
The Atomic Bomb

At 8:15 a.m August 6, 1945 the atomic bomb was dropped above Hiroshima, killing estimate of 140,000 men, women, and children. Another 10,000 more died from radiation poisoning and survivors suffered from severe burns from the heat. Three days later another bomb was dropped on Nagasaki, killing some 40,000 instantly and several thousand more from radiation. Even with all these consequences a major question is still debated today. Was it moral to drop the atomic bombs on Japan to save American soldier lives? No, the problems created from the bomb far outweigh the gains because of the number of lives lost, it made the surrounding land uninhabitable, and caused birth defects in future generations.

One of the more immediate effects of the atomic bomb was its ability to kill thousands in seconds and more over time. The blast, heat, and radiation from the Hiroshima bomb killed anything within a 20 mile radius. Killing 140,000 people on impact and an additional 10,000 more over weeks from radiation poisoning. Though the Nagasaki bomb killed nearly half as much the destruction left from the bomb can not be denied. When the bomb went off a super-high air pressure of several thousand atmospheres was created. This created a powerful shock wave and the wind blew at around 1000 miles per hour. Thousands were killed by being thrown through the air or crushed by structures. The blast shattered windows sending glass flying through the air, penetrating deep into the victims' bodies. Radiation also played a role in the death toll of the atomic bombs; anyone within 1 kilometer of the explosion died from initial radiation. Within 20-30 minutes of the explosion a thick black rain started falling in the northwest. The rain contained radioactive soot and dust. This contaminated areas far away from the center of explosion. Killing more far from the explosion. After the blast the heat set fire to the mostly wooden buildings in the cities trapping and killing thousands of civilians. (Cody, Eric. Wirtz, James J. Weapons of Mass Destruction. Santa Barbara ABC-CLIO. 2005)

Radiation from the bombs sunk into the soil and water of the earth killing anything that wanders into the land and stopping the growth of plants. It is said nothing can live in these areas for 50 years and still the radiation may not completely disappear. Even though the bomb never really touched the ground it still burned every plant and animal within range. Extreme heat of thermal radiation burns everything in its path, including animals, trees, buildings and people. The effects not only affected land animals but aquatic life too. Scientists found high levels of radioactive

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contamination in animals, fish, and plants in the surrounding forest and they expect it to remain for decades.

The people that survived the blast and radiation received burns, poisoning, and their children were born with birth defects. Kids were born with several kinds of cancer and many other diseases from their parents exposure. These diseases passed on through several generations as time went on. Some people still live with the effects of the atomic weapons used in world war two. Only a hand full of people survived and fought their way to safety. The book Hiroshima by John Hersey talks about six Japanese people that survived their way through the bombing of Hiroshima. Many people like James Burns, an atomic bomb scientist, did not want to use the bomb because it could cause negative effects and sadly, it did. The worst effects of radiation was the ones who lived through it. About 200,000 people died from the radiation throughout the following years. Some radiation effects are still being seen in the survivors almost 60 years after the bombing. The after effects can also be seen in the succeeding generation from the survivors and children were born with abnormalities. A few prominent effects observed are deafness, deformed bone structure, and prenatal blindness.

“All over the right side of my body I was cut and bleeding. A large splinter was protruding from a mangled wound in my thigh, and something warm trickled into my mouth. My cheek was torn, I discovered as I felt it gingerly, with the lower lip spread wide open. Embedded in my neck was a sizable fragment of glass which I matter-of-factly dislodged, and with the detachment of one stunned and shocked I studied it and my blood-stained hand” (The Bombing Of). Dr. Michihiko Hachiya, eye witness citizen-survivor of Hiroshima. During the early 1940's-1950's it was not unusual for mass amounts of deaths to occur from nuclear weapons. Due to the dropping of the atom bomb on Hiroshima and Nagasaki in 1945, many were living in fear of nuclear attacks. Nuclear war not only affected the social and mental aspects of life, but also the health and safety of Americans, the United States economy and government, and the country's geography. Nuclear warfare played a major role in the changes the U.S faced during the 1940's-1950's.

Nuclear weapons, created in the 1930's, possessed enormous destructive power derived from nuclear fission and fusion reactions. In August of 1945, the United States dropped two fission bombs on the Japanese cities of Hiroshima and Nagasaki. Around 90,000-166,000 people in Hiroshima and 60,000-80,000 people in Nagasaki were killed due to the acute effects of the bombings. "Suddenly I felt as if I were thrown into an iron melting pot. There was a tremendous illumination all around and everything was glowing. When I stood up, the skin of the left side of

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my face which had been facing the flash was hanging down” (Our First Nuclear). This 14 year old came close to death because of this nuclear tragedy. After World War I, the United States and Soviet Union were competing against each other for nuclear power. The Soviet Union had nuclear weapon capabilities in the beginning of the cold War, and the U.S. had an advantage in terms of bombers and weapons. American citizens were in fear of possible nuclear war threats by the Soviet Union. Many precautions were taken by the U.S. to protect citizens. For example, radio broadcasts and local advertisements were conducted to alert people and inform them on what to do if a nuclear attack occurs. In the late 1970’s and early 1980’s, the United States renewed its commitment to a more powerful military. This required a large increase on U.S. military programs. These programs were originally apart of the defense budget. The economy suffered greatly due to the making of these programs created to limit nuclear war use.

Over the previous years during the nuclear age, the way Americans lived and thought changed dramatically. Due to the possible nuclear war threats arising in the U.S many people were now living in fear of their lives. For example, in the book, “War and Human Nature”, the author states, “Americans generally, and evangelicals particularly, are confused and troubled by the debate over nuclear armament and the threat of nuclear war” (War and Human Nature). Many questions were left unanswered for these people. Without any explanation or reasoning behind these nuclear war threats, Americans were left in a state of confusion and horror. Many advertisements and radio broadcastings were sent out across the country to spread the message about the precautions that should be taken during nuclear war. For example, in 1950 the “Bert’s Duck and Cover” (Bert’s duck and cover) photograph was a popular tool in getting the message across to a younger audience. This advertisement also included an instructional video explaining the safety tips to survive as nuclear explosion. Not only did nuclear war threats cause confusion and chaos, it also affected people psychologically. Mostly targeting the younger generation, nuclear war threats affected the thoughts and feelings of teenagers. For example, in 2013, Stanford University stated, “the nuclear threat greatly affected the thoughts, life plan and feelings of the younger generation, enhancing the anxiety among large populations” (Negative Psychological Effects). Mostly teenagers growing up in the 1950’s were affected mentally by these war threats. Many developed severe anxiety and depression. Also, many teenagers created a lack of concern to the threats. For example, a family physician in 1986 stated, “anxiety was found to be a factor in criminal behavior, and threat of nuclear war to be a factor in anxiety. Psychiatric morbidity has been correlated with work deprivation and threat of annihilation. Many studies have focused on children, finding that anxiety about social issues is high, but that cynicism and apathy set in rapidly” (Psychological Effects of). Nuclear war threat changed the way Americans lived their everyday lives. It also threw the younger generation into a state of depression. Even though these effects would be considered short term, the fear of dying from a nuclear explosion will always be long term.

If a nuclear war explosion were to occur in the U.S during the 1940’s-1950’s the country’s

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population would be in ruins. The damages resulting from nuclear weapons have a major impact on the health of Americans living in that impacted area. If a human being is caught in the direct pathway of the explosion, they would immediately die due to the extreme blast of heat and radiation. However, those individuals that were sheltered from the blast could still be at risk for harmful effects from exposure to radiation. For example, a current article states, "Radiation causes damage to DNA and may lead to the development of abnormal cells which then form a cancer. At higher levels of exposure to radiation, cell death results. Cells may not be replaced quickly enough and tissues fail to function. Exposure to radiation of the fetus can increase the risk of cancer and of inadequate brain development" (Weapons and their). Nuclear explosions have the potential to cause harmful, long term effects resulting in the absence of required brain functions. Also, those sheltered from the initial blast may not be harmed by radiation, but from another leading factor. For example, in 1947, a doctor stated, "People inside buildings or otherwise shielded will be indirectly killed by the blast and heat effects as buildings collapse and all inflammable materials burst into flames. The immediate death rate will be over 90%. Various individual fires will combine to produce a firestorm as all the oxygen is consumed. As the heat rises, air is drawn in from the periphery at or near ground level. This results in lethal, hurricane force winds as well as perpetuating the fire as the fresh oxygen is burnt" (The Effects of). Those individuals that followed the precautions earlier explained in this paper could still be at risk of being crushed by falling debris, burning to death, and suffering from smoke inhalation. Another health risk of nuclear war is starvation and dehydration. Many people take shelter in underground rooms. However, the mistake some make is not having enough supplies to last for the time being down there. For example, a picture taken in 1957 of a "basement family fallout shelter" shows a fourteen day food and water supply in case of a nuclear explosion. This picture also includes a broadcasting radio for communication. During the 1950's, many Americans were cautious and aware of what to do if a nuclear explosion were to occur. However, no matter how prepared they were, there was always a high risk of death if the explosion were to occur. Along with deaths from the initial blasts, many people would also die from things like lack of oxygen, radiation exposure, and many more horrific sufferings. These people living in the U.S. at this time could only wait for the moment of the first explosion and hope that they had prepared well enough. No one was ever guaranteed their safety. No one was ever guaranteed their life.

On top of the many effects nuclear war would have on individuals, it also would affect the United States as a whole. Its economy for the most part would be in ruins if the U.S faced a nuclear war attack. Systems and programs would fail, businesses would crash, international trade would vanish, and the job percentage would decrease dramatically. Due to all the deaths of the nuclear blast, hospitals and insurance companies would be in despair. For example, "Life would be severely disrupted. The medical care system would be overburdened providing intensive treatment to fallout victims, resulting in degraded regular, acute, chronic or preventive care. Support systems such as insurance and medical records would likely be in chaos, or at best in

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serious disarray, with some drugs in short supply. Food production and distribution systems, as well as the banking system, would be severely disrupted" (The Social and Economic). If the U.S. were to encounter a nuclear attack, one the main problems would be international systems. The U.S depends on other countries for trading and aiding in grain and food exports. A nuclear attack would completely destroy this system and "millions of people in countries which depend on food imports or specialized exports will suffer a great deal" (Consequences of Nuclear). Also, the economy would face a major issue in jobs and businesses. The impact of the explosion would cause destruction throughout the targeted area. This means that many industries such as oil refineries, power plants, factories, food production facilities, and other industrial and commercial facilities would be out of business. Those thousands of people that worked at those places would be out of work, causing a recession in the economy. Not only would the job percentage rate decrease because of destroyed areas, but also because of the amount of deaths and illnesses that would occur from the nuclear blast. Another extreme issue that could arise from nuclear war is death. Considering the possibility that a nuclear attack could in fact wipe out most of the country's population, doctors and physicians were depended on. An article from 1981 states "society cannot survive nuclear war and that no strategic policy should be based on the idea that physicians will somehow save enough people to continue civilized life" (International Group of). If a nuclear war were to break out in the U.S, you can conclude that systems and programs would fail, businesses would crash, international trade would vanish, the job percentage would decrease dramatically, and much more would continue to happen.

The threats of nuclear war affected many governmental figures during the 1940's-1950's. Many disagreed on whether nuclear testing would have a positive effect on the United States, and whether or not using nuclear weapons during nuclear war was a good thing for America and its people. Many political figures surprisingly agreed with each other that the technological enhancements on nuclear weapons had a positive impact on the United States. John F. Kennedy was one of the many political figures that believed that demonstrating nuclear tests underground was a good thing. In John F. Kennedy's letter to the senate in 1963 he explains in detail why he believes nuclear weapons are a positive thing. He states:

This Treaty does not halt American nuclear progress. The United States has more experience in underground testing than any other nation; and we intend to use this capacity to maintain the adequacy of our arsenal. Our atomic laboratories will maintain an active development program, including underground testing, and we will be ready to resume testing in the atmosphere if necessary. Continued research on developing the peaceful uses of atomic energy will be possible through underground testing. (John F. Kennedy)

John F. Kennedy believed that by obtaining more knowledge about nuclear weaponry, the U.S would be ready to use their weapons if necessary. Another important political figure involved in

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nuclear war was Harry S. Truman. Truman agreed with Kennedy on the issue of nuclear war. Unlike Kennedy however, Truman saw the negatives associated with war, but he also saw the many positives. He wrote a letter to congress addressing the benefits associated with nuclear war. He wrote:

Almost two months have passed since the atomic bomb was used against Japan. That bomb did not win the war, but it certainly shortened the war. We know that it saved the lives of untold thousands of American and Allied soldiers who would otherwise have been killed in battle. The discovery of the means of releasing atomic energy began a new era in the history of civilization. The scientific and industrial knowledge on which this discovery rests does not relate merely to another weapon. It may someday prove to be more revolutionary in the development of human society than the invention of the wheel, the use of metals, or the steam or internal combustion engine. (Harry S. Truman)

The constant threats of nuclear war occurring in America changed the views of many political figures. While many opinions on the subject were negative, leaders such as John F. Kennedy and Harry S. Truman thought otherwise. Not only did it change the views of many in the government, but it also altered decision making by that former president.

If America were to endure a nuclear attack, not only would the lives of most Americans change, but the geography of the land that they once lived on would be unrecognizable. When a nuclear explosion occurs, the buildings, houses, landscape, and nature are completely destroyed. The main cause of the damage is due to the initial blast of the explosion. Heat and fire spread all throughout the area surrounding the initial blast causing most buildings to completely explode. In 1975 the "Direct Civil Defense recorded a video of a nuclear explosion test in Nevada" (Nuclear Test video Frame House). This video shows step by step the effects of a nuclear explosion on the typical house back in 1975. The house first catches fire and then seconds later explodes into thousands of pieces. Viewers of this video can confirm that anyone and anything in the house would be burned to ashes immediately. Many problems would arise from a catastrophe like such. Starting with the initial blast, radiation is the most dangerous effect of a nuclear explosion. The number one thing that would be affected the most would be wildlife. Radiation exposure weakens and breaks up DNA, either damaging cells enough to kill them or causing them to mutate in ways that may eventually lead to cancer. Since these cells are so damaged they cannot reproduce, which could lead to a slow death. The Federation of American Scientists wrote an article about the effects that radiation has on animals. They stated:

Radiation effects are considerably more complex and varied than are blast or thermal effects. A wide range of biological changes may follow the irradiation of an animal, ranging from rapid death following high doses of penetrating whole-body radiation to an essentially normal life for a variable period of time until the development of delayed radiation effects, in a portion of the

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exposed population, following low dose exposures. (The Federation of American Scientists)

This explains that animals that are exposed to radiation due to the blast would initially feel fine and act normal, and then slowly start to suffer and eventually die. Another effect of a nuclear explosion would be plants and crops. These crops that all of America relies on to live would be contaminated and worthless. Depending on how big the blast is, thousands of acres of land which grew crops would either be completely wiped out, or poisoned. Adi Narayan, Simeon Bennett and Phoebe Sedgman discuss the consequences of nuclear radiation on plants. They stated:

Soil may be contaminated within a 10-mile radius, posing a danger for human occupation for at least three decades. Food production from an area 10 miles to 20 miles away may be unsafe. Radiation levels may be not be affected from a distance of 40 miles to 50 miles. (Radiation's Effect on Food, Agriculture: Questions and Answers)

Considering how big the blast would be and depending on how close the blast would be to these plants, there is a very high chance that most of the crops produced in America would be contaminated. Therefore, markets, families, and the economy would be affected greatly. Also, a great number of produce comes from animals. It is true that if those animals eat contaminated plants, they too will be contaminated. For example, Adi Narayan, Simeon Bennett and Phoebe Sedgman said "The iodine may be carried in the air and get deposited on grass and plants. When cows eat these plants, the milk they produce is also contaminated and may be unfit for consumption" (Radiation's Effect on Food, Agriculture: Questions and Answers). If this contaminated milk is sold to people and they consume it, they will be at a very high risk of radiation poison also. It is seen that the radiation that comes from nuclear explosions travels down a long path. It could go from plants to animals to humans in the matter of a few days. If this radiation is undetected, then many will suffer and die from this effect. Nuclear explosions would dramatically change the environment and geography. Plants would be contaminated, houses and buildings would be destroyed, and wildlife would die. America's once beautiful geography would now be unrecognizable.

The creation of nuclear weapons and the dropping of the atom bomb on Hiroshima was the start of a different America. Nuclear warfare played a major role in the changes the U.S faced during the 1940's-1950's. It affected many aspects of life, some unchangeable, but all devastating. Nuclear war not only affected the social and mental aspects of a person's life, but also the health and safety of Americans, the United States economy and government, and the country's geography. People's lives changed in every way possible, mostly all negative. Americans had to quickly but slowly learn to adapt to the new changes surrounding them. While living in constant fear of a nuclear attack, Americans struggled every day to understand and prepare for the effects that would be soon to come.

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