *Third Text*, 25(6), 787-797. doi:10.1080/09528822.2011.624352
- Marcus, G.E. & Fischer, M. (1986). *Anthropology as Cultural Critique: An Experimental Moment in the Human Sciences*. University of Chicago Press.
- Marshall News (2020, March 7). *History's deadliest air raid happened in Tokyo during World War II and you've probably never heard of it*. <http://marshallnews.pk/historys-deadliest-air-raid-happened-in-tokyo-during-world-war-ii-and-youve-probably-never-heard-of-it/>
- Masato, I. (2020, August 4). Fight for recognition: The long ordeal of “black rain” survivors. *Nippon.com* <https://www.nippon.com/en/japan-topics/c08202/>
- Medicine, Conflict and Survival. (1999). Mortality and Morbidity in Crews of Two Royal New Zealand Naval Frigates Present for Grapple Tests off Christmas Island 1957-58. *Medicine, Conflict and Survival*, 15(sup001), 29-32.
- Miki, M. (2017, December 8). *Preserving the hibakusha legacy: Project in Hiroshima aims to keep testimonies of atomic bomb survivors alive*. <https://www.nippon.com/en/features/c03307/preserving-the-hibakusha-legacy-project-in-hiroshima-aims-to-keep-testimonies-of-atomic-bo.html>
- Murphy, E. & Dingwall, R. (2001). The ethics of ethnography. In Atkinson, P., Coffey, A., Delamont, S., Lofland, J., & Lofland, L. (Eds.). *Handbook of Ethnography* (pp. 339-351). SAGE Publications Ltd.

- Murray, R.K. (2003). The Legality of British Nuclear Weapons. In D. Holdstock and F. Barnaby, (Eds.), *The British Nuclear Weapons Programme, 1952-2002* (pp. 23-30). Frank Cass and Company Limited.
- Nagasaki National Peace Memorial Hall for the Atomic Bomb Victims. (n.d.). *The Nagasaki atomic bomb damage records. The National Mobilisation Act*. <https://www.peace-nagasaki.go.jp/abombrecords/b010101.html>
- Nagasaki National Peace Memorial Hall for the Atomic Bomb Victims. (2020, June 20). *About the hall*. <https://www.peace-nagasaki.go.jp/en/about>
- Naono, A. (2019). The origins of ‘hibakusha’ as a scientific and political classification of the survivor. *Japanese Studies*, 39(3), 333-352. doi:10.1080/10371397.2019.1654854
- Narayan, K. (1993). How native is a “Native Anthropologist?”. *American Anthropologist*, 95(3), 671-686.
- Negron, V. (2020, July 30). Hiroshima court expands class of atom bomb victims who can claim free medical care. *Jurist. Legal News and Commentary*. <https://www.jurist.org/news/2020/07/hiroshima-court-expands-class-of-atom-bomb-victims-who-can-claim-free-medical-care/>
- New Zealand Veterans’ Affairs. (2019). *Service for children of Viet Nam & Grapple veterans*. <https://www.veteransaffairs.mil.nz/assets/Policy/148ba002b4/Services-for-Children-of-Viet-Nam-and-Operation-Grapple-Veterans.pdf>
- O’Connor, L. E., Berry, J. W., Weiss, J., Schweitzer, D., & Sevier, M. (2000). Survivor guilt, submissive behaviour and evolutionary theory: The down-side of winning in social comparison. *British Journal of Medical Psychology*, 73(4), 519-530. doi:10.1348/000711200160705

- O'Malley, G. F. (2016). The grave is wide: The hibakusha of Hiroshima and Nagasaki and the legacy of the atomic bomb casualty commission and the radiation effects research foundation. *Clinical Toxicology*, 54(6), 526-530. doi:10.3109/15563650.2016.1173217
- Okinawa Prefecture. (2013). *Introduction of Okinawa*. <https://www.pref.okinawa.lg.jp/site/chijiko/kohokoryu/foreign/english/introduction/index.html>
- Olesen, T. (2020). The Hiroshima memory complex. *The British Journal of Sociology*, 71(1), 81-95. doi:10.1111/1468-4446.12717
- Peace Boat. (2020). *About Us*. <https://peaceboat.org/english/about-peace-boat>
- Plummer, K. (2011). The call of life stories in ethnographic research. In Atkinson, P., Coffey, A., Delamont, S., Lofland, J., & Lofland, L. (Eds.). *Handbook of Ethnography* (pp. 395-406). SAGE Publications Ltd.
- Pope, A. (2006). The house of being still stands: Nuclear holocaust and human meaning. *Journal of Humanistic Psychology*, 46(3), 303-322. doi:10.1177/0022167806286274
- Portelli, A. (2011). *They say in Harlan County: An oral history*. Oxford University Press.
- Ramamurthy, V. S. (2014). The discovery of nuclear fission – a game changer in the history of scientific research. *Current Science*, 106(4), 509-510.
- Rauch, J. (2002). Firebombs over Tokyo. *The Atlantic Monthly* (1993), 290(1), 22.
- Reed, B. (2018). The Ongoing Story of Hiroshima and Nagasaki. *American Scientist*, 106(2), 88-94. doi:10.1511/2018.106.2.88

- Reed-Danahay, D. (2011). Autobiography, intimacy and ethnography. In Atkinson, P., Coffey, A., Delamont, S., Lofland, J., & Lofland, L. (Eds.). *Handbook of Ethnography* (pp. 407-425). SAGE Publications Ltd.
- Rees, D. (2003). Resisting the British bomb: The early years. In D. Holdstock and F. Barnaby, (Eds.), *The British Nuclear Weapons Programme, 1952-2002* (pp. 55-62). Frank Cass and Company Limited.
- Rimmer, A. (2002, October 6). My deformed baby had to be aborted... 45 years after my grandad was at A-blast in the Pacific. *Sunday Mirror*. New Zealand: Prickley Heat. RIMPAC chronicle.
- Rigney, A. (2018). Remembering hope: Transnational activism beyond the traumatic. *Memory Studies*, 11(3), 368-380. doi:10.1177/1750698018771869
- Roff, S.R. (2003). Long-term health effects in UK test veterans. In D. Holdstock and F. Barnaby, (Eds.), *The British Nuclear Weapons Programme, 1952-2002* (pp. 99-112). Frank Cass and Company Limited.
- Rotter, A. J. (2008). *Hiroshima: The world's bomb*. Oxford University Press.
- Rowland, A., Podd, J., & Wahab, M.W. (2005). *New Zealand nuclear test veterans' study- a pilot project (Sister Chromatid Exchange)*. <https://www.veteransaffairs.mil.nz/assets/Veterans-Affairs-site-assets/Research/22.pdf>
- Saito, H. (2006). Reiterated commemoration: Hiroshima as national trauma. *Sociological Theory*, 24(4), 353-376. doi:10.1111/j.1467-9558.2006.00295.x
- Sarantakes, N. E. (2016). Warriors of word and sword: The battle of Okinawa, media coverage, and Truman's re-evaluation of strategy in the pacific. *The Journal of American-East Asian Relations*, 23(4), 334-367. doi:10.1163/18765610-02303001

- Sime, R. L. (2014). Science and politics: The discovery of nuclear fission 75 years ago. *Annalen Der Physik*, 526(3-4), A27-A31. doi:10.1002/andp.201400805
- Stolzoff, N. (2000). *Wake the town and tell the people. Dancehall culture in Jamaica*. Duke University Press.
- Takada, J., Hoshi, M., Sawada, S. and Sakanoue, M. (1983). Uranium isotopes in Hiroshima “Black Rain” soil. *Journal of Radiation Research*, 24(3), 229-236. doi:10.1269/jrr.24.229
- Takaki, R. (1996). *Hiroshima: Why America dropped the atomic bomb*. Black Bay Books.
- Temple, B. (2002). Crossed wires: Interpreters, translators, and bilingual workers in cross-language research. *Qualitative Health Research*, 12, 844-854.
- Temple, B., & Young, A. (2004). Qualitative research and translation dilemmas. *Qualitative Research*, 4(2), 161-178.
- The Chugoku Shimbun. (2012, August 12). *Evacuation of children from the city*. http://www.hiroshimapeacemedia.jp/?insight=20120828153044292_en
- The Chugoku Shimbun. (2015, August 20). Hiroshima: 70 years after the A-bombing part 19. *The Chugoku Shimbun*. <http://www.hiroshimapeacemedia.jp/?bombing=2017-150>
- The City of Hiroshima. (2020). *Application for Atomic Bomb Survivor’s Handbook from outside of Japan*. <https://www.city.hiroshima.lg.jp/site/english/3342.html>
- Thompson, P. (2015). The voice of the past. Oral History. In Perks, R., and Alistair T. (Eds.), *The Oral History Reader* (3rd ed). Routledge/ Taylor & Francis Group.
- Tillman, B. (2016). When fire rained from the sky: The first low-level B-29 raid on Tokyo introduced a terrifying new tactic in the war against japan. *Aviation History*, 27(1), 28-35

- Todeschini, M. (1999). Illegitimate sufferers: A-bomb victims, medical science, and the government. *Daedalus*, 128(2), 67-100.
- Tomonaga, M. (2015). After the atomic bomb: Hibakusha tell their stories. *International Review of the Red Cross*, 97(899), 507-525. doi:10.1017/S1816383116000242
- Tomonaga, M. (2019). The atomic bombings of Hiroshima and Nagasaki: A summary of the human consequences, 1945-2018, and lessons for homo sapiens to end the nuclear weapon age. *Journal for Peace and Nuclear Disarmament*, 2(2), 1-27. doi:10.1080/25751654.2019.1681226
- Tubनावau-Salabula, L. Namoce, J.M. & N. Maclellan. (1999). *Kirisimas. Fijian Troops at Britain's Christmas Island Nuclear Tests*. Pacific Concerns Resource Centre.
- United Nations Office for Disarmament Affairs. (n.d.). *Treaty of the Prohibition of Nuclear Weapons*. <https://www.un.org/disarmament/wmd/nuclear/tpnw/>
- United Nations Office for Disarmament Affairs. (2020). *Treaty of the Prohibition of Nuclear Weapons*. <http://disarmament.un.org/treaties/t/tpnw>
- Wainstock, D. (2010). *The Decision to Drop the Atomic Bomb: Hiroshima and Nagasaki: August 1945*. Enigma Books.
- Wastell, C. (2005). *Understanding trauma and emotion: Dealing with trauma using an emotion-focused approach*. Open University Press.
- Weeramantry, C.G. (1987). *Nuclear weapons and scientific responsibility*. Longwood Academic.
- Wellerstein, A. (2020, August 4). Counting the dead at Hiroshima and Nagasaki. *The Bulletin of the Atomic Sciences*. <https://thebulletin.org/2020/08/counting-the-dead-at-hiroshima-and-nagasaki/>

- White, G. M. (1999). Emotional remembering: The pragmatics of national memory. *Ethos*, 27(4), 505-529. doi:10.1525/eth.1999.27.4.50
- Wittner, L. (2010). Where is the nuclear abolition movement today? In K. Vignard (Ed.), *Disarmament Forum Four. 2010. Civil Society and Nuclear Disarmament*. Switzerland, United Nations Institute for Disarmament Research.
- World Nuclear Association. (2016). *Hiroshima, Nagasaki, and subsequent weapons testing*. <https://www.world-nuclear.org/information-library/safety-and-security/non-proliferation/hiroshima,-nagasaki,-and-subsequent-weapons-testin.aspx>
- Yamaguchi, M. (2020, August 12). Japan appeals court order to recognise ‘black rain’ victims. *AP News*. <https://apnews.com/74f74ce6cc410c2afa62ea7d84010706>
- Yeung, J., & Wakatsuki, Y. (2020, July 30). Japan recognizes dozens more ‘black rain’ victims as Hiroshima atomic bomb survivors. *CNN*. <https://edition.cnn.com/2020/07/30/asia/hiroshima-black-rain-verdict-intl-hnk/index.html>
- Yokota, R. M. (2013, August 7). ‘No more hibakusha’ takes on new meaning after 3/11. *Japan Times*. <https://www.japantimes.co.jp/opinion/2013/08/07/commentary/world-commentary/no-more-hibakusha-takes-on-new-meaning-after-311/>