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Review by **Dong-Won Kim**, Harvard University

Three decades have passed since the Berlin Wall collapsed in 1989, and most members of the younger generation now consider the Cold War to be as antique as both the First World War and the Second World War. In an era of global terrorism that shakes every corner of the world regardless of political and religious differences, the "red scare" of 1947-1960 can even seem to be unrealistic. Historians' efforts to reinterpret the Cold War from different and distant perspectives are therefore only natural.[1] Likewise, historians of science are now reinterpreting science and technology during the Cold War from new angles: for example, David Kaiser's 2005 analysis of the unfair treatment of several theoretical physicists in the United States during the early Cold War period differs from the analyses offered by the historians of science in the 1980s and 1990s.[2]

Walter Grunden's article, "Physicists and 'Fellow Travelers': Nuclear Fear, the Red Scare, and Science Policy in Occupied Japan," offers a fresh understanding of the Cold War outside the United States. The paper is particularly welcome because it systematically analyzes how *both* the American Occupation (1945-1952) *and*

[1] Two good examples are John Lewis Gaddis, *The Cold War: A New History* (New York: Penguin Books, 2005), and Odd Arne Westad, *The Cold War: A World History* (New York: Basic Books, 2017).

[2] David Kaiser, "The Atomic Secret in Red Hands? American Suspicions of Theoretical Physicists during the Early Cold War," *Representations* 90:1 (2005): 28-60. For the articles published in the 1980s and 1990s, see Barton J. Bernstein, "In the Matter of J. Robert Oppenheimer," *Historical Studies in the Physical Sciences* 12:2 (1982): 195-252; James G. Hershberg, "'Over My Dead Body': James B. Conant and the Hydrogen Bomb," in Everett Mendelsohn, M. R. Smith, and P. Weingart (eds.), *Science, Technology and the Military* (Dordrecht: Springer, 1988), 379-430; Daniel Kevles, "Cold War and Hot Physics: Science, Security, and the American State, 1945-1956," *Historical Studies in the Physical and Biological Sciences* 20:2 (1990): 239-264; Peter Galison and Barton Bernstein, "In Any Light: Scientists and the Decision to Build the Superbomb, 1952-1954," *Historical Studies in the Physical and Biological Sciences* 19:2 (1989): 267-347.

the Cold War influenced the Japanese science community in the postwar period. Although some Japanese scholars, most notably the late Nakayama Shigeru, have published studies on Japanese science policy during the Occupation, the Cold War context has been discussed only briefly here and there.[3] Gruden, however, focuses on "how policies the United States enacted in the context of Cold War era national security concerns negatively affected the experiences of Japanese scientists" (343). He has carefully researched primary sources, especially American sources such as the *Supreme Commander for the Allied Power's Instructions to the Japanese Government* [*SCAPINS*] and the Douglas MacArthur Archives, and also a wide-range of secondary sources in English.

There are, however, three issues that make it difficult to endorse this article wholeheartedly. First, it is not quite correct to compare Japan with the United States between 1945 and 1952 because the situations in these two countries were so different. Japan had 'unconditionally surrendered,' and its territories had been vanquished not only by the carpet bombings but also by two atomic bombs during the last phase of the war. The United States, in contrast, had emerged the true victor of the Second World War, and General Douglas MacArthur, the Supreme Commander, was the *de facto* viceroy (or the 'blue-eyed shogun') who dictated Japan to demilitarize and democratize itself during the next six years.[4] The destruction of Japan's cyclotrons in December 1945 (348-350) proves not only the American determination to ensure that Japan never waged war against it again but also the United States' unchecked power in Occupied Japan. Most Japanese scientists, who had lived and worked under authoritarian and even militaristic regimes until 1945, adapted easily to the freer, more democratic postwar environment. They must have been surprised when the accelerating Cold War prompted Supreme Command for the Allied Powers (SCAP) to begin purging Communists and their sympathizers from the public life, but they once again had no choice but to adapt since Japan was an occupied country.

In the United States, in contrast, the red scare, McCarthyism, and the unjust treatment and humiliation of several celebrated physicists truly shocked the science community in the early 1950s and left deep scars. Although some Japanese scientists were forced to withdraw their applications for U.S. visas or had their applications rejected because of their doubtful connections with the Japanese Communist Party, there were no cases in Cold War Japan that resembled the J. Robert Oppenheimer security hearing or the deportation of rocket scientist Tsien Hsue-Shen.[5] Well-known Marxist physicists such as Sakata Shoichi and Taketani Mitsuo, for example, experienced no difficulties in their scientific activities and became even more politically active during the Occupation period. Taketani, for instance, openly argued in his 1951 paper that his 1936 theory of three stages of scientific development, which was based on Hegel's theory of dialectics, had greatly

[3] Shigeru Nakayama (ed.), *A Social History of Science and Technology in Contemporary Japan. Vol. 1: The Occupation Period, 1945-1952* (Melbourne: Trans Pacific Press, 2001).

[4] For more details on the Occupation period, see John W. Dower, *Embrace Defeat: Japan in the Wake of World War II* (New York: W. W. Norton, 1999).

[5] Trained at MIT and Caltech before the breakout of the Pacific War, Tsien Hsue Shen was one of the most celebrated rocket scientists in the United Stated during the 1940s. He became a target of the red scare in the late 1940s, was stripped of his security clearance and put under house arrest, and finally was deported to Communist China in 1955. For the scandal and his deportation, see Iris Chang, *Thread of the Silkworm* (New York: Basic Books, 1995), chapters 16-21.

contributed to the development of meson theory in Japan during the 1930s, and his theory became popular among Japanese physicists for next few decades.[6] Sakata published his own Marxist interpretations of science, "Theoretical Physics and Dialectics of Nature," in 1947, and received the prestigious Imperial Prize of the Japan Academy in 1950.[7] Hence, there are no "comparable experience [s] at about the same time (344)" or "parallel track[s] in the United States and Japan (343)" during these years.

The second difficulty with Grunden's article is that it does not seriously consider the different levels of science in these two countries. Until the beginning of the Pacific War in 1941, Japanese physicists had produced far fewer papers on nuclear physics than had their American or European counterparts, and the quality of those that had been published was not as high.[8] Although a few young physicists, such as Yukawa Hideki, Tomonaga Sin-itiro, Sakata, and Taketani, had begun to produce truly important papers on elementary particle physics since the mid-1930s, they were relatively isolated from the outside world and their ideas were not yet mature. Japan's efforts to build a nuclear bomb during the war were "much smaller, far less organized, and by comparison, poorly financed" than those of the United States and Germany, so that Japanese physicists possessed fewer atomic secrets to hide or pass on to the Communist countries after the end of the Second World War.[9] None of its cyclotrons was big or efficient enough to separate large amounts of nuclear material, and the attempt to build a nuclear reactor ended at the desk. Moreover, none of Japanese physicists involved in the nuclear bomb project during the war, including Nishina Yoshio who headed the Japanese Army's nuclear bomb project, was arrested or seriously interrogated after the end of the war, whereas ten German physicists, most notably Werner Heisenberg, were arrested and moved to England, where they were

[6] For the English translation of Taketani's 1951 paper, see Mitsuo Taketani, "Methodological Approaches in the Development of the Meson Theory of Yukawa in Japan," *Progress of Theoretical Physics Supplement* 50 (1971): 12-24. He was sought and arrested in 1938 by the Japanese police for his leftist activity. He was released the next year and was under Yukawa Hideki's custody until the end of the war.

[7] For the English translation of Sakata's 1947 paper, see Shoichi Sakata, "Theoretical Physics and Dialectics of Nature," *Supplement of the Progress of Theoretical Physics* 50 (1971): 103-119. Sakata also published a short paper on Taketani's theory of three stages in 1948. For English translation of it, see Shoichi Sakata, "Taketani's 'Three Stage Theory'," 9-11.

[8] Yoshio Nishina's laboratory in Riken, with two cyclotrons, was the most important center for nuclear research before the end of the war but produced few important papers on the subject. For more details, see Dong-Won Kim, "Yoshio Nishina and Two Cyclotrons," *Historical Studies in the Physical and Biological Sciences* 36 (2006): 243-273.

[9] Dong-Won Kim, *Yoshio Nishina: Father of Modern Physics in Japan* (New York: Taylor & Francis, 2007), p.153. There are several works on the Japanese nuclear bomb project during the Second World War but many of them include wild conjectures. The most balanced one are Keiko Nagase- Reimer, Walter E. Grunden, and Masakatsu Yamazaki, "Nuclear Weapon Research in Japan during the Second World War," *Historia Scientiarum* 14 (2005): 201-240, and Walter E. Grunden, *Secret Weapons & World War II: Japan in the Shadow of Big Science* (Lawrence: University Press of Kansas, 2005), Chapter 2. Nuclear Energy and the Atomic Bomb.

interrogated intensively for eight months.[10] In short, it is not fruitful to compare the American and the Japanese science communities (or physics communities) during the period of the Cold War.

Finally, Grunden's article underestimates the wide popularity of Socialism and Communism in postwar Japan. Thanks to SCAP's policy of demilitarizing and democratizing Japan, the Japanese Communist Party (JPC) became a legal political organization and grew rapidly until 1949, when it won 10 percent of the vote in the general election and sent 35 representatives to the Diet. The Social Democratic Party of Japan (or Japanese Socialist Party) had a better record. Founded in 1945, it became the largest political party in the first general election held in 1947 under the new Constitution (that the SCAP drafted). After two conservative parties, the Liberal Party and the Japan Democratic Party, merged to form the Liberal Democratic Party in 1955, the Social Democratic Party became the largest opposition party until 1996. Likewise, the influence of Minshushugi Kagakusha Kyokai (Minka: the Association of Democratic Scientists) was stronger and closer to the communist movement than Grunden describes in his article (355-356).[11]

Unlike in the United States, therefore, the red scare was to some degree *real* in Japan during the postwar period. SCAP, which had initially encouraged the leftist movement in order to destroy the strong militarism in Japan, began to have second thoughts. The advent of the Cold War only accelerated the pace of this change, as SCAP first sought to intensify surveillance of leftist activists and then to curb and purge them. Nakaya Ukichiro, Matsuura Hajime, and Sakata's difficulties obtaining visas to enter the US (358-361), which Grunden selects as examples of the unfair treatment of Japanese scientists by SCAP during this period, seems quite understandable from SCAP's perspective at the height of the Cold War in the late 1940s and early 1950s. By the fall of 1949, three of Japan's neighbors—the Soviet Union, China, and North Korea—were staunch Communist countries, and one of them even possessed the nuclear bomb. The next year, the Cold War became the Hot War on the Korean peninsula. Grunden writes that, "Like their counterparts in the United States, many Japanese scientists felt the chill of the Cold War Red Scare that so menaced the world in the late 1940s and early 1950s (365)"; perhaps it would be better to say that unlike their American counterparts, many Japanese scientists worked alongside Marxists and their sympathizers, and felt the heat of the Hot War Red Scare that so menaced Japan during these years.

Two additional comments spring to mind for the future research on this fascinating but delicate subject. One is that Grunden depends heavily on a few selected primary sources in English and barely refers to Japanese sources. The article would have been more persuasive had it included more sources in Japanese, such as newspapers and magazines, to explain the general social and academic milieu of the time. Also, this Japanese case could profitably have been compared with German experience during the same period.[12] Both countries

[10] Jeremy Bernstein, *Hitler's Uranium Club: The Secret Recordings at Farm Hall*, revised edition (New York: Copernicus Books, 2001), especially Introduction by David C. Cassidy.

[11] Shigeru Nakayama, "The Association of Democratic Scientists (Minka)" in Shigeru Nakayama (ed.), *A Social History of Science and Technology in Contemporary Japan. Volume 1: The Occupation Period 1945-1952*, 470-481. Nakayama calls Minka as "a gathering of Marxist scientists" in his introduction to the above book (31).

[12] David Cassidy published two papers on the Allies' science policy in occupied Germany. See David Cassidy, "Controlling German Science, I: U.S. and Allied Forces in Germany, 1945-1947," *Historical Studies in the Physical and Biological Sciences* 24:2 (1994): 197-235; David Cassidy, "Controlling German Science, II: Bizonal Occupation and the

had to surrender unconditionally and were occupied by foreign militaries for many years. How much and in what way was the American (or Western Allies') science policy in occupied Germany different from SCAP's policy in Japan?

Despite the reservations outlined above, this article offers a new interpretation of the circumstances of Cold War science in Occupied Japan. This is valuable for the progress of scholarship. The article also reminds readers of the difficulties and complexity of comparative studies.

Dong-Won Kim is a historian of science. His major research fields are history of physics and history of science and technology in modern East Asia. He published several papers on these subjects, alongside two books, *Leadership and Creativity: A History the Cavendish Laboratory, 1871-1919* and *Yoshio Nishina: Father of Modern Physics in Japan*. He has taught at KAIST, Seoul National University, Johns Hopkins University, Harvard University, National University of Singapore, and the University of Pennsylvania. He is currently working on the popular images of science and technology in modern East Asia.

Struggle over West German Science Policy, 1946-1949," *Historical Studies in the Physical and Biological Sciences* 26:2 (1996): 197-239.