

Different Dreams in One Bed:

Technocratic Developmental Visions of Nuclear Reprocessing Technology in 1970s South Korea

Abstract

This paper revisits South Korea's attempt to acquire nuclear reprocessing technology from France in the early 1970s. The previous historical analysis of this episode agrees with the Ford administration's diagnosis: it was an attempt at nuclear proliferation by a president whose country was waging a never-ending Cold War. Under the context of America's weakening military commitment in Asia as a result of the Vietnam War, national security became all the more urgent to South Korea. It was also studied as an example of American diplomacy successfully knocking "fence-straddlers" off the path of nuclear proliferation. While those are valid, this paper draws upon recent critical reflections in the field of international history and modern South Korean history to illuminate another layer of this incident by asking who and why pushed this deal again.

This paper focuses on the controversy surrounding a particular set of nuclear technology that could be used for multiple purposes and the way that this technology meant different things. By revisiting the French negotiation based on documents from the archives in Korea and published memoirs, this paper argues that it was the South Korean technocrats, not the president, who pushed for it; it was a particular developmental vision of self-sufficiency and independence, not quite weapons production, that was the motivation; and lastly, it was not the Cold War imperative of war, but rather the post-colonial imperative of advancement that was in the minds of the technocrats. While the Cold War imperatives were of great importance, those weren't the only considerations that drove this deal and thus addressed a deeper strand of Korean developmentalism.

Introduction: Something Was Afoot

Something is 'clearly afoot,' the American officials of the Gerald Ford administration thought about South Korea in 1975.¹ Koreans were discreetly working on a deal with the French government to get nuclear reprocessing capabilities. This negotiation between South Korea and France was soon to be engulfed in the competing narratives of what this technology meant: the early stage of nuclear technology development could lead to both civilian and military directions.

¹ U.S. Embassy Seoul Telegram 1089 to State Department, "ROK Nuclear Program," 20 February 1975, Secret. Reading Group 59, Access to Archival Databases (AAD) 1975.

The Koreans claimed that they desired a nuclear reprocessing technology to save cost on fuel for its nuclear reactors. The country was a beneficiary of the Atoms for Peace project for over a decade. The Americans, however, saw it as an attempt at nuclear proliferation. If this deal goes through, the Americans feared, South Korea would be able to reprocess its nuclear fuels and to build nuclear weapons. In both cases, motives are understandable: the nuclear power industry is only as competitive as how much you can save on nuclear fuel, which, compared to conventional fossil fuels, can be artificially regenerated. An anti-communist country ruled by a strongman president fighting a war with its nemesis in the north.

At the end of the day, despite whatever the deal was about, after months of intense American and international pressures on both South Korea and France, the deal was swiftly put to an end. What this paper puts forth is that there was another narrative about what this technology meant. This narrative, forged by the South Korean nuclear technocrats, was able to exist precisely due to the fact that this technology's implications were multiple. It brings to mind a Chinese idiom widely used in Korea called *tong-sang-i-mong*. This idiom, literally meaning people sleeping in one bed but dreaming different dreams, serves as a metaphor for people who might look as though they are working for the same goals but are actually thinking about doing different things. It was the polyphony of competing narratives embedded in this nuclear technology. The technocrats believed that they were the 'bed' that enabled all these projects since they were closest to the technology, believing that technology, despite generating very political implications, is apolitical.

Literature Review

By highlighting a prominent moment in inter-alliance conflict, this paper aims to diversify the US in the World field, which focuses on critically analyzing the ways that the United States

shaped the world in the twentieth century.² The Global Cold War thesis, a branch within the U.S. in the World field, claims that the Cold War imperative was a powerful motivation of the United States to intervene around the world, such as in the Korean peninsula.³ The dominance of the Cold War imperative dictated what defines and constitutes national interests in the same Cold War camp, such as the case of the U.S. and South Korea. According to this perspective, scholars have interpreted this event as a case of an nuclear proliferation attempt. Diplomatic and political scholars such as William Burr and Se-young Jang carefully investigated the American and Canadian diplomatic responses that successfully thwarted South Korea's project.⁴

This paper, however, joins the recent trends in the history of American international development, as Korea's nuclear industry has seen so much American aid, public and private. The history of American international development, a prevalent way that the U.S. shaped the twentieth century outside of war and diplomacy, has questioned the motivations, methods, and consequences of the seemingly enchanting ideas of modernity, progress, and development.⁵ Championed by an influential intellectual such as Walter Rostow, the field of social sciences and its theories on modernization became the ethos of American foreign policy most prominently in the mid-twentieth century. As Nick Cullather states, "If national security was the sum of all fears, a nightmare vision of an American garrison state cowering before a hostile Eurasia,

² One of the most representative scholarly works that historicized the American foreign policy is Michael H. Hunt, *Ideology and U. S. Foreign Policy* (Yale University Press, 2009).

³ One of the most representative scholarly works that historicized the twentieth century global history through the Cold War competition is Odd Arne Westad, *The Global Cold War: Third World Interventions and the Making of Our Times* (Cambridge University Press, 2005).

⁴ William Burr, "Stopping Korea from Going Nuclear, Part I" (National Security Archive, 2017), available at: <https://nsarchive.gwu.edu/briefing-book/nuclear-vault/2017-03-22/stopping-korea-going-nuclear-part-i>; Se-Young Jang, "Bringing Seoul into the Non-Proliferation Regime" (Wilson Center, September 2017), available at: <https://www.wilsoncenter.org/publication/bringing-seoul-into-the-non-proliferation-regime>.

⁵ A few of representative scholarly works include: Michael E. Latham, *Modernization as Ideology: American Social Science and "Nation Building" in the Kennedy Era* (Univ of North Carolina Press, 2000); Nils Gilman, *Mandarins of the Future: Modernization Theory in Cold War America* (Johns Hopkins University Press, 2003); Nick Cullather, *The Hungry World: America's Cold War Battle against Poverty in Asia* (Harvard University Press, 2011).

development spoke of dreams: a transparent, modernizing world mastering man and the environment with American technology.”⁶ By uncovering the complex interconnectedness of the Cold War imperative and the American foreign intervention ideology, the field was able to investigate the multilayeredness of the twentieth century.

This paper, within the tradition of critical studies of international development, attempts to expand the bounds of the multiplicity of developmental visions by framing international development as a two-way street between a providing nation and a receiving nation. If so much of previous scholarship has uncovered the way in which American thoughts and interests were recast as a universal model of progress, more recent scholarship began to excavate multiple visions and versions of development that existed under the shadow of modernization with a capital M.⁷ The relationship between the United States and its most vociferous anti-communist ally, South Korea, in the field of nuclear technology, is one of the most potent sites to observe polyphonic definitions of what progress meant for different groups of people.

Although the US-ROK (Republic of Korea) relationship has been known for its unwavering commitment to fighting communism, recent scholarship has demonstrated the dissonance and schism within. One of the most prominent ways to illustrate this was to show how South Korean politicians skillfully maneuvered American intention and action to revamp its state, invest in infrastructure, and transform its landscape. These works proved that while the U.S. borne military aid, economic loan, and ideological influence on South Korea cannot be ignored, South

⁶ Nick Cullather, “Development and Technopolitics,” in *Explaining the History of American Foreign Relations: 3rd Edition*, ed. Frank Costigliola and Michael J. Hogan (Cambridge University Press, 2016), 115.

⁷ A good example of illustrating competing strands of development model within the American context is Daniel Immerwahr, *Thinking Small* (Harvard University Press, 2015). For the methodologies of carrying out this work, see Nick Cullather, “Development and Technopolitics,” in *Explaining the History of American Foreign Relations: 3rd Edition*, ed. Frank Costigliola and Michael J. Hogan (Cambridge University Press, 2016).

Korea had the agency, motivation, and strategy.⁸ Anti-communism has been one of the most important identities of post-WWII South Korea, but it was not the only motivation for its developmental zeal. Perusing its own genealogy of developmental desires makes clear the importance of local and indigenous motivations.⁹ Moving well beyond analyzing the motivations of the center and interrogating the consequences and the entailing discrepancies on the field thereby makes the Americanization a negotiation rather than an imposition.

The choice of nuclear technology field—the controversies over nuclear reprocessing technology—to observe the expressions of visions of development and modernity is inspired by the recent developments in the field of nuclear history with the impact of Science and Technology Studies. The desire to investigate how technology shaped political powers, social systems, and human relations in modern times propelled Science and Technology Studies to recast an inanimate object such as technology as an agent of historical change in politics, society, and culture. They have illuminated how technological artifacts and designs reflected the political and social aspirations of modernity, as well as how the production of technological knowledge was intertwined with nationalism, class, gender, and body. The new perspective on nuclear technology began with these insights, and such historians as Gabrielle Hecht and Kate Brown have moved away from the classic Cold War nuclear history towards the history of nuclear technology in wider contexts.¹⁰ Techno-politics, “the hybrid forms of power embedded in

⁸ A few historical works that focused on the American-Korean relationship and stressed Korean agency include: Jung-en Woo, *Race to the Swift: State and Finance in Korean Industrialization* (Columbia University Press, 1991); Gregg A. Brazinsky, *Nation Building in South Korea: Koreans, Americans, and the Making of a Democracy* (Univ of North Carolina Press, 2009); David P. Fields, *Foreign Friends: Syngman Rhee, American Exceptionalism, and the Division of Korea* (University Press of Kentucky, 2019).

⁹ For the work that emphasized the role of East Asian network of technology in its economic development, see Hiromi Mizuno, Aaron S. Moore, and John DiMoia, *Engineering Asia: Technology, Colonial Development, and the Cold War Order* (Bloomsbury Publishing, 2018).

¹⁰ Gabrielle Hecht and Michel Callon, *The Radiance of France: Nuclear Power and National Identity after World War II* (MIT Press, 2009). Kate Brown, *Plutopia: Nuclear Families, Atomic Cities, and the Great Soviet and American Plutonium Disasters* (Oxford University Press, 2013).

technological artifacts, systems, and practices,” enables us to understand nuclear technology as a site where visions and ideologies of modernity contest one another.¹¹

Nuclear reprocessing technology, with its significant implications for military, economic, and scientific development and application of nuclear technology, is a good example of the discrepancies between the developmental logic of the provider and the receiver of international technological aids. Atoms for Peace was one of the best examples of American international development that began in the 1950s and remained active until the 1970s. As a symbol of international collaboration and governance of nuclear technology and fissile materials, Atoms for Peace was motivated by Cold War concerns and its East-West rivalry.¹² It also instigated developers around the world to view nuclear technology as a means of development.

By highlighting the agency of technocrats within the South Korean developmental dictatorship, this paper aims to illuminate the importance of technocracy in the South Korean developmental state and contribute to a better understanding of the country’s modernization process. Contrary to the conventional wisdom that views a large part of South Korean modern history as a monolithic unit, this paper attempts to diversify the political influences of South Korean development by examining the role of technology and technocracy in this process. It focuses on technocracy as a key trait of the South Korean developmental state, explores the internal logic and mechanism of

¹¹ Hecht, *Radiance of France*, 3.

¹² The literature on the historical meanings of Atoms for Peace initiatives include the following: Ira Chernus, *Eisenhower’s Atoms for Peace* (Texas A&M University Press, 2002); Richard G. Hewlett and Jack M. Holl, *Atoms for Peace and War, 1953-1961: Eisenhower and the Atomic Energy Commission. (A History of the United States Atomic Energy Commission. Vol. III)*, 2021; Kenneth Alan Osgood, *Total Cold War: Eisenhower’s Secret Propaganda Battle at Home and Abroad* (University of Kansas, 2006); Mara Drogan, “The Nuclear Imperative: Atoms for Peace and the Development of U.S. Policy on Exporting Nuclear Power, 1953-1955,” *Diplomatic History* 40, no. 5 (November 2016): 948–74; Eliza Gheorghe, “Peace for Atoms. US Non-Proliferation Policy and the Romanian Role in the Sino-American Rapprochement, 1969–1971,” *The International History Review* 0, no. 0 (February 2, 2018): 1–24; Stephen Twigge, “The Atomic Marshall Plan: Atoms for Peace, British Diplomacy and Civil Nuclear Power,” *Cold War History* 16, no. 2 (April 2, 2016): 213–30.

the highly technocratic government, and analyzes the ways in which technocrats attempted to persuade politicians when there were challenges to their beliefs.

It is easy to emphasize only one political will because of the succession of authoritarian and dictatorial regimes that ruled South Korea with the backing of consecutive American governments. These governments, variously ruled by leaders such as Seung-man Rhee and Chung-hee Park, possessed the ability to impose law and order and attained domestic legitimacy on some level due to their achievements in developing the economy.¹³ Therefore, the previous analysis of this event hinged on the intentions and actions of President Chung-hee Park, who ruled South Korea from 1963 to 1979.

This event regarding the nuclear reprocessing technology, too, was analyzed as something that was orchestrated by President Park. Seung-young Kim and Sung-gul Hong, for example, argue that the South Koreans sincerely wanted to develop their own nuclear weapons capability in order to compensate for the weakening U.S. military protection during the Robert Nixon regime by analyzing the President's intent shown in his rhetoric and actions. Lyong Choi, on the other hand, claims that it was a bluff; the rationale behind this wildly unrealistic ambition was to scare the Americans into increasing its commitment to South Korea's protection.¹⁴

While previous research significantly deepened our understanding of the modern South Korean state, the research on the implication of technological development on dictatorship and society

¹³ For a collective body of work with the analytic focus on political history during Park Chung-hee era, see Byung-Kook Kim and Ezra F. Vogel, *The Park Chung Hee Era* (Harvard University Press, 2011). For a chapter that is particularly illuminating on the scope of his rule see Chung-in Moon and Byung-joon Jun "Modernization Strategy: Ideas and Influences" in Byung-Kook Kim and Ezra F. Vogel, eds., *The Park Chung Hee Era* (Harvard University Press, 2011).

¹⁴ According to Kim, Park sincerely wanted South Korea to have an independent nuclear deterrent capability against North Korea because Park was a bulldozer with little patience for rhetoric and a realist who was obsessed with winning tangible achievements. Seung-Young Kim, "Security, Nationalism and the Pursuit of Nuclear Weapons and Missiles: The South Korean Case, 1970-82," *Diplomacy & Statecraft* 12, no. 4 (December 1, 2001): 53-80. Sung-gul Hong, "The Search for Deterrence: Park's Nuclear Option" in Byung-Kook Kim and Ezra F. Vogel, eds., *The Park Chung Hee Era* (Harvard University Press, 2011); Lyong Choi, "The First Nuclear Crisis in the Korean Peninsula, 1975-76," *Cold War History* 14, no. 1 (January 2, 2014): 71-90.

has begun recently. The emphasis on technological development legitimized the dictatorship as it industrialized the country's landscape and seemed to have brought material affluence by the 1990s.

This narrative is reinforced by the Science President discourse, where only the dictator has the agency to create and enforce science and technology policies. The Science President discourse attributes South Korea's rapid industrialization and the necessary technological developments to the will and policies of a driven dictator. It posits that President Park was the single most important actor who pushed Korean science forward for a purely patriotic purpose, as was evidenced by Park's statue in one of the most prominent science research institutes in South Korea.¹⁵

This paper, however, joins the scholarly effort to challenge this view and put forth a "science republic" concept that allows science and technology to have their own historical logic and network.¹⁶ Scholars such as Kim Tae-ho, Kim Geun-bae, and Moon Man-yong have argued that science policies were not just enforced unilaterally from the top but were created as a part of the hegemony wherein the government officials and the masses were not bystanders but participants. A vision of development embedded in technology was the dictatorship's main instrument that could imbue the masses with dreams of material affluence and physical security.

This becomes very apparent within the South Korean nuclear system to delineate how many different actors influenced the nuclear policy. Technocrats were the most fervent believers in the engineering of modernization. Dongwon Kim and DiMoia have shown how nuclear science and

¹⁵ Tae-ho Kim, *Beyond the Myth of Science President Park Chung-Hee in Science, Power, and Nation*, (Seoul: Yeoksawa-bipyunsa) 2018

¹⁶ Tae-ho Kim et al, *Beyond the Myth of "Science President Park Chung-Hee" - Science, Power, and Nation*, (Seoul: Yeoksawa-bipyunsa, 2018).

energy symbolized modernity to Koreans.¹⁷ As government officials with advanced technical and science training, they enjoyed privileges and autonomy in policymaking within a highly functional and driven bureaucracy, even inside a dictatorial regime.¹⁸ Their most crucial driving engine was the post-colonial desire to develop South Korea's research and development capacity. These scientists, according to Moon, are different from the South Korean government whose priorities were solving issues such as national reconstruction and food deficiency. The aspirations of these scientists started in the Japanese colonial era when scientists began to think that Korea was colonized because it lacked modern science and technology. Unlike in India, where scientists still believed that the indigenous roots of natural sciences should be respected, Korean scientists' chief concern was to adopt Western methodologies rapidly. In doing so, they emphasized the role of science and technology in nation-building and the duty of a centralized government to nurture science and engineering capacity.¹⁹

Technocratic Initiatives

It was the scientists who took the initiative in trying to acquire reprocessing technology. In early 1973, the South Korean government began to approach France to import its nuclear fuel reprocessing facilities. This French deal was one part of a larger project initiated by the Ministry of Science and Technology (MOST), headed by Minister Hyung-sup Choi in the early 1970s to diversify South Korea's nuclear energy collaborators. The purpose of the project was to heighten

¹⁷ DiMoia, John. "Atoms for Sale?: Cold War Institution-Building and the South Korean Atomic Energy Project, 1945–1965." *Technology and Culture* Volume 51, no. Number 3 (July 2010): 589–618. Dong-Won Kim, "Imaginary Savior: The Image of the Nuclear Bomb in Korea 1945-1960," *Historia Scientiarum* 19, no. 2 (December 2009).

¹⁸ For work which focuses on political history during the Park Chung-hee era, see Byung-Kook Kim and Ezra F. Vogel, *The Park Chung Hee Era* (Harvard University Press, 2011). For a chapter that is particularly illuminating on the scope of Park's rule, see Chung-in Moon and Byung-joon Jun "Modernization Strategy: Ideas and Influences" in Byung-Kook Kim and Ezra F. Vogel, eds., *The Park Chung Hee Era* (Harvard University Press, 2011).

¹⁹ To achieve a systematic development of S&T, the scientists believed that "the government should place greater emphasis on science education, establish a governmental agency that would oversee science and engineering administration, and found a proper research institute."170. Hiromi Mizuno, Aaron S. Moore, and John DiMoia, *Engineering Asia: Technology, Colonial Development, and the Cold War Order* (Bloomsbury Publishing, 2018).

the competitiveness of nuclear fuel. With Canada, South Korea began a negotiation to import two types of fuel-efficient nuclear reactors: a CANDU reactor and an NRX reactor.²⁰

The problem was that this attempt signified the probability of the South Korean government being able to produce its own nuclear fuel. The United States, becoming increasingly weary of nuclear proliferation, could not allow this to happen. Initially, the Korean Atomic Energy Institute (KAERI) targeted an American research institute, Argonne National Laboratory, in its endeavor to acquire nuclear reprocessing technology.²¹ It was when Argonne National Laboratory turned the request down that the Koreans found a willing partner in France.²² The American fear of nuclear proliferation was a well-known fact. Therefore, it can be assumed that the South Korean scientists had not expected the acquisition of nuclear reprocessing technology to become such a thorny issue between the two countries.

That was because of France and its unique position within the world's nuclear history. In the 1970s, one strand of nuclear development originated from the Manhattan Project—includes the United States, Britain, and Canada—and the other is the progress of the Soviet Union, which followed on the heels. France, however, developed its nuclear technology independently from the United States, and thus, the French nuclear technology was not controlled and monitored by

²⁰ CANDU, Canadian Deuterium Uranium Reactor, is a pressurized heavy-water reactor (PHWR). Its advantages are that it could be operated without expensive uranium enrichment facilities. The mechanical arrangement of the PHWR is particularly efficient because the resulting thermal neutrons are less hot. PHWR can use natural uranium and other fuels more efficiently than light water reactors. While it reduces fuel costs, heavy water is expensive. There have been two major types of CANDU reactors, the original design of around 500 MWe that was intended to be used in multi-reactor installations in large plants, and the rationalized CANDU 6 in the 600 MWe class that is designed to be used in single stand-alone units or in small multi-unit plants. CANDU 6 units were built in Pakistan, Argentina, South Korea, Romania, and China. Heavy-water reactors may pose a greater risk of nuclear proliferation versus comparable light-water reactors due to the low neutron absorption properties of heavy water, discovered in 1937.

NRX (National Research Experimental) is a heavy-water-moderated, light-water-cooled nuclear research reactor at the Canadian Chalk River Laboratories, which came into operation in 1947 at a design power rating of 10 MW (thermal), increasing to 42 MW by 1954. At the time of its construction, it was Canada's most expensive science facility and the world's most powerful nuclear research reactor.

²¹ Argonne National Laboratory is an American research institution that dates back to the Manhattan Project in WWII. By 1970 it had grown into an institution pioneering in nuclear research but physics and chemistry. Jack M. Holl, Richard G. Hewlett, and Ruth R. Harris, *Argonne National Laboratory, 1946-96* (University of Illinois Press, 1997).

²² Hong, "The Search for Deterrence," 488.

the USA. The Fourth Republic of France established a national atomic energy committee, Commissariat à l'Énergie atomique (CEA), to lead the development of the nuclear industry, which then subsequently built the nuclear arsenal by 1960 and the world's largest nuclear energy industry.²³ In the late 1960s, France was actively trying to expand its nuclear industry to global customers, and the reprocessing market was deemed to be particularly lucrative.

South Korea started its nuclear collaboration negotiation with France when the representatives of the MOST and the CEA met in Paris in May 1972.²⁴ Entirely for “peaceful purposes,” the two agencies discussed a broad range of potential collaboration in atomic energy. Specifically, the main goal was to collaborate on building nuclear reprocessing facilities in South Korea so that it would be able to produce nuclear fuels for its reactors. Finally, in 1974, the representatives of the KAERI and French nuclear companies that were contracted by CEA drafted an agreement that envisioned the development of five nuclear reactors of a total of 6,600 MW and a pilot plant—a nuclear reprocessing facility—with the final goal of producing fissile material by 1975.²⁵

Minister Hyung-sup Choi was the most vociferous proponent of the nuclear technology transfer from France. When Choi became the minister, he initiated a fifteen-year-long Nuclear Power Development Plan. In his memoir, he stated that having to buy nuclear fuels was extremely costly and “the countries that could supply nuclear reactors could not only export expensive machines but also could subject the receiving country too many difficult conditions during a

²³ See Lawrence Scheinman, *Atomic Energy Policy in France under the Fourth Republic* (Princeton University Press, 1965); Spencer R. Weart, *Scientists in Power* (Harvard University Press, 1979); Dominique Mongin, *La bombe atomique française 1945-1958* (Emile Bruylant, 1997). Spencer R. Weart, *Scientists in Power* (Harvard University Press, 1979); Dominique Mongin, *La bombe atomique française 1945-1958* (Bruxelles : Paris: Emile Bruylant, 1997).

²⁴ File 11, DVD J-0090, Classification 741.61FR, Agreement between Korea and the Republic of Korea for Co-operation on the Peaceful Use of Atomic Energy (1973-1974), Diplomatic Archives of the Republic of Korea (hereafter 11/J-0090/741.61FR, ROK Diplomatic Archives)

²⁵ File 11, DVD J-0090, Classification 741.61FR, Agreement between Korea and the Republic of Korea for Co-operation on the Peaceful Use of Atomic Energy (1973-1974), Diplomatic Archives of the Republic of Korea (hereafter 11/J-0090/741.61FR, ROK Diplomatic Archives)

long-term supply of fissile materials.”²⁶ Therefore, they initiated multiple plans at the same time such as “importing Canadian CANDU reactor to diversify the sources of nuclear fissile materials, collaborating with France to be self-sufficient on nuclear fuels, producing parts for nuclear power plants on our own.”

His own accounts of the event surrounding nuclear reprocessing technology contradict the conventional interpretation of the event. Most scholars have concluded that it was President Park who was the mastermind of the nuclear reprocessing facility negotiation with France with the production of plutonium in mind, but Minister Choi wrote that it was himself, not Park, who pushed for it till the last minute even against the dissuasion of Park.²⁷ According to Choi, American Ambassador Richard Snieder asked to clarify if the rumor that South Korea was planning to reprocess its own spent nuclear fuel was true. If it was true, Snieder warned, South Korea must reconsider. Snieder explained if Korea began to reprocess spent nuclear fuel, it could start “a misunderstanding” that Korea was producing plutonium to build atomic bombs, which would provoke the Soviet Union to give atomic bombs to North Korea.

Choi was indignant at this implication, arguing that it had nothing to do with atomic bombs but everything to do with the “development of nuclear energy” and having “control over our fuels.”²⁸ Choi did not give up when a team of American representatives headed by Dr. Myron Kratzer came to Seoul in 1976. The Americans offered to do the reprocessing for the Koreans. At that point, even President Park suggested that South Korea “stop being stubborn and give up our reprocessing plan” because he was afraid that the USA would issue “a threat to cutting military

²⁶ Hyung-sup Choi, *Laboratory That Never Sleeps: The 30 Years Dawn of Korean Science and Tehcnology* (The Chosun Ilbo Corporation, 1995). 132.

²⁷ Hyung-sup Choi, *Laboratory That Never Sleeps: The 30 Years Dawn of Korean Science and Tehcnology* (The Chosun Ilbo Corporation, 1995). 133.

²⁸ Hyung-sup Choi, *Laboratory That Never Sleeps: The 30 Years Dawn of Korean Science and Tehcnology* (The Chosun Ilbo Corporation, 1995). 132.

aid.” And Park suggested that the U.S. promised to reprocess fuels for Koreans, Choi put up a last fight with his president, arguing that “radioactive waste is a problem wherever in the world,” casting doubt on the willingness of the USA to take it off of their hands.²⁹ It was only after France dropped the technology transfer deal due to pressure from the USA and the International Atomic Energy Agency (IAEA) that Choi had no choice but to give up on it.

The MOST was the core group in the early phase of the deal, having an upper hand over the diplomats. In the spring of 1974, when the Ministry of Foreign Affairs (MOFA) learned that Minister Choi had reached an agreement with France, they challenged the legitimacy of the deal in terms of the diplomatic protocol. MOFA pointed out that an international deal must be handled by the state’s diplomatic corps and demanded that the Science Ministry revise the draft according to formal diplomatic procedures between the ministries of foreign affairs of both countries.³⁰ To this reprimand, the scientists explained that the motive of agency-to-agency negotiation rather than government-to-government one was the wish of the French counterpart, the CEA. The French agency wanted to avoid irksome bureaucratic red tape that would inevitably entail inter-governmental negotiation. The Korean scientists, however, suspected that it was probably to avoid the restrictions and surveillance of nuclear nonproliferation measures of the IAEA. Until then, France had yet to join the NPT and had never done a nuclear deal with an IAEA member country like South Korea. This was actually advantageous to Korea, the scientists argued, because nuclear supplier countries rarely made this kind of offer. Not only would it indeed accelerate the economic development of Korea, but it would also provide the recipient country with more options. Lastly, the scientists argued that since they had already promised

²⁹ Hyung-sup Choi, *Laboratory That Never Sleeps: The 30 Years Dawn of Korean Science and Tehcnology* (The Chosun Ilbo Corporation, 1995). 132.

³⁰ “A letter from MOFA to MOST in May 1974.” 11/J-0090/763.631FR, ROK Diplomatic Archives.

France during their visits to Paris, they could not back out from it without damaging the image of the Ministry of Science.³¹ This rationale could be targeted specifically to a group like the Ministry of Foreign Affairs, which often cared about the image of South Korea in the international arena. The argument regarding the “face-saving” way of handling international negotiations appears frequently as an argument that the South Korean bureaucrats used to defend the negotiation on nuclear reprocessing technology.

What were the motives of the scientists besides nuclear arsenal and nuclear energy? They wanted to promote Korea’s basic science and research capacity, which was a difficult task, even within the reign of President Park, a so-called “science president.” Because of the nation's military and economic imperative, efficiency became the most important rule to follow in developing national science projects. Therefore, resources were given to technology that could churn out a concrete result, not science as a research capability and infrastructure that requires long-term nurturing and as a knowledge system. Although technology and science in this sense were inter-connected, technology could be relatively easily obtained by copying without a direct boost to the ability to produce scientific knowledge. These different goals were not mutually exclusive; the acquisition of sophisticated nuclear technology could stimulate development in military, economic, and science all at the same time. They approached nuclear processing as an important chance to enhance a basic level of nuclear physics and the nuclear industry in Korea.

For the scientists, having nuclear processing facilities was a learning opportunity. When the U.S. pressured to cancel the negotiation with France on reprocessing technology, South Korean scientists argued that it was crucial to the development and accumulation of Korean science and

³¹ June, 1974. 11/J-0090/763.631FR, ROK Diplomatic Archives. Although in 1975 the negotiation with France came to be a trilateral agreement with the IAEA.

technology and emphasized the educational purposes of reprocessing facilities. In 1975, when concerned American diplomats visited Seoul to discuss the matter, the South Korean scientists, spearheaded by Minister Choi, contested American objection by arguing that it was nothing more than “necessary technical training.” The South Korean scientists unequivocally claimed that reprocessing facilities were not for building weapons but for advancing science in South Korea. Why, South Koreans implored, was America fussing over such a small reprocessing plant that it was almost a “toy?”³²

The scientists even used their American colleagues to speak for them. At the request of Minister Choi, the Science Advisor of the United States government wrote a letter to Prime Minister Kim Jong-Pil to emphasize the importance of investing heavily in science and technology. It was not just fields that were directly applicable to industry but also the overall educational system of Korea that needed a long-term aid.³³

The effort to boost South Korea’s indigenous ability by expanding the freedom of South Korean scientists could be seen in many other negotiations. In the negotiation with the IAEA to introduce safeguard measures to Korean nuclear activities, the MOST tried hard to eliminate as many restrictions on its nuclear industry. As a precondition for the nuclear collaboration with France, the negotiations to discuss the IAEA safeguard agreement started in May 1975; one negotiation was to introduce a trilateral agreement between France and the IAEA, and the other was to introduce the IAEA safeguard measures as a part of ratifying the NPT. Article III of the NPT required non-nuclear-weapons member states to accept IAEA safeguard measures to enable

³² U.S. Embassy Seoul Telegram 6850 to State Department, “ROK Nuclear Fuel Reprocessing Plans,” 3 September 1975, Secret. Sneider records, box 2, Amb. Sneider Telegrams-August-December 1975.

³³ Letter from Edward E. David, Jr. Science Adviser of the White House to Choi Hyung-Sup. Box 19 File 3. Choi Hyung-Sup Archive; The Korean Research Institute of Science, Technology and Civilization; Chonbuk National University.

the agency to verify if it abides by the obligation of the NPT.³⁴ According to the reports written by the MOST, the South Korean representatives for the trilateral negotiations headed by the director of an atomic energy bureau at the MOST, Lee Byung Whie, tried to modify the standard IAEA agreement draft for a trilateral nuclear collaboration in order to have more autonomy. The MOST realized that some countries with advanced nuclear industry, such as EURATOM (European Atomic Energy Community) and Japan, were allowed to diverge from the “Standard Text” of the IAEA safeguard agreements. The Japanese government, for example, would be delegated to carry out inspections on nuclear materials and activities once the IAEA inspection system is in place.³⁵

Thus, the MOST wanted South Korea to be treated the same as much more nuclear-advanced countries, although it knew that it was less likely to happen. One of the issues was the inspection procedure; rather than being inspected by the IAEA inspectors, South Korea wanted to carry out inspections on their own and then report to the IAEA. Another issue was the declaration of imported fissile material; rather than notifying the IAEA before the importation, South Korea wanted to notify it afterward. The MOST reported to the MOFA that as the safeguard measures of the NPT were strengthened, South Korea should accept “the Standard Form” in principle but must try to modify Article III.³⁶ For the trilateral agreement negotiation, the MOST’s strategy was to try to negotiate to have a reasonable amount of time to verify the arrived nuclear materials

³⁴ Copyright 2000, Department for Disarmament Affairs, United Nations.

<http://www.un.org/en/conf/npt/2005/npttreaty.html>

³⁵ Telegram from ambassador in Japan to the Minister of Foreign Affairs. February 13, 1975. File 12, Microfilm J-0096, Classification 741.61, Treaty on Nonproliferation of nuclear weapons between Korea and IAEA (1975) Diplomatic Archives of the Republic of Korea (hereafter 12/J-0096/741.61)

³⁶ Memo from the MOST. February 13, 1975. File 12, Microfilm J-0096, Classification 741.61, Treaty on Nonproliferation of nuclear weapons between Korea and IAEA (1975) Diplomatic Archives of the Republic of Korea (hereafter 12/J-0096/741.61)

and to try to negotiate to eliminate the possibility of unannounced inspections.³⁷ In the end, however, South Korea was not able to insert its wishes into the trilateral agreement. In the negotiation held in Vienna from 22 to 23 in May 1975, South Korea pledged not to build the same type of reprocessing plant that uses the same technology that Saint-Gobain Techniques Nouvelles is contracted to provide “without prior negotiation.”³⁸

Thus, the technocrats used the different expectations about the practical results of this transfer of nuclear technology as a strategy to gain full support from all branches of the South Korean government. Having nuclear reprocessing technology meant different results for different groups. The most powerful factions in the government, President Park and the Korean Central Intelligence Agency (KCIA), expected to acquire independent nuclear deterrent capability.³⁹ But for economic officials who prioritized the economic development of South Korea over security, such as the Economic Planning Bureau (EPB), the nuclear reprocessing technology meant an important step toward energy self-sufficiency. On a slightly different note, the diplomats in the Ministry of Foreign Affairs wanted to accord to international protocols of nuclear nonproliferation, wishing to mark South Korea as a responsible international citizen in the global community.

³⁷ Summary of the meeting on Korea-France-IAEA agreement. May 14, 1975. File 13, MF J-0096, Classification 741.57, Agreement between IAEA and Republic of Korea and France on the Application of Safeguard Measures (1975.9.22), Diplomatic Archives of the Republic of Korea (hereafter 13/J-0096/741.57, ROK Diplomatic Archives).

³⁸ Report on the Conclusion of Three-Party Negotiation in May 26, 1975. File 13, MF J-0096, Classification 741.57, Agreement between IAEA and Republic of Korea and France on the Application of Safeguard Measures (1975.9.22), Diplomatic Archives of the Republic of Korea (hereafter 13/J-0096/741.57, ROK Diplomatic Archives).

³⁹ KCIA was a primary instrument of Park Chung-hee to monitor and suppress internal dissent. It was the centerpiece of Park's power apparatus, which was established by law only twenty-four days after the May 16 coup of 1961. According to Byung-kook Kim it was "more of a Russian KGB than an American CIA" in that it placed domestic as well as foreign intelligence within its legal jurisdiction and it was endowed with a criminal investigatory power, and it was empowered so that it could coordinate and supervise state ministries including armed forces. Byung-kook Kim, "The Labyrinth of Solitude: Park and the Exercise of Presidential Power" 140-167 in Byung-Kook Kim and Ezra F. Vogel, eds., *The Park Chung Hee Era* (Harvard University Press, 2011), 143.

Technocratic Persuasion

How did the Korean scientists pursue the negotiation to acquire the nuclear reprocessing technology? While there was a government-wide consensus on the importance of this French negotiation, the technocratic desires and motivations differed from and, at times, were at odds with the desires of the other ministries and the President. The scientists had different motives that would not convince other politicians, and the scientists were not convinced that the wishes of the politicians would ever come true. The technocrats, owning the most extensive knowledge of the technical and practical implications of this technology, represented and advocated all of these expressed motives, even the ones that struck them as impractical and preposterous, such as building nuclear bombs, to gain as much support as it could from its own government. In order to convince other people to invest, the technocrats were intentionally ambiguous about the exact meaning of the reprocessing technology.

The scientists were skeptical about the practicality of the military implications of building nuclear bombs. While the Cold War realpolitik greatly preoccupied South Korean politicians, the scientists did not view the ultimate usefulness of the nuclear reprocessing technology project to be that of war. Simply put, in 1972, when they initiated the project that would be suspected by Americans, South Korean scientists believed that given the level of their scientific knowledge and infrastructure, building a nuclear bomb would take a very long time.

Dr. Jae-Yang Ju, the director of the KEARI, said that “the condition of South Korea had not reached” there yet.⁴⁰ These attitudes of indifference to military means were quite consistent with their initial plan, where the scientists approached an American institution, the Argonne National

⁴⁰ Dr. Ju was a deputy director of Korea Atomic Energy Research Institute (KAERI), a governmental research organization which was in partnership with the Ministry of Science.

Laboratory, to ask for collaboration on the development of the nuclear industry because they did not expect the U.S. to be suspicious.

The technocrats, however, did not deny the possibility because military goals would make people enthusiastic about the project. They went along with President Park because it was not easy to oppose the will of a dictator. Moreover, it was advantageous for the technocrats to fool the politicians into backing long-term goals that they would not have otherwise. “Do you know how hard it is to get government subsidy?” Dr. Jae-yang Ju questioned in an interview. The scientists took advantage of the differences in the level of knowledge; other people in the government did not know what they knew. The South Korean technocrats wanted to diffuse any possibility of inter-governmental conflicts because the real battle for them would take place in the international science community.

For the reasons articulated above, the scientists made a conscious effort to broker this deal with France. The role of the scientists was instrumental in initiating, concretizing, and lobbying for collaboration with France in pursuit of nuclear reprocessing technology.

The scientists, therefore, were the main advocates of the reprocessing technology negotiation and used the strategy of “different dreams in one bed” to promote the benefit of the deal. It addresses how the Korean nuclear scientists framed the transfer of nuclear processing technology, sometimes as a national security project and other times as an economic development project, implicitly taking advantage of the fact that nuclear technology contained multiple potentials and thus embedded different expectations. Recalling his experiences in working on a number of national projects as a nuclear scientist, Dr. Jae-Yang Ju described the relationship between the South Korean government and its scientific community as “different dreams in one bed.” Dr. Ju was in charge of the development of atomic energy by importing technology from European

countries when the scientists were trying to arrange a collaboration with France. Very often, the scientists working for the governmental agencies would use rhetoric to sell a scientific project that had multiple purposes.

Although the scientists were in a key position of South Korean nuclear research institutes, they were mistrustful of the viability of the atomic weapons project in 1973, but it did not stop them from keeping their doubt to themselves regarding military application if it meant that the government would fund this extremely expensive project.

It did not hurt that the most South Korean officials, including the dictator, were not knowledgeable about nuclear physics. According to Dr. Ju, the scientists working for the Korean government would take advantage of the fact that many governmental officials were ignorant about nuclear physics and reactor technology and would mislead the state to invest in a scientific project that would take a long time to yield any practical result.⁴¹

Conclusion: What Was That Something?

It was true that security concern was never far from the minds of many South Koreans, but the transfer of nuclear technology symbolized more than that. For the scientists of the Ministry of Science and Technology in particular, the plan represented an alternative version of modernization in response to or in opposition to what was laid out by America. The concepts of modernity and security within South Korea had been greatly influenced by the U.S. and the

⁴¹ An excerpt from a TV Interview, MBC in Korea. Quoted from Kim, *Korean Atomic Technology System*, 241. "Well, I see this [the national development of atomic energy] as a kind of "two dreams in one bed" situation. From the perspective of our institute, we should have independent technology for industrial reasons. But that costs a lot of money. [Therefore,] if some people wished to make use of the by-product [of nuclear energy] for the military purposes, I would not go out of my way to object to it. Why? [Do you know] how hard to get government subsidy? But I think we should take partial responsibility for the continued rumor [about nuclear bomb]. ... It's thirty years ago, so I can say this: when I was appointed [to serve the ministry], we had no capability. It would have taken ten years to accumulate necessary technology independently, and then to build bombs is another story. In 1973, I thought that it [building nuclear bomb] would not be possible. It would have taken more than ten years, and in this country, if we say something would take more than ten years, the government would not give support it. They don't even know if they would be in their current positions by that time."

international context of the Cold War in East Asia. The South Korean technocrats, however, imagined different versions of modernity and security in reprocessing technology, such as the prestige within the international scientific community.

Moreover, this was the first time that the Koreans began to see that a new international order was beginning to emerge in the 1970s: an international non-proliferation regime that pitted developed nations against developing nations. It was an international order that cut across the ideological line of the Cold War because the United States and the Soviet Union belonged to the same bracket. Because the South Koreans faced such strong suspicion from the United States and Canada, they decided to participate in international measures to prevent nuclear proliferation, such as the NPT and the IAEA. Placed under these international nuclear safeguard measures and incorporated into the global nuclear order, the Korean bureaucrats began to keenly observe the international order and their place within it to find out how much room for maneuver they had in order to pursue this path of nuclear technology development.

What is clear from observing the negotiations with France is that the South Korean technocrats believed that their role was the “bed” in which enabled other dreams to exist in the first place. This paper, however, argues that theirs is also a set of beliefs, another dream, so to speak. Their beliefs are that scientific advancements and rigors are apolitical, neutral, and self-evident goals when they have political and contentious ramifications that shape the way the world is designed. This claim on the objective truth of the world resembles the way cultural hegemony operates as the power that rules the playing field and neutralizes possibilities of resistance by transforming their philosophy to common sense.⁴²

⁴² T. J. Jackson Lears, “The Concept of Cultural Hegemony: Problems and Possibilities,” *The American Historical Review* 90, no. 3 (1985): 567–93.

Rather than illustrating the American intention in international development, this paper shows that the American interpretation of the Korean developmental visions fell short of what they really were: a polyphony. In terms of the Korean developmental plans, politicians and government officials often did not understand the ramifications of highly sophisticated technology. Within that vacuum, the technocrats who have the knowledge and expertise plus the authority intended to advance something else.