

in one way or another, and I think one cannot be too careful to be honest. And it is very difficult, not because one tells lies, but because so often questions are put in a form which makes it very hard to give an answer which is not misleading. I think we will be in a very weak position unless we maintain at its highest the scrupulousness which is traditional for us in sticking to the truth, and in distinguishing between what we know to be true from what we hope may be true.

The second thing I think it right to speak of is this: it is everywhere felt that the fraternity between us and scientists in other countries may be one of the most helpful things for the future; yet it is apparent that even in this country not all of us who are scientists are in agreement. There is no harm in that; such disagreement is healthy. But we must not lose the sense of fraternity because of it; we must not lose our fundamental confidence in our fellow scientists.

I think that we have no hope at all if we yield in our belief in the value of science, in the good that it can be to the world to know about reality, about nature, to attain a gradually greater and greater control of nature, to learn, to teach, to understand. I think that if we lose our faith in this we stop being scientists, we sell out our heritage, we lose what we have most of value for this time of crisis.

But there is another thing: we are not only scientists; we are men, too. We cannot forget our dependence on our fellow men. I mean not only our material dependence, without which no science would be possible, and without which we could not work; I mean also our deep moral dependence, in that the value of science must lie in the world of men, that all our roots lie there. These are the strongest bonds in the world, stronger than those even that bind us to one another, these are the deepest bonds—that bind us to our fellow men.

## 28

*To Use an Atomic Bomb***Paul Tibbets and George Weller**

*The decision to drop the atomic bombs on the cities of Hiroshima and Nagasaki on August 6 and 9, 1945, was not an easy one. Nazi Germany surrendered on May 8, 1945, and had been carved up into occupation zones by the increasingly rivalrous British, French, U.S., and Soviet armies. Alone, Japan was hopelessly overmatched and facing inevitable defeat. The June capture of Okinawa, considered by most Japanese to be part of their nation, provided the United States and its allies with an important strategic base close to the main Japanese island. All that remained was to decide the terms under which Japan would cease fighting.*

*The leaders of the United States had determined that they needed nothing short of unconditional surrender, but many Japanese generals found such terms unacceptable. While the leaders of Japan searched for a formula that would allow them to cease fighting, the Allies prepared for an invasion of the main Japanese island. Adding to the complexity was the fact that Roosevelt and Stalin had agreed at the February Yalta Conference that the Soviet Union would declare war in the Pacific and invade Japan within three months of Germany's capitulation. Casualties on both sides were expected to be enormous, since it was assumed that the Japanese would fight to the death.*

*These were the challenges faced by President Harry Truman and his advisers in deciding whether to use the new and incredibly powerful secret weapon that J. Robert Oppenheimer discusses in Document 28. On August 6, 1945, the United States dropped an atomic bomb on the Japanese city of Hiroshima. Three days later, the United States dropped another bomb, this one on the city of Nagasaki. That was enough. Emperor Hirohito broadcast to the Japanese people his acceptance of surrender. Under some minor terms, which included allowing the Japanese to keep their emperor as a purely symbolic figure, Japan came under American occupation.*

*Hiroshima and Nagasaki brought just what the U.S. government wanted. Its troops were spared the enormous bloodshed sure to accompany an invasion. But the question of the morality of the bombings has haunted the world ever since. Did the United States and its allies have to demand total surrender, when a few concessions, such as allowing Japanese war crimes to be tried in Japanese courts, might have avoided both invasion and the horror of the two atomic bombs? Were there fewer civilian casualties from the two bombs than the millions who might have died had the U.S. military invaded Japan, as defenders of Truman's decision have argued? Was the desire to avoid the type of power sharing between the United States and the Soviet Union that had occurred in Europe after the Nazi surrender part of Truman's calculation? Finally, what is the future of a world where such devices may be built and used by one nation, forcing others to develop similar technologies?*

*In the first excerpt, a pilot of the Enola Gay, Paul Tibbets, talks with journalist Studs Terkel in 2002 about dropping the bomb over Hiroshima. In the second excerpt, Pulitzer Prize-winning journalist George Weller, the first American reporter to enter Nagasaki after the dropping of the second atomic bomb, describes the devastation. The head of the U.S. occupation forces in Japan, General MacArthur, suppressed the series of stories about what Weller had witnessed, and they were released to the public for the first time in June 2005, just three years after Weller's death at the age of ninety-five.*

#### QUESTIONS TO CONSIDER

1. How would you characterize Paul Tibbets's feelings about his role in dropping the atomic bomb? Explain any reservations that he might have had about his role along with his justifications for his actions.
2. What do you learn from George Weller of the deaths and illnesses that came as a result of the bombing of Nagasaki?
3. Why do you think MacArthur decided to censor Weller's stories? In your view, might Weller's point of view have played a part in the decision to keep his writings from the public?

## PAUL TIBBETS

*An Interview with the Pilot of the Enola Gay*

*Studs Terkel:* You got the go-ahead on August 5.

*Paul Tibbets:* Yeah. We were in Tinian<sup>1</sup> at the time we got the OK. They had sent this Norwegian to the weather station out on Guam<sup>2</sup> and I had a copy of his report. We said that, based on his forecast, the sixth day of August would be the best day that we could get over Honshu.<sup>3</sup> So we did everything that had to be done to get the crews ready to go: airplane loaded, crews briefed, all of the things checked that you have to check before you can fly over enemy territory.

General Groves had a brigadier-general who was connected back to Washington, D.C., by a special teletype machine. He stayed close to that thing all the time, notifying people back there, all by code, that we were preparing these airplanes to go any time after midnight on the sixth. And that's the way it worked out. We were ready to go at about four o'clock in the afternoon on the fifth and we got word from the president that we were free to go: "Use 'em as you wish." They give you a time you're supposed to drop your bomb on target and that was 9:15 in the morning, but that was Tinian time, one hour later than Japanese time. I told Dutch, "You figure it out what time we have to start after midnight to be over the target at 9 A.M."

*Studs Terkel:* That'd be Sunday morning.

*Paul Tibbets:* Well, we got going down the runway at right about 2:15 A.M. and we took off, we met our rendezvous guys, we made our flight up to what we call the initial point, that would be a geographic position that you could not mistake. Well, of course we had the best one in the world with the rivers and bridges and that big shrine. There was no mistaking what it was.

*Studs Terkel:* So you had to have the right navigator to get it on the button.

*Paul Tibbets:* The airplane has a bombsight connected to the autopilot and the bombardier puts figures in there for where he wants to be when he drops the weapon, and that's transmitted to the airplane. We always took into account what would happen if we had a failure and the bomb bay doors didn't open: we had a manual release put in each airplane so it was right down by the bombardier and he could pull on that. And the guys in the airplanes that followed us to drop the instruments needed to know when it was going to go. We were told not to use the radio, but, hell, I had to. I told them I would say, "One minute out," "Thirty seconds out," "Twenty seconds" and "Ten" and then I'd count, "Nine, eight, seven, six, five, four seconds," which would give them a time to drop their cargo. They knew what was going on because they knew where we were. And that's exactly the way it worked, it was absolutely perfect.

After we got the airplanes in formation I crawled into the tunnel and went back to tell the men. I said, "You know what we're doing today?" They said,

1. **Tinian:** The U.S. island base in the Pacific.

2. **Guam:** The United States' westernmost territory.

3. **Honshu:** The island on which Hiroshima stands.

"Well, yeah, we're going on a bombing mission." I said, "Yeah, we're going on a bombing mission, but it's a little bit special." My tailgunner, Bob Caron, was pretty alert. He said, "Colonel, we wouldn't be playing with atoms today, would we?" I said, "Bob, you've got it just exactly right." So I went back up in the front end and I told the navigator, bombardier, flight engineer, in turn. I said, "OK, this is an atom bomb we're dropping." They listened intently but I didn't see any change in their faces or anything else. Those guys were no idiots. We'd been fiddling round with the most peculiar-shaped things we'd ever seen.

So we're coming down. We get to that point where I say "one second" and by the time I'd got that second out of my mouth the airplane had lurched, because 10,000 lbs had come out of the front. I'm in this turn now, tight as I can get it, that helps me hold my altitude and helps me hold my airspeed and everything else all the way round. When I level out, the nose is a little bit high and as I look up there the whole sky is lit up in the prettiest blues and pinks I've ever seen in my life. It was just great.

I tell people I tasted it. "Well," they say, "what do you mean?" When I was a child, if you had a cavity in your tooth the dentist put some mixture of some cotton or whatever it was and lead into your teeth and pounded them in with a hammer. I learned that if I had a spoon of ice-cream and touched one of those teeth I got this electrolysis and I got the taste of lead out of it. And I knew right away what it was.

OK, we're all going. We had been briefed to stay off the radios: "Don't say a damn word, what we do is we make this turn, we're going to get out of here as fast as we can." I want to get out over the sea of Japan because I know they can't find me over there. With that done we're home free. Then Tom Ferebee has to fill out his bombardier's report and Dutch, the navigator, has to fill out a log. Tom is working on his log and says, "Dutch, what time were we over the target?" And Dutch says, "Nine-fifteen plus 15 seconds." Ferebee says: "What lousy navigating. Fifteen seconds off!"

*Studs Terkel:* Did you hear an explosion?

*Paul Tibbets:* Oh yeah. The shockwave was coming up at us after we turned. And the tailgunner said, "Here it comes." About the time he said that, we got this kick in the ass. I had accelerometers installed in all airplanes to record the magnitude of the bomb. It hit us with two and a half G.<sup>4</sup> Next day, when we got figures from the scientists on what they had learned from all the things, they said, "When that bomb exploded, your airplane was 10 and half miles away from it."

*Studs Terkel:* Did you see that mushroom cloud?

*Paul Tibbets:* You see all kinds of mushroom clouds, but they were made with different types of bombs. The Hiroshima bomb did not make a mushroom. It was what I call a stringer. It just came up. It was black as hell, and it had light and colours and white in it and grey colour in it and the top was like a folded-up Christmas tree.

4. **G:** G-force; 1 G is equal to the force of Earth's gravity.

*Studs Terkel:* Do you have any idea what happened down below?

*Paul Tibbets:* Pandemonium! I think it's best stated by one of the historians, who said: "In one micro-second, the city of Hiroshima didn't exist."

*Studs Terkel:* You came back, and you visited President Truman.

*Paul Tibbets:* We're talking 1948 now. I'm back in the Pentagon and I get notice from the chief of staff, Carl Spaatz, the first chief of staff of the air force. When we got to General Spaatz's office, General Doolittle was there, and a colonel named Dave Shillen. Spaatz said, "Gentlemen, I just got word from the president he wants us to go over to his office immediately." On the way over, Doolittle and Spaatz were doing some talking; I wasn't saying very much. When we got out of the car we were escorted right quick to the Oval Office. There was a black man there who always took care of Truman's needs and he said, "General Spaatz, will you please be facing the desk?" And now, facing the desk, Spaatz is on the right, Doolittle and Shillen. Of course, militarily speaking, that's the correct order: because Spaatz is senior, Doolittle has to sit to his left.

Then I was taken by this man and put in the chair that was right beside the president's desk, beside his left hand. Anyway, we got a cup of coffee and we got most of it consumed when Truman walked in and everybody stood on their feet. He said, "Sit down, please," and he had a big smile on his face and he said, "General Spaatz, I want to congratulate you on being first chief of the air force," because it was no longer the air corps. Spaatz said, "Thank you, sir, it's a great honour and I appreciate it." And he said to Doolittle: "That was a magnificent thing you pulled flying off of that carrier," and Doolittle said, "All in a day's work, Mr. President." And he looked at Dave Shillen and said, "Colonel Shillen, I want to congratulate you on having the foresight to recognize the potential in aerial refueling. We're gonna need it bad some day." And he said thank you very much.

Then he looked at me for 10 seconds and he didn't say anything. And when he finally did, he said, "What do you think?" I said, "Mr. President, I think I did what I was told." He slapped his hand on the table and said: "You're damn right you did, and I'm the guy who sent you. If anybody gives you a hard time about it, refer them to me."

*Studs Terkel:* Anybody ever give you a hard time?

*Paul Tibbets:* Nobody gave me a hard time.

*Studs Terkel:* Do you ever have any second thoughts about the bomb?

*Paul Tibbets:* Second thoughts? No. Studs, look. Number one, I got into the air corps to defend the United States to the best of my ability. That's what I believe in and that's what I work for. Number two, I'd had so much experience with airplanes . . . I'd had jobs where there was no particular direction about how you do it and then of course I put this thing together with my own thoughts on how it should be because when I got the directive I was to be self-supporting at all times.

On the way to the target I was thinking: I can't think of any mistakes I've made. Maybe I did make a mistake: maybe I was too damned assured. At 29 years of age I was so shot in the ass with confidence I didn't think there was anything I couldn't do. Of course, that applied to airplanes and people. So, no, I had no problem with it. I knew we did the right thing because when I knew

we'd be doing that I thought, yes, we're going to kill a lot of people, but by God we're going to save a lot of lives. We won't have to invade [Japan].

### GEORGE WELLER

#### *The First American Report on the Bombing of Nagasaki*

NAGASAKI, Sept. 8—The following conclusions were made by the writer—as the first visitor to inspect the ruins—after an exhaustive, though still incomplete study of this wasteland of war.

Nagasaki is an island roughly resembling Manhattan in size and shape, running north and south in direction with ocean inlets on both sides. What would be the New Jersey and Manhattan sides of the Hudson river are lined with huge war plants owned by the Mitsubishi and Kawasaki families. . . .

It is about two miles from the scene of the bomb's 1,500 feet high explosion where the harbor has narrowed to the 250 feet wide Urakame River that the atomic bomb's force begins to be discernible.

The area is north of downtown Nagasaki, whose buildings suffered some freakish destruction, but are generally still sound.

The railroad station, destroyed except for the platforms is already operating. Normally it is sort of a gate to the destroyed part of the Urakame valley. . . . For two miles stretches a line of congested steel and some concrete factories with the residential district "across the tracks." The atomic bomb landed between and totally destroyed both with half [illegible] living persons in them. The known dead number 20,000[;] police tell me they estimate about 4,000 remain to be found.<sup>5</sup>

The reason the deaths were so high—the wounded being about twice as many according to Japanese official figures—was twofold:

1. Mitsubishi air raid shelters were totally inadequate and the civilian shelters remote and limited.
2. That the Japanese air warning system was a total failure.

I inspected half a dozen crude short tunnels in the rock wall valley which the Mitsubishi Co., considered shelters. I also picked my way through the tangled iron girders and curling roofs of the main factories to see concrete shelters four inches thick but totally inadequate in number. Only a grey concrete building topped by a siren, where the clerical staff had worked had reasonable cellar shelters, but nothing resembling the previous had been made.

A general alert had been sounded at seven in the morning, four hours before two B-29's appeared, but it was ignored by the workmen and most of the population. The police insist that the air raid warning was sounded two minutes before the bomb fell, but most people say they heard none. . . .

5. The actual number of deaths was approximately 75,000, with many thousands more to die in the years to follow due to radiation poisoning.

All around the Mitsubishi plant are ruins which one would gladly have spared. The writer spent nearly an hour in 15 deserted buildings in the Nagasaki Medical Institute hospital. . . . Nothing but rats live in the debris choked halls. On the opposite side of the valley and the Urakame river is a three story concrete American mission college called Chin Jei, nearly totally destroyed.

Japanese authorities point out that the home area flattened by American bombs was traditionally the place of Catholic and Christian Japanese.

But sparing these and sparing the allied prison camp, which the Japanese placed next to an armor plate factory would have meant sparing Mitsubishi's ship parts plant with 1,016 employees who were mostly Allied. It would have spared a Mounting factory connecting with 1,750 employees. It would have spared three steel foundries on both sides of the Urakame, using ordinarily 3,400 workers but that day 2,500. And besides sparing many sub-contracting plants now flattened it would have meant leaving untouched the Mitsubishi torpedo and ammunition plant employing 7,500 which was nearest where the bomb [detonated].

All these latter plants today are hammered flat. But no saboteur creeping among the war plants of death could have placed the atomic bomb by hand more scrupulously given Japan's inertia about common defense.

NAGASAKI, Saturday, Sept. 8—In swaybacked or flattened skeletons of the Mitsubishi arms plants is revealed what the atomic bomb can do to steel and stone, but what the riven atom can do against human flesh and bone lies hidden in two hospitals of downtown Nagasaki. Look at the pushed-in facade of the American consulate, three miles from the blast's center, or the face of the Catholic cathedral, one mile in the other direction, torn down like gingerbread, and you can tell that the liberated atom spares nothing in the way. . . .

Showing them to you, as the first American outsider to reach Nagasaki since the surrender, your propaganda-conscious official guide looks meaningfully in your face and wants to know: "What do you think?" What this question means is: do you intend saying that America did something inhuman in loosing this weapon against Japan? That is what we want you to write about.

Several children, some burned and others unburned but with patches of hair falling out, are sitting with their mothers. Yesterday Japanese photographers took many pictures with them. About one in five is heavily bandaged, but none are showing signs of pain.

Some adults are in pain as they lie on mats. They moan softly. One woman caring for her husband, shows eyes dim with tears. It is a piteous scene and your official guide studies your face covertly to see if you are moved.

Visiting many litters, talking lengthily with two general physicians and one X-ray specialist, gains you a large amount of information and opinion on the victims. . . .

Most of the patients who were gravely burned have now passed away and those on hand are rapidly curing. Those not curing are people whose unhappy

lot provides the mystery aura around the atomic bomb's effects. They are victims of what Lt. Jakob Vink, Dutch medical officer and now allied commandant of prison camp 14 at the mouth of Nagasaki Harbor, calls "disease." Vink himself was in the allied prison kitchen abutting the Mitsubishi armor plate department when the ceiling fell in but he escaped this mysterious "disease X" which some allied prisoners and many Japanese civilians got.

Vink points out a woman on a yellow mat in the hospital, who according to hospital doctors Hikodero Koga and Uraji Hayashida have just been brought in. She fled the atomic area but returned to live. She was well for three weeks except a small burn on her heel. Now she lies moaning with a blackish mouth stiff as though with lockjaw and unable to utter clear words. Her exposed legs and arms are speckled with tiny red spots in patches.

Near her lies a 15-year-old fattish girl who has the same blotchy red pinpoints and nose clotted with blood. A little farther on is a widow lying down with four children, from one to about 8, around her. The two smallest children have lost some hair. Though none of these people has either a burn or a broken limb, they are presumed victims of the atomic bomb.

Dr. Uraji Hayashida shakes his head somberly and says that he believes there must be something to the American radio report about the ground around the Mitsubishi plant being poisoned. But his next statement knocks out the props from under this theory because it develops that the widow's family has been absent from the wrecked area ever since the blast yet shows symptoms common with those who returned.

According to Japanese doctors, patients with these late developing symptoms are dying now a month after the bomb's fall, at the rate of about 10 daily. The three doctors calmly stated that the disease has them nonplussed and that they are giving no treatment whatever but rest. . . .

NAGASAKI, Sept. 9—The atomic bomb's peculiar "disease," uncured because it is untreated and untreated because it is not diagnosed, is still snatching away lives here.

Men, women, and children with no outward marks of injury are dying daily in hospitals, some after having walked around three or four weeks thinking they have escaped.

The doctors here have every modern medication, but candidly confessed in talking to the writer—the first Allied observer to Nagasaki since the surrender—that the answer to the malady is beyond them. Their patients, though their skin is whole, are all passing away under their eyes.

Kyushu's leading X-ray specialist, who arrived today from the island's chief city Fukuoka, elderly Dr. Yosisada Nakashima, told the writer that he is convinced that these people are simply suffering from the atomic bomb's beta Gamma, or the neutron ray is taking effect.

"All the symptoms are similar," said the Japanese doctor. "You have a reduction in white corpuscles, constriction in the throat, vomiting, diarrhea and small hemorrhages just below the skin. All of these things happen when an overdose of Roentgen rays is given. Bombed children's hair falls out. That is

natural because these rays are used often to make hair fall artificially and sometimes takes several days before the hair becomes loose." . . .

At emergency hospital No. 2, commanding officer young Lt. Col. Yoshitaka Sasaki, with three rows of campaign ribbons on his breast, stated that 200 patients died of 343 admitted and that he expects about 50 more deaths.

Most severe ordinary burns resulted in the patients' deaths within a week after the bomb fell. But this hospital began taking patients only from one to two weeks afterward. It is therefore almost exclusively "disease" cases and the deaths are mostly therefrom.

Nakashima divides the deaths outside simple burns and fractures into two classes on the basis of symptoms observed in the post mortem autopsies. The first class accounts for roughly 60 percent of the deaths, the second for 40 percent. Among exterior symptoms in the first class are falling hair from the head, armpits, and pubic zones, spotty local skin hemorrhages looking like measles all over the body, lip sores, diarrhea but without blood discharge, swelling in the throat . . . and a descent in numbers of red and white corpuscles. Red corpuscles fall from a normal 5,000,000 to one-half, or one-third while the whites almost disappear, dropping from 7,000 or 8,000 to 300 to 500. Fever rises to 104 and stays there without fluctuating. . . .

Nakashima considers that it is possible that the atomic bomb's rare rays may cause deaths in the first class, as with delayed X-ray burns. But the second class [deaths] has him totally baffled. These patients begin with slight burns which make normal progress for two weeks. They differ from simple burns, however, in that the patient has a high fever. Unfevered patients with as much as one-third of the skin area burned have been known to recover. But where fever is present after two weeks, healing of burns suddenly halts and they get worse. They come to resemble septic ulcers. Yet patients are not in great pain, which distinguishes them from ordinary X-ray burn victims.

Up to five days from the turn to the worse, they die. Their bloodstream has not thinned as in the first class and their organs after death are found in a normal condition of health. But they are dead—dead of the atomic bomb—and nobody knows why.

Twenty-five Americans are due to arrive Sept. 11 to study the Nagasaki bombsite. The Japanese hope that they will bring a solution to Disease X.

#### FOR CRITICAL THINKING

1. Compare and contrast Oppenheimer's views of the atomic bomb with Tibbets's and Weller's views. What stance, if any, does each of these men take toward the bomb, and how is this reflected in their writing? Note in particular any differences or similarities in their reaction to the power of the atomic bomb.
2. Joseph Rothblat, a Polish scientist recruited to work at Los Alamos, insisted on leaving the project at the end of 1944 when it became apparent that there was no danger of any other nation's building a nuclear weapon before the United States. Based on your reading of these

selections, what do you think of his decision? Should other scientists have followed his lead? Why or why not?

3. At Hiroshima and Nagasaki in August 1945, and at the World Trade Center on September 11, 2001, civilians were specifically targeted for the sake of larger objectives: in the one case, military victory; in the other, a terrorist act in the name of Islam. In modern warfare, distinguishing between fighting an enemy military and attacking an enemy population may be impossible. If this is the case, how does one distinguish between just and unjust kinds of warfare? Do you believe that in future wars such distinctions will be available?