

The Misuse of the Utility of Science and Technology by Nationalism

—What do the Change of the Exhibition in Hiroshima Atomic Bomb Museum and the Popularity of the Battleship-YAMATO museum Mean?—

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For approximately fifty years since the war, Hiroshima has practiced “peace education backed by science education”, emphasizing that scientific technology could destroy peoples’ happiness if misused. The circumstances, however, have changed greatly over the last decade. The idea that Japan could stand up to Western countries was thanks to the fact that scientific technology had become widespread. This paper analyzes the circumstances in Hiroshima to determine the effectiveness of “peace education backed by scientific endeavors”.

KEYWORDS : STS education, conscientious scientists, Yamato Museum, Atomic Bomb Museum

1. Introduction

Since World War II, many intellectuals in Hiroshima, the site of world’s first horrific atomic bombing, have looked to science to help create a more peaceful world. Japan regrets that its imperialism led to the invasion of Asian countries and the attack on Pearl Harbor, thus inviting the tragedy the befell Hiroshima and Nagasaki. In school, teachers have taught students how to use technology for peaceful purposes by explaining the science behind the menace of atomic bombs. In other words, for approximately fifty years since the war, Hiroshima has practiced “peace education backed by science education”, emphasizing that scientific technology could destroy peoples’ happiness if misused. The circumstances, however, have changed

greatly over the last decade.

The idea that Japan, then a developing country, could stand up to Western countries was thanks to the fact that scientific technology had become widespread. Entering the 21st century, the Battleship Yamato started a boom in Japan, and the Yamato Museum was constructed in Kure City in Hiroshima prefecture, partly because the city was the army capital where the Yamato was built during World War II. The designers and engineers who took pride in manufacturing the world’s largest state-of-the-art battleship, in the early 1940s and the loyal soldiers who died in a suicide mission defending their country have been nationalistically linked to each other. Consequently, the belief that scientific technology is the best means to establish the country’s place in the world has become

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popular in present-day Japan.

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2. Position assumed by conscientious scientists after the war

After Japan’s defeat in World War II, many conscientious Japanese scientists performed scientific research in order to create a peaceful world, regretting that Japan’s invasion of Asian countries and the attack on Pearl Harbor invited the tragedy of the atomic bombing of Hiroshima and Nagasaki.

For example, Mitsuo Taketani, a physicist, conceived a scientific movement dedicated to pacifism. His activities after the war were the outcome of deep introspection allied with the notions that Japanese scientists are in a special position and need to reflect on their past, and that they should regret what they had done during the war of invasion¹⁾. The Japan Scientists’ Association (JSA) has vigorously promoted science for peaceful purposes and has conducted several campaigns in support of this cause, including taking action to oppose military research, the building of atomic and hydrogen bombs, and the changing of the Japanese constitution to allow for war.

As a result of those scientists’ pacifist activities, as well as teachers highlighting the pitfalls of science gone awry, teachers of peace education in Hiroshima have taught students that scientific technology can destroy people’s happiness if wrongly used. In other words, it is peace education through science education. To be more exact, in elementary as well as in junior and senior high schools, teachers have encouraged their students to think of the importance of using scientific technology for peaceful purposes by explaining the menace of the atomic bomb.

Very few scientists, however, have criticized the sophistic argument that has gained

currency in Japan that affirms the usefulness of scientific technology in elevating nationalism. This paper cites a couple of examples of such arguments in Hiroshima and recommends that Japan foster education affirming scientific technology used only for peaceful purposes; to ensure people's happiness.

3. Popularity of the Yamato Museum

The argument that emphasizes the excellence of our scientific technology as a means of inspiring pride in the homeland has been widely accepted. An actual example is the Yamato Museum, which is now enjoying burgeoning popularity.

The museum was opened in April 2005. Only two years after its opening, the number of visitors had exceeded three million. The stated objective in establishing the museum was to assist people in recognizing the history of Japan and the importance of peace, and to convey to children the excellence of scientific technology, since these will play a major role in the future of Japan as it aims for world leadership in science and technology²⁾.

When you tour the museum, you can see the following exhibitions in this order: “The Last Days of the Battleship Yamato,” “Farewell notes and relics of crew members who supported Japanese soldiers in Okinawa making a suicide attack,” “Kure city, reconstructed as a world famous shipbuilding city,” and an “Exhibition of real Zero fighters, human bombs, and armor-piercing ammunition”. All of these can be favorably compared to Yusyukan at Yasukuni Shrine, where class-A war criminals and kamikaze pilots are worshiped and linked to the seemingly harmless, “Technology for shipbuilding”, a hands-on exhibition for children.

Military technology, patriotism, scientific technology to sustain high economic growth, real weapons, and a hands-on science exhibition for children are included in one continuous series of exhibitions; the presentation of which

appears to be with insidious intent. Retracing the superior military technology of 60 years ago, and the kamikaze's worshipful patriotism that induced them to undertake suicide missions to protect the country, while at the same time promoting the necessity of establishing a nationalistic identity founded on scientific technology, seems to be tactically allied.

Subsequent to the opening of the Yamato Museum, the JMSDF (Japan Maritime Self-Defense Force) Kure Museum opened in April 2007. The JMSDF Kure Museum exhibits real submarines. The Kure Chamber of Commerce took the lead in establishing a preparatory committee to undertake the salvaging of the sunken Battleship Yamato's hull from the sea floor, spending 5 to 10 billion yen. These initiatives are in support of the argument that advocates the usefulness of scientific technology in order to elevate nationalism.

4. Exhibition policy change of the Atomic Bomb Museum

Another example is the discussion of a policy change with regard to exhibitions at the Atomic Bomb Museum; it is felt that an exhibition based on scientific argumentation would likely not be approved since such an approach would heighten awareness of Japan's responsibility as an offender.

The museum receives 570,000 students on excursion annually and is known as a Mecca of peace education. The current tour route is as follows: "History of Hiroshima, army capital, before the bombing" (East building), then "Realities of the bombing" (Main building), and finally "History of Hiroshima and steps toward peace after the bombing" (East building).

Currently, however, visitors stay in the museum an average of 45 minutes, while viewing the atomic bomb exhibition in the main building an average of only 19 minutes. The objective of revising the exhibition is to make it more impressive in order to attract more

visitors³⁾. The layout of the Atomic Bomb Museum will be revised completely, in fiscal 2010 at the earliest, into one in which A-bomb survivors will be brought to the fore and their lives will be introduced from a humanistic point of view⁴⁾.

However, if this plan is realized, the current exhibition emphasizing the four different causes of the devastation wreaked by nuclear weapons, namely, heat wave, blast wave, high heat, and radiation, will have to be revised or downsized. Compared with the present exhibition, the explanation of the army's role in Hiroshima before the war will be simplified and that of Japan's role as an offender might not be communicated at all.

In fact, the current exhibition does not convey to visitors the reality experienced by each bomb victim, which is an emotional issue, but instead is based on the scientific analysis of the atomic bombs' destructive power and the effects of radiation. Therefore, many visitors are continually impressed with the principle of nuclear weapons as the enemy of all mankind, rather than focusing on the "the US, who dropped the atomic bomb versus Hiroshima, the victim of the bombing."

The current exhibition at the Atomic Bomb Museum impels visitors to consider the cause of the war that led to the use of atomic bombs by arguing for the inhumanity of such weapons scientifically without expressing resentment toward the US, the country that used the atomic bombs. Changing this method of exhibiting and emphasizing the war devastation in order to appeal to visitors' emotions would be misinterpreted by Asian countries as Japan, an offender, claiming innocence.

5. Scientists' lack of awareness

Equally disconcerting, as I pointed out earlier in this paper, is that very few scientists have criticized the argument that affirms the usefulness of scientific technology in order to elevate nationalism in Japan. What seems

woefully apparent is an unconscious affirmation of the nationalistic policy on the part of the scientific community. Essentially, scientists are tacitly aiding and abetting state-of-the-art scientific research on the basis of the philosophical belief that “scientific technology is the best means of balancing the world,” as it brings enormous benefits to the nation.

A science café is where scientific technology experts and ordinary citizens have lively conversations discussing scientific technology over a cup of coffee. These are held at various locations around the country. According to the Japan Science and Technology Agency (JST), science cafés were held in 377 locations domestically from March 2007 through March 2008. When investigating the conversation themes, it was found that no science café chose themes such as the atomic bomb or scientific technology for peaceful purposes⁵⁾.

Moreover, Hiroshima prefecture has delivered classes about science to elementary schools since October 2007 in partnership with 12 business enterprises and two research institutes, the Hiroshima Prefectural Museum of History and the Fisheries and Ocean Technology Center. These classes are part of a project proposed by the Ministry of the Economy, Trade and Industry (METI), and supported by business enterprises, aimed at reversing the trend of declining interest in the sciences among schoolchildren. Such a trend is perceived as contributing to the declining standing of Japan as a technology-oriented nation. Initially, the project sought to engender children’s interest in the sciences. Upon closer inspection, encouraging joy in science is not the project’s motive at all; rather, addressing the concern about Japan’s low standing as a technology-oriented nation is its agenda. Consequently, any scientific research that does not harmonize with national policies could easily be excluded.

6. Roles of scientists who are involved in Science, Technology, and Society (STS) education or scientific technology ethics education

As long as Japan uses scientific technology solely as a means to place Japan in a superior position, too many scientists risk overlooking the negative aspects of scientific technology. Wanton disregard for technology’s potential to destroy, imperils the happiness of a pacifist nation.

Consequently, conscientious scientists need to assert themselves. There were many of them after the loss of World War II; they opposed using science for antisocial purposes and endeavored to use science for the betterment of humankind. Scientists involved in STS education and scientific technology ethics education are especially indispensable, as they do their part to herald and honor the legacy of their peace-loving predecessors.

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