

A historical perspective on science, technology, and society

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Q. What is the one thing you want to know the most right now?

I want to be able to explain what kind of attitude we should take toward science and technology in society. For example, should Japan continue to promote nuclear power? Should we embrace AI without any questions? There are many possible attitudes toward such issues. Among them, I want to think carefully about which stance I find the most reasonable and why.

To consider contemporary issues, I think it's helpful to take a historical perspective. For example, why did Japan originally decide to introduce nuclear power? Under what conditions were those decisions made? Are those conditions still relevant today, or have they changed?

In my research, I break down these questions into more specific ones. For example: What did scientists in Japan think during the early stages of nuclear power development? Did they support it or oppose it? What reasons did they state? How did their views align or conflict with those of politicians, bureaucrats, industry leaders, and citizens?

In Japan's case, the country shifted toward promoting nuclear power in the 1950s, shortly after regaining independence from the GHQ occupation. The national policy to promote nuclear energy was established through the Atomic Energy Basic Act. Japan signed agreements with countries like the United States to import nuclear technology and

radioactive materials. Institutions such as the Japan Atomic Energy Research Institute were established, and universities decided to create nuclear engineering courses. Research and education in this field expanded, and electric power companies began building nuclear power plants.

Thomas Hughes, a historian of technology, called such systems "sociotechnical systems," where science and technology are inseparable from social institutions. He argued that these systems develop what he called "technological momentum." Once such momentum is gained, the system tends to keep growing, even in the face of external opposition. Japan's nuclear power system gained technological momentum through support from politicians, bureaucrats, industry, and scientists. Despite protests and opposition movements, the system continued to expand and has remained in place even after the severe accident at the Fukushima Daiichi Nuclear Power Plant.

In opposition movements and legal actions related to nuclear power, whether people support or oppose it was directly questioned. But there are



other, more indirect ways of thinking about it. One approach I'm now interested in involves rethinking the use of decommissioned nuclear power plant sites.



Q. What do you consider to be a challenge at the moment?

My challenge is how to connect a historical perspective with current issues. Although historical research reveals many interesting insights, it cannot provide exact answers to today's problems. On the other hand, when considering current issues, it is necessary to also take historical perspectives into account.

I focus on the theories and methodologies which can incorporate a certain time scale. For example, the theory of "sociotechnical transitions" describes how sociotechnological systems change over time. While Hughes's theory of technological momentum focuses on the system's growth, it pays little attention to the system's decline. The research on the decommissioning of nuclear plants can be said to be related to the study of system decline.

Q. Could you share your thoughts on the future prospects of this field?

In the field of the history of science and technology, few studies have focused on the latter half of the 20th century, and even fewer on the 21st century, especially in Japan. However, considering that studies on quantum mechanics were conducted in the 1960s, it is not so strange to examine events from twenty or thirty years ago today. Now that a quarter of a century has passed in the 21st century, it is reasonable to expect that studies on the latter half of the 20th century and the 21st century will be conducted.

In the field of Science, Technology, and Society (STS), it has been pointed out that studies have tended to focus heavily on problems such as science communication and public participation. So, applying other research perspectives to the study of Japanese cases is a task for the future. I would like to examine current problems from the perspectives of the History of Science and Technology and STS, aiming to bridge the two fields.

Q. What was the most enjoyable moment and the most challenging moment during your research?

My most enjoyable moments are when I discuss topics related to the History of Science and Technology with my colleagues, especially when we read the same book and exchange our interpretations of it. Different persons can interpret the same sentences in different ways. By discussing the same text, I can be taught the points I haven't fully understood, and conversely, I can offer new interpretations and point out connections to other research. I believe research activities grow out of these kinds of conversations.

The most challenging moments are writing research papers. There is no true endpoint in writing them. There will always be points that can't be fully discussed. However, at some point, I have to set a time limit and start writing, and also decide where to stop in terms of length. It is a difficult task, but I think writing papers is a challenging and interesting process.

Q. Do you have a message for undergraduate and graduate students who are interested in joining your lab?

The field of the History of Science and Technology is not common at universities, especially in Japan. So, it is typical for researchers to shift into this field from other scientific disciplines. If you have questions about your current research area or are interested in interdisciplinary research, please consider the field of the History of Science and Technology and STS.