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Leveraging Uneven Cooperation:  
Socialist Assistance and the Rise of North Korea, 1945-1965

A dissertation submitted in partial satisfaction of the  
requirements for the degree Doctor of Philosophy  
in Asian Languages and Cultures

by

Donghyun Woo

2022

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ABSTRACT OF THE DISSERTATION

Leveraging Uneven Cooperation:

Socialist Assistance and the Rise of North Korea, 1945-1965

by

Donghyun Woo

Doctor of Philosophy in Asian Languages and Cultures

University of California, Los Angeles, 2022

Professor Namhee Lee, Chair

How did economic burden and techno-science shape the politics of *Juche*? This dissertation examines the transformation of exchanges between the Democratic People’s Republic of Korea (North Korea) and the Soviet-led socialist bloc, arguing that this structural change from “selfless” assistance to equal cooperation accelerated the realization of *Juche* (meaning self-reliance) in North Korea from 1945 to 1965. Based on a range of North Korean publications and Russian archival documents, this dissertation analyzes how intra-bloc flows of experts and knowledge for mass industrial production steered North Korea’s quest for uplifting the nation through “North Korean” techno-science. Revising politics-centered, nation-centric accounts of North Korean history, this dissertation shows how the global pursuit of a strong economy, changing geopolitical situations, increasing costs of “socialist cooperation,” and the short-term success of homegrown technologies coincided to propel North Korean planners to enact *Juche* as a mode of development and lasting national identity. Offering an original narrative of North Korea’s exploitation of socialist assistance, this dissertation provides a useful lens to better understand the origins of North Korea’s diplomacy and techno-scientific policy-making, tracing the roots of its technological confidence to defy the U.S.-led global order.

The dissertation of Donghyun Woo is approved.

Theodore M. Porter

George E. Dutton

Kiril Tomoff

Namhee Lee, Committee Chair

University of California, Los Angeles

2022

This dissertation is dedicated to my family in Seoul and Saint-Petersburg.

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## Introduction

In a reception arranged for the Soviet trade delegation in February 28, 1964, Vasilii P. Moskovskii, the Soviet ambassador to the Democratic People's Republic of Korea (DPRK, or North Korea), had an unusual chance to talk with Ri Il-kyōng, North Korean Minister of Trade. Moskovskii had never worked in diplomacy before he came to North Korea in June 1962 when the Sino-Soviet split was increasingly widening. Compared to his predecessors in the 1950s, the scope of Moskovskii's diplomatic moves inside the country was substantially narrowed, as indicated by a fact that no exchanges of high-level delegations between North Korea and the Soviet Union were made for two years starting in the fall of 1962. North Korea's open support of the People's Republic of China (PRC) along with its distancing from Nikita S. Khrushchev, the Soviet leader, was increasingly apparent. Under these circumstances, Moskovskii's communication with North Korean officials was neither comfortable nor "fraternal."

While Ri Il-kyōng was quietly talking about the country's chronic problems such as the poor economy and weak solvency, or capacity to repay, with the Soviet ambassador in fluent Russian, Kye Ŭng-t'ae, North Korean Vice Minister of Trade, an infamous figure for his "pugnacity," intervened, "waging an attack" on the ambassador about trade issues. In the form of an "ultimatum," Kye asked bluntly why the Soviet Union did not "add" two-thousand tons of cotton to a "small socialist country [North Korea]." Denouncing bilateral trade between the two countries, Kye showed discourtesy despite the fact that the reception was to celebrate the trade agreement signed by both countries. Ri took time to stop Kye's accusations of the "speculative" and "non-socialist" natures of the Soviet Union's trade with North Korea. After Kye left, Moskovskii told Ri that he could "not understand at all" why some Korean comrades, like Kye, were openly aggressive, saying things like "[the Soviets are] stuffing their pockets"

and “[the Soviets are] being speculative.” The Soviet ambassador asked what traded goods had caused such troubles. However, the Trade Minister could not share his opinion freely, only saying that he lacked the relevant information.<sup>1</sup>

While we do not know much about Ri Il-kyōng’s fate after his dismissal two months later,<sup>2</sup> his inability to answer captures the dilemma faced by North Korean planners in this period of the “Korean miracle,” termed by an English economist who saw North Korea’s rapid industrial growth in his own eyes,<sup>3</sup> about how to deal with their Soviet interlocutors. Given that North Korea tried to emulate the Soviet Union in constructing socialism for more than a decade since 1945, and that the Soviet Union gave a tremendous amount of help to North Korea throughout the 1950s, some North Korean officials including Ri Il-kyōng could not understand their leadership’s change of attitude toward the Soviet Union by early 1963. Why did Ri Il-kyōng, previously in charge of educating North Korea’s technical cadres on the model of the Soviet Union, shy away from answering Moskovskii’s questions?

This dissertation argues that the idea of *Juche* (self-reliance, *chuch’e*) in North Korea was not only a necessary outgrowth of historical circumstances that made alternatives

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<sup>1</sup> “Vypiska,” RGASPI, f. 495, op. 228, d. 824, ll. 3-4.

<sup>2</sup> “Khronika,” RGASPI, f. 495, op. 228, d. 824, l. 5. Based on a telegram of the Hungarian Embassy in the DPRK, historian Balázs Szalontai argues that Ri Il-kyōng was arrested in April 1964 and then hanged. The pretext was his failure to sell “industrial products of poor quality instead of non-ferrous metals” to the Soviet Union. Balázs Szalontai, *Kim Il Sung in the Khrushchev Era: Soviet-DPRK Relations and the Roots of North Korean Despotism, 1953-1964* (Stanford: Stanford University Press, 2005), p. 202.

<sup>3</sup> Joan Robinson, “Korean Miracle,” *Monthly Review* 16:9 (January 1965), pp. 541-549.

unpalatable, but also made possible by assistance from the Soviet-led socialist bloc, showing that existing politics-centered, nation-centric interpretations of the origins of *Juche* are both insufficient and inadequate.<sup>4</sup> That is, *Juche*, despite all its ideological rhetoric, began as a pragmatic response of North Korean leadership to a new reality of the early 1960s, based on the country's high growth rate in industrial production, alleged techno-scientific "success," and growing financial inability to sustain its engagement with the socialist bloc from 1945 to 1965.<sup>5</sup> In order to substantiate my argument, I offer accounts of the economic and techno-scientific origins of *Juche* by examining the history of North Korea's interactions with the socialist bloc using the notions of assistance, techno-science, and economic burden.

To trace North Korea's historical trajectory, it is essential to understand what *Juche* means. By definition, the Korean word *Juche* means the subject, as opposed to the object. In the context of North Korean history, *Juche* implies the human as the main agent, who rely upon one's [North Korea's] own strength to carry out the socialist revolution and the construction of socialism in North Korea.<sup>6</sup> As the state ideology of North Korea, the *Juche* idea (*Chuch'e*

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<sup>4</sup> I thank George Dutton for his thoughtful suggestions on how to frame these points.

<sup>5</sup> In this dissertation, the socialist bloc means a historical bloc of the countries that had in common socialism, party-state system, and planned economy during the Cold War period from 1945 to 1991. Historiographically, the terms such as the Soviet bloc, the Eastern bloc, the communist bloc, and the Second World can be interchangeably used to imply the socialist bloc.

<sup>6</sup> Ri Sang-chun and Chŏn pyŏng-sik eds., *Chosŏn hyŏngmyŏng suhaeng esŏ Kim Il-sŏng tongji e ūihan maksŭ-reninjuŭi ūi ch'angjojŏk chŏgyong* [The Creative Application of Marxism-Leninism by Kim Il-sung in Carrying Out the Korean Revolution] (Pyongyang: Kwahagwŏn Ch'ulp'ansa, 1962), pp. 119-151.



*sasang*) was created by Kim Il-sung in the 1950s and the 1960s and later sharpened by his son Kim Jong-il in subsequent decades. Arguably, the most important event in the evolution of the *Juche* idea was Kim Il-sung's speech in 1965. In his speech delivered at the Ali Arham Academy of Social Sciences in Indonesia on April 14, 1965, Kim Il-sung outlined for the first time three fundamental principles that formed the *Juche* idea: political independence (*chaju*), economic self-reliance (*charip*), and military self-defense (*chawi*).<sup>7</sup> Afterwards, these key principles of the *Juche* idea served as the foundation for any variations of the country's state ideology, including Kimilsungism in the 1970s and the 1980s, Socialism of Our Style in the early 1990s, the Military-First Politics in the late 1990s and the 2000s, and Kimilsungism–Kimjongilism of the 2010s to the present.

Hence, *Juche* is usually understood as the master framework to explain North Korea's past and present. Inside North Korea, the *Juche* idea that was first presented by Kim Il-sung in 1955 and then enacted in the country's Socialist Constitution in 1972 still remains as the only legitimate state ideology. Outside the country, commentators and researchers attribute various aspects of North Korea to the politics of *Juche*, with an extensive focus on its nationalistic aspects.<sup>8</sup> Indeed, this dominant mode of understanding North Korea tends to reproduce a myth

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<sup>7</sup> Kim Il-sung, *Chosŏn minjujuŭi inmin konghwaguk esŏ ūi sahoejuŭi kŏnsŏl kwa namjosŏn hyŏngmyŏng e taehayŏ* [On Socialist Construction in the Democratic People's Republic of Korea and the South Korean Revolution] (Pyongyang: Chosŏn Rodongdang Ch'ulp'ansa, 1965), p. 33.

<sup>8</sup> Heonik Kwon and Byung-Ho Chung, *North Korea: Beyond Charismatic Politics* (Lanham: Rowman & Littlefield, 2012); Suk-Young Kim, *Illusive Utopia: Theater, Film, and Everyday Performance in North Korea* (Ann Arbor: University of Michigan Press, 2010); B. R. Myers, *North Korea's Juche Myth* (Busan: Sthele Press, 2015). For a meaningful exception, see Bruce Cumings, *North Korea: Another*

of the country as an exotic *Juche* country, simply emphasizing how incomprehensible and impenetrable it is by outside observers.<sup>9</sup> Unfortunately, this usual perception of North Korea by outside observers creates a vicious circle, in which biased assumptions lead to another set of redundant and unfounded presumptions, only exacerbated by the lack of reliable data about the country and its people.

North Korea's *Juche* reflected its leadership's self-confidence in the country's industrial capability, or capacity to constantly boost production, in the period from the second half of the 1950s to the early 1960s. North Korean planners termed this period the "era of a thousand-li horse" (*Ch'öllima sidae*), symbolizing the speed of the country's industrial development with the image of a legendary flying horse. One of the major turning points in the official narrative of North Korea's rise was in 1958, when its leadership underwent economic development through a mobilization campaign named the Thousand-li Horse Movement (THM). The THM urged the country's workers to increase labor productivity mainly by using untapped resources that were stored in factories or industrial enterprises and by innovating technology (*kisul hyöksin*).<sup>10</sup> The THM was reminiscent of socialist competition movements such as the Stakhanovite movement in late 1930s Stalinist Russia, or the Great Leap Forward in the PRC in the late 1950s. The THM resulted in numerous "achievements" in the country's

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*Country* (New York: New Press, 2004).

<sup>9</sup> Victor Cha, *The Impossible State: North Korea, Past and Future* (New York: Ecco, 2012).

<sup>10</sup> *Ch'öllima chagöppan undong* (Pyongyang: Chigöp Tongmaeng Ch'ulp'ansa, 1960); Lee Se-young, "Pukhan 'sahoejuüi' nodongja üi hyöngsöng kwa saengsanhyönjang üi pyönhwa (1945-1960)" [The Formation of 'Socialist' Workers and Changes in Production Sites in North Korea (1945-1960)] (in Korean) (PhD Diss., Yonsei University, 2020), p. 178.

industry and techno-science in the late 1950s and early 1960s, which North Korean leadership attributed solely to the guidance of the Workers' Party of Korea (WPK, or the Party) and Kim Il-sung.<sup>11</sup>

However, North Korea's official narrative of *Juche's* rise completely erases the memory of the socialist bloc's assistance that supplied North Korea with industrial infrastructure and access to "advanced" science and technology under the name of "cooperation" (*hyŏmnyŏk* or *hyŏpcho*; Rus. *sotrudnivhestvo*). Cooperation within the socialist bloc, or socialist cooperation, primarily meant a bilateral relationship through which human experts, goods, knowledge, and technical services were exchanged between two bloc countries.<sup>12</sup> The contents of socialist cooperation— what was exchanged—were called "assistance" (*wŏncho* or *pangcho*; Rus. *pomoshch'*), which referred to a broad range of materials the North Korean leadership saw as essential to build a socialist country on the Korean Peninsula. For example, Kim Il-sung used the term "great assistance" (*k'ŏdaran wŏnjo*) in March 1949 to imply not

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<sup>11</sup> Yun Myŏng-su, *Chosŏn kwahakkisul paljŏnsa (Haebang hup'yŏn 1)* (Pyongyang: Kwahak Paekkwajŏn Chonghap Ch'ulp'ansa, 1994), pp. 124-167; 179-253. For an institutional history of North Korea's science and technology in the period of 1945 and the 1970s, see Kang Ho-che, *Pukhan kwahakkisul hyŏngsŏngsa I* (Seoul: Sŏnin, 2007) and Byun Hak-moon, "Pukhan ūi kisul hyŏngmyŏngnon: 1960-70nyŏndae sasang hyŏngmyŏng kwa kisul hyŏngmyŏng ūi pyŏnghaeng" [The Technical Revolution Theory of North Korea: Simultaneous Pursuit of the Ideological and Technical Revolutions in the 1960s and 1970s] (in Korean) (PhD Diss., Seoul National University, 2015).

<sup>12</sup> For the Soviet Union's place in the socialist bloc in the 1950s, see Austin Jersild, "The Soviet State as Imperial Scavenger: "Catch Up and Surpass" in the Transnational Socialist Bloc, 1950–1960," *American Historical Review* Vol. 116, No. 1 (February 2011), pp. 109-132.

only the Soviet Union's all-round support for the political legitimacy of the North Korean regime, but also North Korea's access to the Soviet-led socialist market.<sup>13</sup> Assistance from the socialist bloc, or socialist assistance, comprised free aid (*musang wŏnjo*) and materials North Korea had to buy.

This dissertation characterizes cooperation between North Korea and the socialist bloc in the 1940s and the 1950s as “uneven cooperation” in which the adjective “uneven” is defined by North Korea's unique position as the receiving end. Among the elements of this ‘uneven’ relationship included the following: First, the Soviet Union and other bloc countries gave an enormous amount of free aid to North Korea throughout the 1950s, which North Korea did not have to pay back. No other socialist country received such a degree of economic help during the entire period of the Cold War.<sup>14</sup> Second, North Korea was free of considerations for timely repayment for the assistance. North Korea could request an extension of the payment deadline for technical assistance purchased from the Soviet Union. In general, the Soviet Union generously agreed with those extension requests, though delayed payment from North Korea decreased the scope of some technological cooperation between the two countries.<sup>15</sup> Third,

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<sup>13</sup> Kim Il-sung, *Choguk ūi t'ongil tongnip kwa minjuhwa rŭl wihayŏ* (Pyongyang: Kungnip Inmin Ch'ulp'ansa, 1949), p. 335.

<sup>14</sup> M. Suloev, “Spravki (November 5, 1964),” RGANI, f. 5, op. 49, d. 907, ll. 119-120; 125-126; 129.

<sup>15</sup> For example, North Korea's pursue of a nuclear power plant from the Soviet Union in the period from the 1960s to the 1980s was constantly discouraged because of the issue of delayed payment of other cooperation projects. See Balázs Szalontai and Sergey Radchenko, “North Korea's Efforts to Acquire Nuclear Technology and Nuclear Weapons: Evidence from Russian and Hungarian Archives,” *Cold War International History Project Working Paper #53* (August 2006).

North Korea was free from conceding state sovereignty, including hosting occupation forces as a price for cooperation. Especially after 1958, when the Chinese People's Voluntary Army returned home from North Korea, the country never sought any cooperation that might impinge on what its leadership saw as its state sovereignty. Fourth, although reciprocity was understood to be operating in socialist cooperation in principle, in reality the Soviet Union made numerous concessions, usually in favor of North Korea. For example, the Soviet Union kept a "friendship price," a price higher than the world market price, for North Korean goods such as mineral ores and construction materials, which allowed North Korea's increased revenue from international trade. Another example is exchanging technical documents such as projects, schemes, and drawings that were deemed important by North Korean planners. The Soviet Union sent more than 250 technical documents to Pyongyang in 1960, whereas North Korea sent only six such documents to Moscow in the same year. The "uneven" nature of North Korea's cooperation with the socialist bloc in the 1940s and the 1950s becomes clearer when compared to similar interactions between the Republic of Korea (South Korea) and the United States (U.S.) under the name of cooperation in the same period. In sum, North Korea successfully exerted leverage through "uneven cooperation" to create a solid basis for industrial production by the end of the 1950s.

Another crucial point to understand the rise of *Juche* is that "uneven cooperation" evolved into more equal, business-like interactions, which Kim Il-sung interpreted as a form of neo-imperialism under the guise of "revisionism" which regarded North Korea only as a base of natural resources for the Soviet economy. In the eyes of North Korean planners, Khrushchev's "revisionism" was not only helping the U.S.-led capitalist bloc by attacking the PRC, but also threatening North Korea's quest for a strong economy by reducing technical assistance. Hence, by the early 1960s when North Korea's industrial expansion was achieved

based on the ideology of self-reliance, its leadership concluded that the country's engagement with the Soviet-led socialist bloc could be curtailed. North Korea's vulnerable solvency, or capacity to pay for technical assistance by the Soviet Union, existed behind this decision. Consequently, North Korea chose to be less integrated with the socialist bloc starting in 1963 with a characteristic message that the country had stood and would stand self-reliantly under the leadership of Kim Il-sung. However, North Korea privately maintained its limited contact with its Second World allies to acquire advanced techno-science, which was cheaper than directly engaging with First World countries for the same purpose.

Examining this history has two important historiographical implications. First, it examines the genesis of what was later officially termed *Juche* with a focus on its economic and techno-scientific contexts that have been understudied. Second, the same history offers a new understanding of North Korea in a crucial moment where the East-West conflict intersected with the dawning struggle between the Global North and Global South in the early 1960s. It was in the same period when North Korea as a source of a perpetual regional tension that would threaten the U.S.-led global order in the post-Cold War period embarked on its project of building an autarky in earnest. However, scholars have primarily viewed this history as a simple manifestation of "nationalism" of North Korean leadership, overlooking two of the most important reasons—economic burden and confidence on the country's capability in science and technology—for Kim Il-sung's ultimate choice of *Juche*.

The foremost task of this dissertation is to provide a corrective to the dominant mode of understanding North Korea as an exotic, ideology-driven *Juche* country by tracing the economic as well as techno-scientific origins of *Juche*'s rise, drawing upon a wide range of archival documents and relevant publications. Contributing to a growing body of scholarship that expands the scope of the multilateral, multilayered exchanges within the socialist bloc in

the Cold War period,<sup>16</sup> I elucidate how North Korea's engagement with the socialist bloc led to the formulation of *Juche*. Revisiting intra-bloc relations while being mindful of both the capability and limits of socialist superpowers such as the Soviet Union and the PRC offers a timely opportunity to debunk historical myths that were co-produced by U.S. policy-makers, intelligence services, and academe.<sup>17</sup> A pioneering interpretation of the Soviet economy by historian Oscar Sanchez-Sibony is a case in point; he analyzes the Soviet Union's ardent but marginal integration into the world economy through its aid policy to the Third World.<sup>18</sup>

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<sup>16</sup> For some of the works that this dissertation resonates with, see Thomas P. Bernstein and Hua-Yu Li eds., *China Learns from the Soviet Union, 1949–Present* (Lanham: Lexington Books, 2010); Patryk Babiracki and Kenyon Zimmer eds., *Cold War Crossings: International Travel and Exchange across the Soviet Bloc, 1940s-1960s* (Arlington: Texas A&M University Press, 2014); Pál Germuska, *Unified Military Industries of the Soviet Bloc: Hungary and the Division of Labor in Military Production* (Lanham: Lexington Books, 2015); Patryk Babiracki and Austin Jersild eds., *Socialist Internationalism in the Cold War Exploring the Second World* (Cham: Palgrave Macmillan, 2016); Elidor Mëhilli, *From Stalin to Mao: Albania and the Socialist World* (Ithaca: Cornell University Press, 2017); Philip E. Muehlenbeck and Natalia Telepneva eds., *Warsaw Pact Intervention in the Third World: Aid and Influence in the Cold War* (London and New York: I.B. Tauris, 2018); James Mark, Artemy M. Kalinovsky, and Steffi Marung eds., *Alternative Globalizations: Eastern Europe and the Postcolonial World* (Bloomington: Indiana University Press, 2020).

<sup>17</sup> David C. Engerman, *Modernization from the Other Shore: American Intellectuals and the Romance of Russian Development* (Cambridge: Harvard University Press, 2003); *Know Your Enemy: The Rise and Fall of America's Soviet Experts* (New York: Oxford University Press, 2009).

<sup>18</sup> Oscar Sanchez-Sibony, *Red Globalization: The Political Economy of the Soviet Cold War from Stalin to Khrushchev* (New York: Cambridge University Press, 2014). For an authoritative account on the

According to Sanchez-Sibony, the Soviet Union, despite its status as a leader of the socialist bloc, was simply one of the middle-income countries in the Cold War, trying to join in the world economy dominated by the U.S and a few Western countries. That is, the Soviet Union, North Korea's major patron, "felt the force of the capitalist world economy in their bones."<sup>19</sup> Kim Il-sung was no exception. It is telling that when Kim Il-sung visited Stalin to discuss the invasion of South Korea in 1949, the architect of *Juche* expressed his wish to get a loan in U.S. dollars, not in Soviet rubles,<sup>20</sup> showing the power of the American currency in the world economy. For better or worse, North Korean leaders, like their counterparts in the Second and Third Worlds,<sup>21</sup> had to deal with the acute pressure of the world economy. Thus, I reconstruct several layers of economic realities to situate North Korea's developmental goals: the limited export chances under a series of U.S.-led sanctions starting from 1951, reliance upon the Soviet Union as the main patron, whose economy was considerably weaker than the U.S., and Kim Il-

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limited Soviet power in its trade with the Eastern European countries, see Randall W. Stone, *Satellites and Commissars: Strategy and Conflict in the Politics of Soviet-Bloc Trade* (Princeton: Princeton University Press, 2002).

<sup>19</sup> Oscar Sanchez-Sibony, "The Cold War in the Margins of Capital: The Soviet Union's Introduction to the Decolonized World, 1955–1961," in James Mark, Artemy Kalinovsky, and Steffi Marung eds., *Alternative Globalizations*, pp. 59-79.

<sup>20</sup> Eventually, Stalin offered loans to Kim Il-sung in rubles, revealing his optimistic estimation that one U.S. dollar would be five rubles before long. "Beseda (March 5, 1949)," APRF, f. 45, op. 1, d. 346, ll. 13-23.

<sup>21</sup> Jeremy Friedman, *Ripe for Revolution: Building Socialism in the Third World* (Cambridge: Harvard University Press, 2022).



sung's postcolonial penchant for a self-reliant economy. Consequently, these contexts defined, with varying degrees, the contours of North Korea's state policy, which overturns mythical and exotic images of the country as an ideology-driven *Juche* monolith.

It is also important to understand that there was no comprehensive road map for enacting *Juche* from the beginning of the North Korean regime in 1945. A teleological view does more harm than good, as it makes historical research merely a search for what went *wrong*. On the contrary, *Juche* as a mode of development, a combination of ideas, strategies, and practices that were expected to bring progress to the country's economy, took its form in the late 1950s and early 1960s. North Korea's reliance upon "politico-moral stimulation" (*chǒngch'idodǒkchǒk chagŭk*), a primary means to make the people work for the common good in a society and to mobilize the people's bodies and minds, took place as its leadership weighed decisions between the goal of sustaining "self-reliant" industrial growth and the price of its participation in the socialist bloc. Hence, proper attention should be paid to policy that North Korean leaders considered to make the nation an "advanced" socialist state.

The ways to realize this developmentalist project included a set of ideas and practices that were deeply influenced by what later Western scholars broadly term Stalinism,<sup>22</sup> which North Korea later formulated as guidelines for how to carry out the socialist revolution, as in Kim Il-sung's "instructions for technological, cultural, and ideological revolutions."<sup>23</sup> Thus, existing scholarship on the reality and evolution of Stalinism provide useful references to examine a parallel case in the development of the economy and techno-science in North

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<sup>22</sup> Sheila Fitzpatrick ed., *Stalinism: New Directions* (London: Routledge, 2000).

<sup>23</sup> Kim Il-sung, *Uri nara sahoejuŭi nongch'on munje e kwan han t'eje* [A Thesis on Socialist Agricultural Problems of Our Country] (Pyongyang: Chosŏn Rodongdang Ch'ulp'ansa, 1964).

Korea.<sup>24</sup> For example, while the Soviet Union tried to imitate the “more advanced capitalist West” for its technical know-how and capital equipment, as the late historian Robert W. Davies pointed out, its “urgent need for ‘economic and technical independence’ was never forgotten.”<sup>25</sup> It meant that Soviet leadership strived to minimize the country’s economic and technological dependence on the West. This “need for independence” from outside powers was embedded in the agenda of post-war socialist regimes such as North Korea, the PRC, and Vietnam.<sup>26</sup>

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<sup>24</sup> For a political perspective, see J. Arch Getty, *Practicing Stalinism: Bolsheviks, Boyars, and the Persistence of Tradition* (New Haven: Yale University Press, 2013); Sheila Fitzpatrick, *On Stalin's Team: The Years of Living Dangerously in Soviet Politics* (Princeton: Princeton University Press, 2015). For a social perspective, see Donald Filtzer, *Soviet Workers and Late Stalinism: Labour and the Restoration of the Stalinist System after World War II* (Cambridge: Cambridge University Press, 2002); Jochen Hellbeck, *Revolution on My Mind: Writing a Diary Under Stalin* (Cambridge: Harvard University Press, 2006). For an economic perspective, see Julie Hessler, *A Social History of Soviet Trade: Trade Policy, Retail Practices, and Consumption, 1917–1953* (Princeton: Princeton University Press, 2004). For a cultural perspective, see Kiril Tomoff, *Creative Union: The Professional Organization of Soviet Composers, 1939–1953* (Ithaca: Cornell University Press, 2006); Matthew Lenoe, *Closer to the Masses: Stalinist Culture, Social Revolution, and Soviet Newspapers* (Cambridge: Harvard University Press, 2004); Ethan Pollock, *Stalin and the Soviet Science Wars* (Princeton: Princeton University Press, 2008).

<sup>25</sup> Robert W. Davies, *The Industrialisation of Soviet Russia Volume 4: Crisis and Progress in the Soviet Economy, 1931-1933* (Basingstoke and London: Macmillan Press, 1996), pp. 490-499; “The ‘Modernisation’ of the Soviet Economy in the Inter-War Years” in Markku Kangaspuro and Jeremy Smith eds., *Modernization in Russia since 1900* (Helsinki: Finnish Literature Society, 2006), pp. 71-83.

<sup>26</sup> Hua-Yu Li, *Mao and the Economic Stalinization of China, 1948-1953* (Lanham: Rowman and

Also, the Soviet's combination of economic dirigisme, or state control of economic matters, and industrial-military buildup through exploiting its "backyards"—vast lands in its non-European areas—in the 1930s offers a valuable point of comparative reference for Kim Il-sung's choices in the early 1960.<sup>27</sup> North Korea had no such hinterlands, which explains Kim Il-sung's initial hopes in the assistance provided for free in the 1950s. Later on, North Korea's growing financial inability to maintain the scale of such cooperation drove its leadership to look at the North Korean mass (*kunjung*) as a source to develop and innovate the country's industrial production.

To trace the origins of *Juche*, scholars in English-language academia have largely focused on constructing specific images of the North Korean regime displayed to outside observers—autarkic, nationalistic, totalitarian, and exploitative.<sup>28</sup> Although this prevalent,

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Littlefield, 2006); Tuong Vu, *Vietnam's Communist Revolution: The Power and Limits of Ideology* (Cambridge: Cambridge University Press, 2017).

<sup>27</sup> Stefan J. Link, *Forging Global Fordism: Nazi Germany, Soviet Russia, and the Contest Over the Industrial Order* (Princeton: Princeton University Press, 2020).

<sup>28</sup> Cheehyung H. Kim, *Heroes and Toilers: Work as Life in Postwar North Korea, 1953-1961* (New York: Columbia University Press, 2018); Jae-Jung Suh ed., *Origins of North Korea's Juche: Colonialism, War, and Development* (New York: Lexington Books, 2013); Andrei Lankov, *Crisis in North Korea: The Failure of De-Stalinization, 1956* (Honolulu: University of Hawaii Press, 2005); Balázs Szalontai, *Kim Il Sung in the Khrushchev Era*; Nobuo Shimotomai, "Kim Il Sung's Balancing Act between Moscow and Beijing, 1956-1972" in Tsuyoshi Hasegawa ed., *The Cold War in East Asia 1945-1991* (Stanford: Stanford University Press, 2011), pp. 122-151; James F. Person, "Solidarity and Self-Reliance: The Antinomies of North Korean Foreign Policy and *Juche* Thought, 1953-1967" (PhD

politics-centered view offers useful accounts to understand socio-political histories of North Korea, its limitations outweigh its analytical advantages. For one, many scholarly works under this politics-centered view share a simple assumption that North Korea's "liberation" from external influence—Imperial Japan in 1945, or the Soviet Union and the PRC in 1956—lifted obstacles for Kim Il-sung to translate *Juche* into reality. Extensive attention was given to the August Plenum of 1956, when Kim Il-sung's few opponents were defeated in domestic party-politics. Scholars view this event as the final blow to the outside powers' attempts to intervene in North Korean domestic affairs.<sup>29</sup> Surprisingly, scholars rarely examine other factors such as economy and techno-science to explain the history of North Korea in the 1950s,<sup>30</sup> which runs the risk of understanding the evolution of North Korea and *Juche* only from the perspective of politics, both domestic and international. I find it much more productive to shift our perspective to the different contexts that North Korea dealt with in its quest for becoming a robust industrial power.

As a useful alternative to the aforementioned politics-centered view, I reinterpret the

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Diss., The George Washington University, 2013).

<sup>29</sup> For a brief literature review of this topic, see Cho Su-ryong, "Chŏnhu Pukhan ūi sahoejuŭi ihaeng kwa 'charyŏkkaengsaeng' kyŏngje ūi hyŏngsŏng" [Jaryeokgaengsaeng Economy: North Korea's Socialist Transition and Its Formation in 1953-63] (in Korean) (PhD Diss., Kyung Hee University, 2018), pp. 7-8.

<sup>30</sup> For a few exceptions, see Andre Schmid, "Historicizing North Korea: State Socialism, Population Mobility, and Cold War Historiography," *The American Historical Review* 123:2 (April 2018), pp. 439-462; Avram A. Agov, "North Korea in the Socialist World: Integration and Divergence, 1945-1970. The Crossroads of Politics and Economic" (PhD Diss., The University of British Columbia, 2010).

rise of *Juche* as the historical amalgamation of North Korea's pursuit of a strong industrial economy, the country's weak economic capability, and cooperation with the Soviet-led socialist bloc that I characterize as uneven. These topics together have not been previously investigated. One of the most important issues that I explore is how North Korean leadership tried to address various economic issues that were related to industrial production while fully committing to the construction of socialism. For North Korea in the 1940s and the 1950s, the only accessible source of securing such fruits of modernity—"advanced" science and technology—was its cooperation with the socialist bloc. North Korean planners especially placed high hopes on the Soviet Union's science and technology transferred to North Korea mainly through the North Korea-Soviet Committee for Techno-Scientific Cooperation (KSCTSC) starting in 1956. In addition to the KSCTSC, the North Korean government continuously requested its Soviet counterpart dispatch engineers, scientists, and experts to develop the country's industrial economy and techno-science during the entire period of the Cold War. I term this techno-scientific cooperation among the bloc countries, which was usually conducted through bilateral interactions between two bloc countries, as the "socialist networks of techno-science."<sup>31</sup> Regrettably, previous studies hardly examine North Korea's place in these socialist networks of techno-science.<sup>32</sup>

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<sup>31</sup> For the concept of the trans-war network of technology in the post-war East Asia and Southeast Asia, see Hiromi Mizuno, Aaron S. Moore, and John DiMoia eds., *Engineering Asia: Technology, Colonial Development and the Cold War Order* (London: Bloomsbury Academic, 2018).

<sup>32</sup> As a result, a group of 1,500 Soviet specialists sent to a variety of North Korean industrial sites and a group of around 560 North Korean experts dispatched to the Soviet Union, both from 1948 and 1963, have never been discussed previously. M. Botsin, "Spravka o sostoyanii i perspektivakh razvitiya

This dissertation examines how North Korea's direction of industrial development radically shifted from active interactions in the areas of science and technology with its Second World allies to the eventual choice of *Juche*, the beginning of actively identifying itself with Third World countries that sought to create "self-reliant" economies.<sup>33</sup> North Korea gradually expanded its contact with the socialist networks of techno-science before the outbreak of the Korean War in 1950. Simultaneously, as this dissertation shows, North Korea also looked for ways to economize resources, maximize the use of machines, and innovate techno-science for industrial production, based on what the country possessed plenty of: people (*inmin*). That is, the people of North Korea were thought to be the most important resource to carry out techno-scientific revolutions.<sup>34</sup> To North Korean leadership in the late 1950s, ideological engineering,

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ekonomicheskogo sotrudnichestva s KNDR (June 12, 1964)," RGANI, f. 5, op. 49, d. 904, l. 59.

<sup>33</sup> One of the most indicative events that showed North Korea's turn to the Third World was the hosting of the Second Asian Economic Conference at Pyongyang on June 16-23, 1964, which was followed by the First Conference at Colombo in October 1962. Ch'oe Chin-sök, Chön Pyöng-sik, and Chöng Chae-chöms eds., *Che 2ch'a Asea kyöngje t'oronhoe munhönjip* (Pyongyang: Sahoe Kwahagwön Ch'ulp'ansa, 1964). The Soviet Union criticized the Pyongyang conference as contradictory to the unity and cohesion between Asia, Africa, and Latin America, which was conspired by the PRC. *Pravda* August 18, 1964. For North Korea's refutation against the Soviet criticism, see *Rodong Shinmun* September 7, 1964.

<sup>34</sup> Kim Il-sung defined the technological revolution as "administration that introduces and supplies achievements of modern science into production." Ri Sang-chun and Chön pyöng-sik eds., *Chosön hyöngmyöng suhaeng esö Kim Il-söng tongji e üihan maksü-reninjuüi üi ch'angjojök chögyong*, p. 270. For an official account regarding the background and importance of the technological revolution, see Kim Il-sung, *Kisul hyöngmyöng üi sönggwajök suhaeng ül wihayö* [For the Performative Implementation of the Technological Revolution] (Pyongyang: Chosön Rodongdang Ch'ulp'ansa,

or human remodeling (*in'gan kaejo*) based on collectivism in production sites became the key to replacing imports of advanced machines as well as professional education of experts and engineers abroad, both of which were costly prerequisites for economic development.<sup>35</sup> Meanwhile, the short-term “success” of North Korean industry, gauged in terms of an annual growth rate in industrial production in the late 1950s and early 1960s,<sup>36</sup> was more a mirage than a miracle, as it only strengthened the leadership’s push for ideological engineering while completely dismissing the role of “uneven cooperation” that built the country’s industrial infrastructure in the first place. Hence, the period that this study covers had far-reaching consequences for North Korea’s future.

This dissertation offers a new understanding of North Korea’s place in the socialist networks of techno-science in the 1950s and the 1960s. In order to explain *Juche*’s rise in the early 1960s, it is critical to capture how the meaning of cooperation among socialist countries changed. In the period from 1945 to 1960, North Korean media frequently mentioned both “material and spiritual” assistance given by the Soviet Union and other bloc countries. The

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1961).

<sup>35</sup> Ri Sang-chun and Chŏn pyŏng-sik eds., *Chosŏn hyŏngmyŏng suhaeng esŏ Kim Il-sŏng tongji e ūihan maksŭ-reninjuŭi ūi ch'angjojŏk chŏgyong*, pp. 381-418.

<sup>36</sup> It was calculated at 42% on average from 1954 to 1958 and 53% in 1959. “Politicheskii otchet za 1959 god,” RGANI f. 5, op. 49, d. 257, l. 4. According to the North Korean State Planning Committee, an annual growth rate turned out to be 14% in 1961, 20% in 1962, and 8% in 1963. N. Shubnikov, O dekabr'skom plenum TsK Trudovoi Partii Korei /Spravka/ (January 25, 1963) RGANI, f. 5, op. 49, d. 640, l. 108; Yu. Ognev, “O sentyabr'skom plenum TsK Trudovoi Partii Korei 1963 goda /Spravka/ (September 17, 1963),” RGANI, f. 5, op. 49, d. 640, l. 336.

material assistance given to North Korea meant North Korea had access to loans and credits, machines, equipment, services, military weapons, and energy resources. Material assistance was offered both for free and for payment. I focus on the flow of “advanced” techno-science that North Korea could access through cooperation.<sup>37</sup> Meanwhile, the socialist bloc’s non-material assistance implied recognition of North Korea as an important part of the Second World.<sup>38</sup> For example, during the Korean War, Soviet or Eastern European citizens’ protests in the streets of Moscow or Prague against U.S. imperialism were a substantial part of spiritual assistance. Moreover, North Koreans in the 1950s understood socialist cooperation as something entirely different from U.S.-led cooperation in the U.S.-led capitalist world, in which assistance was used as a tool of intervention in numerous countries in Asia, Africa, and Latin America. Indeed, this perception of a difference between socialist and capitalist cooperation aggravated North Korean leadership’s suspicion that Khrushchev’s “revisionism” in the early 1960s aimed to use assistance as a neo-imperial instrument against the PRC.

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<sup>37</sup> For accounts that examine various types of assistance in the Second World, see Patryk Babiracki, *Soviet Soft Power in Poland: Culture and the Making of Stalin's New Empire, 1943-1957* (Chapel Hill: University of North Carolina Press, 2015); Rachel Applebaum, *Empire of Friends: Soviet Power and Socialist Internationalism in Cold War Czechoslovakia* (Cornell University Press, 2019).

<sup>38</sup> “Spiritual,” or moral, assistance included the establishment of diplomatic relations, representation on behalf of North Korea in international bodies, where North Korea had no membership such as the United Nations, and numerous protests and demonstrations held against the U.S. Although it lies beyond the scope of this dissertation, the North Korean state’s consistent argument for the importance of maintaining unity and cohesion in the socialist bloc was closely linked with how the North Korean leadership saw spiritual assistance in the 1950s and the 1960s.



The burden of repaying loans and settling the trade deficit always haunted North Korea, for it had to earn foreign currency—Soviet rubles—by selling products that were unpopular in both the bloc and world markets. The price that North Korea had to pay for receiving assistance skyrocketed when the Soviet Union refused to give free military assistance to North Korea in December 1962. As the Sino-Soviet split widened by 1963 and 1964,<sup>39</sup> Kim Il-sung saw Soviet-led socialist cooperation with more suspicion as neo-imperialism, criticizing it as contradicting authentic “proletarian internationalism.”<sup>40</sup> North Korean planners characterized its Soviet counterpart as the source of ongoing division in the socialist bloc. As North Korea did not want to remain solely an exporter of natural resources, its leadership condemned Khrushchev’s economic policy, saying that it contradicted the principle of socialist cooperation.<sup>41</sup> Although it was not affordable for North Korea to completely break away from

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<sup>39</sup> For general accounts of the Sino-Soviet split, see Odd Westad ed., *Brothers in Arms: The Rise and Fall of the Sino-Soviet Alliance, 1945-1963* (Washington, D.C.: Woodrow Wilson Center Press, 1998); Lorenz M. Lüthi, *The Sino-Soviet Split: Cold War in the Communist World* (Princeton: Princeton University Press, 2008); Sergey Radchenko, *Two Suns in the Heavens: The Sino-Soviet Struggle for Supremacy, 1962-1967* (Stanford: Stanford University Press, 2009); Austin Jersild, *The Sino-Soviet Alliance: An International History* (Chapel Hill: The University of North Carolina Press, 2014); Jeremy Friedman, *Shadow Cold War: The Sino-Soviet Competition for the Third World* (Chapel Hill: The University of North Carolina Press, 2015).

<sup>40</sup> *Rodong Shinmun* October 28, 1963, reprinted in *Chosŏn chungang nyŏn'gam (1964nyŏn)* (Pyongyang: Chosŏn Chungang T’ongsinsa, 1964), pp. 115-131.

<sup>41</sup> “Kritika revizionistskoi teorii Khrushcheva o “edinoi ekonomike” (December, 1962),” RGANI, f. 5, op. 49, d. 640, ll. 17-23.

the socialist bloc given its market and its networks of techno-science, the country still had to search for its own way to innovate science and technology. This change in North Korea's relations with the socialist networks of techno-science, which previous scholarship has not neglected, was crucial in *Juche*'s rise in the country's diplomacy and techno-scientific policy. In sum, understanding how North Korean planners tried to bridge an irreconcilable gap between its modern ideals—industrial production based on “advanced” science and technology—and its own deficient, poor realities is tremendously important in analyzing the origins of *Juche*.

Unquestionably, what drove North Korea to expand its initial engagement with the socialist networks of techno-science was the idea of economic development that was largely shared across the Cold War divide.<sup>42</sup> The economic development in North Korea was closely related to its agendas of decolonization and peaceful unification. Up until the early 1970s, for example, Kim Il-sung repeatedly mentioned the importance of overcoming economic “deformity” and backwardness that were caused by Japanese colonialism and then later by the devastation during the Korean War. Likewise, Kim Il-sung did not always prioritize investing in defense, especially in the post-war 1950s,<sup>43</sup> which contradicts a current fixed image of the

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<sup>42</sup> Michael E. Latham, *The Right Kind of Revolution: Modernization, Development, and U.S. Foreign Policy from the Cold War to the Present* (Ithaca: Cornell University Press, 2011); Artemy M. Kalinovsky, *Laboratory of Socialist Development: Cold War Politics and Decolonization in Soviet Tajikistan* (Ithaca: Cornell University Press, 2018); Sara Lorenzini, *Global Development: A Cold War History* (Princeton: Princeton University Press, 2019).

<sup>43</sup> “The diary of the Soviet Chargé d'affaires ad interim in North Korea for the period from January 26 to February 16, 1955 (February 8, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 8, ll. 80.

country as belligerent and militarized. Rather, North Korea in the post-Korean War period channeled all its available resources to reconstruct and strengthen industrial production with an extensive focus on the machine-building industry. One of the oft-repeated narratives that justified this policy of prioritizing industrial growth was that the South Korean people would be attracted to North Korean socialism once North Korea achieved affluence and prosperity. As this dissertation details, this mandate for rapid industrial growth was only bolstered by techno-scientific “victories,” which are still remembered in official North Korean narratives solely as the byproducts of Kim Il-sung’s guidance.<sup>44</sup> What is completely omitted from these narratives, however, is socialist cooperation that not only supplied North Korea with industrial infrastructure, but also boosted the morale of numerous North Korean experts, which was arguably the most important origin of *Juche*’s rise.

This dissertation argues that the price mattered more than the politics in North Korea’s choice of self-reliance over socialist cooperation in the development of its science and technology. North Korean planners concluded by the early 1960s that the benefits of actively taking part in the socialist networks of techno-science were getting smaller, compared to the costs incurred. As I show in Chapters Two and Three, the country’s cash-strapped, debt-stricken circumstances always weighed down North Korean leadership’s choices throughout the 1950s, forcing it to find cheaper techno-scientific alternatives to reinforce mass industrial production. Moreover, as Chapters Four, Five, and Six detail, Kim Il-sung, while expressing how grateful the country was for the assistance, personally doubted the much touted “success” that North Korea achieved in the fields of agriculture, medicine, and nuclear power generation, which

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<sup>44</sup> Yun Myōng-su, *Chosŏn kwahakkisul paljŏnsa (Haebang hup’yŏn 1)*.

justified its leadership's disappointment toward the country's costly interactions with the socialist bloc. Furthermore, North Korea's confidence in its capability to manage the economy was amplified by Kim Il-sung's view that one must know "our [North Korean] situations" well in order to carry out a revolution in Korea, which was interpreted by contemporary outside observers as "nationalism." Although cooperation between North Korea and the socialist bloc continued afterwards, by the early 1960s North Korea's economy could not support its desire to import "advanced" science and technology, which led to a drastic reduction in techno-scientific cooperation with the Soviet Union and Eastern European countries.

Retrospectively, North Korean leadership was short-sighted in believing that industrial and techno-scientific "achievements" by the country in the late 1950s and early 1960s would be repeated in the future without sustained cooperation with the socialist bloc. However, it had good reason to hold such a view that only later came to be recognized as mistaken. As the reconstruction of blast furnaces, fertilizer factories, mining facilities, and tractor repair shops across North Korea was brought to completion by 1958 with the help of socialist assistance, the country saw some encouraging results: agricultural machines such as tractors (the first North Korea-made tractor was named after a legendary thousand-li horse) and trucks (named Victory) began to be manufactured in 1958 based on reverse engineering of Soviet designs; the first People's Award (*inmin sang*) was respectively granted to leading scientists Ri Sŭng-ki and Chu Chong-myŏng for inventing vinalon, also known as *Juche* fiber, and the method of producing ferro-coke in 1959<sup>45</sup>; the establishment of the socialist institution of health and

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<sup>45</sup> The People's Award, enacted by the Supreme People's Assembly in September 1958, was a state reward to praise for "outstanding works, inventions, and creations in the fields of science, technology, literature, and arts" with an award certificate, a gold medal, and monetary bonus. For the first award,

medicine was declared in 1960; the total grain yield continued to break records from 1960 to 1964, leading to the publication of Kim Il-sung's "Thesis on Socialist Agricultural Problems" in 1964; a Soviet IRT-2000 research reactor was assembled in 1964 and was put in operation

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see "Yöngye ūi ch'öt inminsang kyegwanindül," *Chosŏn minjujuŭi inmin konghwaguk Kwahagwŏn t'ongbo* 5 (September – October 1959), pp. 61-64 and Kang Ho-che, *Pukhan kwahakkisul hyöngsöngsa I*, p. 283. Interestingly, the second People's Award was given to Kye Ŭng-sang, famous biologist specialist in sericulture, in 1960. *Rodong Shinmun* September 13, 1960. As early as August 1957, the North Korean leadership considered him as a possible candidate for foreigner's membership in the Soviet Academy of Sciences (AS). "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from August 1 to 15, 1957 (August 14, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 5, l. 449. In contrast, Ri Sŭng-ki was selected as foreign member of the Soviet AS only a decade later in 1966. AVPRF, f. 0102, op. 26, p. 52, d. 12, ll. 1-42, partially translated in Park Chong-hyo, *Rösia Yönbang Oemusöng Taehanjöngch'aek Charyo* [The Materials of Korea Policy in the Ministry of Foreign Affairs of the Russian Federation] Vol. 2 (Seoul: Sönin, 2010), p. 306. It seems that Kye Ŭng-sang's fame as agronomist was international in the second half of the 1950s, as the All-Union Lenin Agricultural Academy of the Soviet Union considered conferring membership to Kye as a correspondent member in late 1959. "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from November 6 to December 7, 1959 (November 12, 1959)," AVPRF, f. 0102, op. 15, p. 81, d. 7, l. 263. Although this dissertation does not cover Kye Ŭng-sang due to the unavailability of source materials, his meritorious achievements must have contributed to the consolidation of the North Korean leadership's techno-scientific policy-making in the early 1960s. Coke is a fuel with a high carbon content, usually used as a reducing agent in a blast furnace. Ferro-coke is a process of adding iron in coke in order to economize coals and improve productivity. Chu Chong-myöng, *Hamch'öl k'ok'üsŭ* (Pyongyang: Kwahagwŏn Ch'ulp'ansa, 1960).

in 1965. These “victories” gave rise to North Korean leadership’s blind faith in its own mode of industrial development, which seemed way cheaper than paying more to bring “advanced” techno-science from abroad.

After a decade of interacting with the costly socialist networks of techno-science in the early 1960s, Kim Il-sung declared that improving efficiency and fully understanding the “conditions of North Korea” were the most important elements in the techno-scientific revolutions, which did not have anything to do with obtaining foreign techno-science. As historical analyses of the relations between developmentalism and post-colonialism in the Cold War show,<sup>46</sup> North Korea made a choice that was perceived by its leadership as not only “rational” in an economic sense, but also revolutionary in a political sense under the specific circumstances of the early 1960s, while never assuming responsibility for the consequences, especially when the desired techno-scientific revolutions failed to occur. Simultaneously, any flaws and limitations in North Korea’s industrial development were attributed to its people’s passivity in ridding themselves of “old thoughts” and failure to follow the Party’s guidance.

As I investigate North Korea’s techno-scientific engagement with the socialist bloc

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<sup>46</sup> Gabrielle Hecht ed., *Entangled Geographies: Empire and Technopolitics in the Global Cold War* (Cambridge: MIT Press, 2011); Naomi Oreskes and John Krige eds., *Science and Technology in the Global Cold War* (Cambridge: MIT Press, 2014); Eden Medina, Ivan da Costa Marques, and Christina Holmes, eds., *Beyond Imported Magic: Essays on Science, Technology, and Society in Latin America* (Cambridge: The MIT Press, 2014); Clapperton C. Mavhunga ed., *What Do Science, Technology, and Innovation Mean from Africa?* (Cambridge: The MIT Press, 2017); Barak Kushner and Sherzod Muminov eds., *Overcoming Empire in Post-Imperial East Asia: Repatriation, Redress and Rebuilding* (London: Bloomsbury Academic, 2019).

and the cost involved, my analysis focuses on a variety of interactions among techno-scientific practitioners—scientific experts, scientists, and engineers—of North Korea and the Soviet Union.<sup>47</sup> The Soviet Union was the biggest techno-scientific provider for the broader Second and Third Worlds. Although the Soviet Union’s place in North Korean history should be examined in detail, no such works exist yet, due in large part to the difficulties of obtaining credible source materials.<sup>48</sup> However, it is not hard to see the magnitude of Soviet involvement in the history of North Korea, especially in the 1940s, as indicated by the long-lasting term “sovietization” that interpreted the establishment of post-war socialist regimes as the expansion of the Soviet sphere of influence.<sup>49</sup> Contrary to this Cold War assumption, historian Ki Kwang-sŏ shows that it was the North Korean leadership, not the Soviet authorities in Moscow or Pyongyang, which took the lead in building the country.<sup>50</sup> North Korea waged a unification war in 1950 based on its overconfidence and miscalculation of a possible U.S. entry, after getting Stalin’s conditional approval.<sup>51</sup> After the Korean War was brought to a halt by an

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<sup>47</sup> For a central role played by experts in the history of the twentieth century, see Timothy Mitchell, *Rule of Experts: Egypt, Techno-Politics, Modernity* (Berkeley: The University of California Press, 2002); Andra B. Chastain and Timothy W. Lorek, eds., *Itineraries of Expertise: Science, Technology, and the Environment in Latin America* (Pittsburgh: University of Pittsburgh Press, 2020).

<sup>48</sup> For a few exceptions, see Yu. V. Vanin ed., *SSSR i Koreya* (Moscow: Nauka, 1988).

<sup>49</sup> Balázs Apor, Péter Apor, and E. A. Rees eds., *The Sovietization of Eastern Europe: New Perspectives on the Postwar Period* (Washington D.C.: New Academia Publishing, 2008).

<sup>50</sup> Ki Kwang-sŏ, *Pukhan kukka ūi hyŏngsŏng kwa Soryŏn* (Seoul: Sŏnin, 2018).

<sup>51</sup> Chen Jian, *China's Road to the Korean War: The Making of the Sino-American Confrontation* (New York: Columbia University Press, 1994).

armistice agreement in 1953, the Soviet Union led aid efforts in the socialist bloc to reconstruct devastated North Korea, lasting until the end of the 1950s. Simultaneously, as North Korea dashed to complete both a post-war reconstruction plan (1953-1956) and the First Five-Year Plan (1957-1961) earlier than scheduled, *Rodong Shinmun* confidently termed the Fourth Party Congress in September 1961 the “congress of the glorious victors.”<sup>52</sup> The same Congress praised the Soviet Union as a country armed with the “best techno-science in the world.”<sup>53</sup> Therefore, nobody in North Korea, except for Kim Il-sung and his few close subordinates, anticipated that a couple of years later the Soviet Union would simply be mentioned in the country’s media as a “socialist country” or a “foreign country.” After 1965, Soviet techno-science never retrieved its once symbolic position in North Korean media, even though a number of Soviet experts continued to visit the country at the North Korean government’s request. Offering new, on-the-ground accounts of how experts in the bloc countries interacted, this dissertation explores what roles they played and how they contributed to the making of *Juche* in the late 1950s and early 1960s.

Finally, this dissertation does not aim to make a complete balance sheet of North Korea’s techno-scientific exchange with the socialist bloc from 1945 to 1965. In addition to the fact that relevant archival documents are not currently available, the quantitative information that is available, although very useful in understanding certain trends,<sup>54</sup> does not

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<sup>52</sup> *Rodong Shinmun*, September 11, 1961.

<sup>53</sup> *Chosŏn nodongdang taehoe charyojip (che 2chip)* ([s.l.]: Kukt'o T'ongirwŏn Chosa Yŏn'gushil, 1988), p. 91.

<sup>54</sup> For such works, see Natalia Bazhanova, *Vneshne-ekonomicheskie svyazi KNDR: V poiskakh vykhoda iz tupika* (Moscow: Nauka, 1993); Avram A. Agov, “North Korea in the Socialist World.”



tell us how the same information was perceived by contemporary human actors and, more importantly, how these actors used such (mis)information as a basis for their actions and decisions. Instead of laying out the quantitative information, I choose to delineate the contexts in which North Korea's quest for "advanced" techno-science for mass industrial production faced exacerbating economic difficulties, which drove its leadership to rely upon cheaper, more rational, and proven measures. It was in these circumstances that the principle of "self-reliance based on one's own strength" (*charyŏk kaengsaeng*; Ch. *zili gengsheng*) that has prevailed in the political, socio-economic, and cultural lives of North Koreans until now, eventually became law by the early 1960s. In sum, North Korea succeeded in exerting leverage through socialist cooperation to create *Juche* as a mode of development, without knowing that the price for this "success" would be the country's permanent lagging in economic and techno-scientific development.

### ***Approaches and Sources***

This dissertation examines a wide range of documents obtained from state archives and repositories in the U.S., Russia, and South Korea in order to reconstruct how North Korea's engagement with the socialist networks of techno-science unfolded and how it affected the decision to choose *Juche* as a more "rational" alternative of ideological engineering for the country's industrial development from 1945 to 1965. In order to study North Korean history, whose archives remain closed for the time being, scholars usually make a detour by examining diplomatic documents that were produced by North Korean officials and representatives of other countries residing in Pyongyang. Some of the limitations of this approach are obvious in that such documents, especially those produced to help contemporary readers make decisions, did not always tell the truth in its entirety. In order to address this issue, I make extensive use

of quantitative information, or numerical figures, such as the cost for a certain product that North Korea wanted to purchase or the number of North Korean experts visiting the Soviet Union, in addition to qualitative information. My assumption behind this approach is that there was almost no room for the involved parties—either North Korea or the Soviet Union—to deceive each other in bilateral interactions where the quantitative information functioned as the primary unit of such interactions. That is, my examination of “uneven cooperation” reminds us of an American adage with a socialist tweak: there was no such thing as a free lunch in the socialist bloc. I also cross-check those archival documents with relevant North Korean publications as often as possible. While acknowledging the limitations of this approach, I suggest that this approach is currently the most reliable way, when combined with a similar range of North Korean publications, to reconstruct the historical realities of North Korea.

My inquiry is related to a dominant mode of research in studies of Cold War history. Since social scientist Tony Smith suggested using a “pericentric” framework, which aims to conceptualize as “agency” the capability of a non-First World country to “expand, reinforce, and prolong” Cold War conflicts,<sup>55</sup> similar scholarly works have been produced. Some themes such as disunity, conflicts, and rivalry, especially those in the socialist bloc, have been explored under this trend. Unfortunately, a few works that adopted this approach in the study of North Korean history only reinforce particular images of North Korea as an exotic *Juche* country.<sup>56</sup>

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<sup>55</sup> Tony Smith, “New Bottles for. New Wine: A Pericentric Framework for the Study of the Cold War,” *Diplomatic History* 24 (2000), pp. 567–591.

<sup>56</sup> Bernd Schaefer, “North Korea's “Terrorism” and “Counterterrorism” in the Late 1980s” in Adrian Hänni, Thomas Riegler, and Przemyslaw Gasztold eds., *Terrorism in the Cold War: State Support in Eastern Europe and the Soviet Sphere of Influence* (London: I.B. Tauris, 2021), pp. 185-193; Benjamin

This trend in North Korean history studies is one-sided, given that the escalation of the Cold War was sought not only by non-First World countries and that such “agency” of any non-First World country can also be found in its economic relations with more powerful countries. While I am aware of the merits and limitations of this trend, I suggest that the theme of cooperation in the non-First World offers a previously-unexplored yet important history of North Korea’s engagement with the Second World.<sup>57</sup> Whereas North Korea’s reaching out to Third World countries lies beyond the scope of this dissertation, focusing on how North Korea dealt with Second World countries helps us better understand the economic and techno-scientific origins of *Juche*.

In order to examine the theme of cooperation between North Korea and the Soviet-led socialist bloc, this dissertation builds on two distinctive trends in scholarship on North Korean history that have largely remained separate through the fault line of language: Western-language scholarship and Korean-language scholarship. Some of the Western-language scholarship, usually comprising English- and Russian-language works, focuses on revealing the paradox and contradiction of the North Korean regime in usually an accusatory tone

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R. Young, *Guns, Guerillas, and the Great Leader: North Korea and the Third World* (Stanford: Stanford University Press, 2021).

<sup>57</sup> Thomas P. Bernstein and Hua-Yu Li eds., *China Learns from the Soviet Union, 1949–Present*; Christine Hatzky, *Cubans in Angola: South-South Cooperation and Transfer of Knowledge, 1976–1991* (Madison: University of Wisconsin Press, 2015); Tobias Rupperecht, *Soviet Internationalism after Stalin: Interaction and Exchange between the USSR and Latin America during the Cold War* (Cambridge: Cambridge University Press, 2015); Oscar Sanchez-Sibony, *Red Globalization*; James Mark, Artemy M. Kalinovsky and Steffi Marung eds., *Alternative Globalizations*.

drawing mostly upon Russian-language sources.<sup>58</sup> Some Korean-language scholarship prioritizes reconstructing various aspects of North Korea's historical reality, mostly based on Korean-language sources.<sup>59</sup> These works, when combined, provide useful contexts of how

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<sup>58</sup> Erik van Ree, "The Limits of Juche: North Korea's Dependence on Soviet Industrial Aid, 1953–76," *Journal of Communist Studies* 5:1 (1989), pp. 50-73; Natalia Bazhanova, *Vneshne-ekonomicheskie svyazi KNDR*; Andrei Lankov, *The Real North Korea: Life and Politics in the Failed Stalinist Utopia* (New York: Oxford University Press, 2013); James F. Person, "Solidarity and Self-Reliance." Bazhanova's book was published first in South Korea containing more concrete information than its original edition in Russian. See Natalia Bazhanova, Chun-yong Yang trans., *Kiro e sŏn Pukhan kyŏngje: taeoe kyŏnghyŏp ūl t'onghae pon silsang* (Seoul: Han'guk Kyŏngje Shinmunsa, 1992). For an informative Russian-language work published in the former Soviet Union, see Svetlana G. Nam, *Obrazovanie i nauka KNDR v usloviyakh nauchno-tekhnicheskoi revolyutsii* (Moscow: Nauka, 1975). In the meantime, Japanese-language scholarship seems to join in non-Korean language scholarship. See Mitsuhiro Kimura and Keiji Abe, *Kitachōsen no gunji kōgyōka: teikoku no sensō kara kin nissei no sensō e* (Tokyo: Chisen Shokan, 2003); Nobuo Shimotomai, *Mosukuwa to Kin Nissei: reisen no naka no Kita Chōsen 1945-1961-nen* (Tokyo: Iwanami Shoten, 2006).

<sup>59</sup> Sŏ Tong-man, *Puk Chosŏn sahoejuŭi ch'eje sŏngnipsa, 1945-1961* (Seoul: Sŏnin, 2005); Kim Sŏng-bo, *Nam-Pukhan kyŏngje kujo ūi kiwŏn kwa chŏn'gae: Pukhan nongŏp ch'eje ūi hyŏngsŏng ūl chungsim ūro* (Seoul: Yŏksa Pip'yŏngsa, 2000); Kang Ho-che, *Pukhan kwahakkisul hyŏngsŏngsa I*; Kim Yŏn-ch'ŏl, *Pukhan ūi sanŏphwa wa kyŏngje chŏngch'aek* (Seoul: Yŏksa Pip'yŏngsa, 2001); Kim Chae-ung, *Pukhan ch'eje ūi kiwŏn: inmin wi ūi kyegŭp, kyegŭp wi ui kukka* (Seoul: Yŏksa Pip'yŏngsa, 2018); Kim Kwang-un, *Pukhan chŏngch'isa yŏn'gu I* (Seoul: Sŏnin, 2003); Yi T'ae-sŏp, *Kim Il-sŏng lidŏsip yŏn'gu* (Seoul: Tŭllyŏk, 2001); Yi Chong-sŏk, *Chosŏn Nodongdang yŏn'gu: chido sasang kwa kujo pyŏnhwa rŭl chungsim ūro* (Seoul: Yŏksa Pip'yŏngsa, 1995); Lee Se-young, "The Formation of

North Korean history in general unfolded in the period from the 1940s to 1960s.

Greatly useful for my study of North Korea's techno-science are the works written by South Korean scholars including Yi Ch'un-kŭn and Shin Hyo-suk.<sup>60</sup> However, it should be noted that Yi's publications focus on Sino-North Korean techno-scientific cooperation and that Shin's article, the only scholarly work that touches upon the techno-scientific cooperation between North Korea and the Soviet Union, seems more to be an explanatory note on a group of archival sources based on her previous research on North Korean education in the 1940s.<sup>61</sup> Though they do not focus on North Korea's techno-scientific engagement with the socialist bloc, South Korean historians Cho Su-ryong, Lee Se-young [Yi Se-yŏng], and Lee Joo-ho [Yi Chu-ho] have partially reconstructed how the Soviet Union provided techno-scientific assistance to the North Korean economy in the 1950s.<sup>62</sup> However, all of these works tend to

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'Socialist' Workers and Changes in Production Sites in North Korea (1945-1960)." For a few exceptions, see Ki Kwang-sŏ, *Pukhan kukka ūi hyŏngsŏng kwa Soryŏn*; Cho Su-ryong, "Jaryeokgaengsaeng Economy."

<sup>60</sup> Yi Ch'un-kŭn, *Pukhan ūi kwahakkisul* (Paju: Hanul, 2005); *Kwahakkisul ro ingnŭn Pukhan haek* (Seoul: Saenggak ūi namu, 2005); Shin Hyo-suk, "Study on North Korea-Russia S&T Cooperation from the document of the Committee of North Korea-Soviet Union S&T Cooperation" (in Korean), *Hyŏndae Pukhan Yŏn'gu* 8:3 (2005), pp. 31-71.

<sup>61</sup> Shin Hyo-suk, *Soryŏn kunjŏnggi Pukhan ūi kyoyuk* [North Korea's education under the Soviet Military Command] (Seoul: Kyoyukkwahaksa, 2003).

<sup>62</sup> Cho Su-ryong, "Jaryeokgaengsaeng Economy"; Lee Se-young, "The Formation of 'Socialist' Workers and Changes in Production Sites in North Korea (1945-1960)"; Lee Joo-ho, "A Study on Representative in DPRK of The State Committee for Foreign Economic Relations of Soviet Union

overestimate the scope and degree of Soviet “interference” in North Korean domestic affairs, joining in the trend of painting the rise of *Juche* as only a political victory in North Korea’s “breaking away from” the Soviet-led socialist bloc. This politics-centered view does not offer a fuller picture of North Korea’s unique position in the socialist bloc, which merits a further examination based on hitherto-untapped archival materials.

This dissertation draws upon a range of untapped or under-examined documents from different archives and repositories including the Russian Presidential Archive (APRF), the Russian Central Archive of the Defense Ministry (TsAMORF), the Russian Archive of Foreign Policy (AVPRF), the Russian State Archive (GARF), the Russian State Archive of Economy (RGAE), the Russian State Archive of Contemporary History (RGANI), the Russian State Archive of Socio-Political History (RGASPI), the Russian State Library in Moscow, the National Library of Russia in Saint-Petersburg, the U.S. National Archives and Records Administration (NARA), the U.S. Library of Congress, the National Institute of Korean History (NIKH), and the National Library of Korea. All source materials that I examine in this dissertation can be accessed at the corresponding archives or the NIKH at Gwacheon, South Korea, unless indicated otherwise.<sup>63</sup> The NIKH has endeavored to collect source materials on

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(GKES) in late 1950s” (in Korean), *Han’guksa Yŏn’gu* 193 (2021), pp. 303-335.

<sup>63</sup> The source materials from APRF, AVPRF, and TsAMORF that I examine are inaccessible at the time of writing. Therefore, I refer to a couple of published materials collections, in both printed and digitized versions. For example, a group of APRF and AVPRF materials, covering the period from 1945 to 1953, were gathered by historian Shen Zhihua and translated in Chinese. See Shen Zhihua ed., *Chaoxian zhan zheng: Eguo dang an guan de jie mi wen jian* [The Korean War: Declassified Documents from Russian Archives] Vols. 1-3 (Taipei: Zhong yang yan jiu yuan jin dai shi yan jiu suo, 2003). I was able to examine

Korean history from archives located outside South Korea starting from the early 1980s.

One of the main groups of archival sources that this dissertation examines is fund (*fond*)

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the copies of these original materials at the National Institute of Korean History (NIKH), with the help of Cho Su-ryong. For NIKH-housed AVPRF materials without archival signatures, I provide the storage information of the same institution in the order of “scp,” which stands for the collection number, and “tp,” which stands for the registration number. Some APRF and AVPRF materials are partially translated in Korean and can be accessed in Park Chong-hyo, *Rōsia Yōnbang Oemusōng Taehanjōngch'aek Charyo* Vols. 1-2 (Seoul: Sōnin, 2010). For a group of TsAMORF, AVPRF, and RGASPI materials covering the 1940s, I make use of the copies, provided by Ki Kwang-sō, housed in the NIKH, or serviced by the Academy of Korean Studies at <http://waks.aks.ac.kr>. Some RGASPI materials that I analyze are reprinted in Andrei Lankov ed., Chōn Hyōn-su trans., *Soryōn kongсандang kwa pukhan munje* [The Communist Party of the Soviet Union and the Issue of North Korea] (Taegu: Kyōngbuk Taehakkyo Ch'ulp'anbu, 2014). Cho Su-ryong allowed me to use RGANI materials covering the period from 1953 to 1966. For GARF and RGAE materials, Lee Joo-ho helped me in acquiring their digitized versions. Some of the seized North Korean documents, categorized as Foreign Records Seized, or a Record Group (RG) 242, at the NARA, can be accessed through the internet, serviced by the National Library of Korea. In 1982-2019, the NIKH published 86 volumes of North Korea-related materials collections under the name of *Source Book of North Korea* (SBNK, Pukhan kwan'gye saryojip) which included source materials from the NARA and Russian archives. For a brief explanation on the RG 242 materials and the SBNK, see Suzy Kim, *Everyday Life in the North Korean Revolution, 1945–1950* (Ithaca and London: Cornell University Press, 2013), pp. 12-13. For a classical work that accounts the origins of the Korean War based on RG 242 materials, see Bruce Cumings, *The Origins of the Korean War: Liberation and the Emergence of Separate Regimes, 1945–1947* (Princeton: Princeton University Press, 1981).

0102, a group of materials related to North and South Korea at the AVPRF, which contains official diaries of Soviet diplomats, reports of domestic visits to production sites, evaluations of North Korea-Soviet relations, and suggestions of diplomatic measures. Specifically useful among these AVPRF materials are the official diaries recorded by Soviet representatives in North Korea, including ambassadors, secretaries, and chiefs of the Soviet economic mission, covering early 1953 to late 1960. These materials enable me to reconstruct North Korean realities through the lens of a Soviet representative almost on a daily basis. Another significant group of archival sources are inventories (*opis*) 28 and 49 in fund 5 in the RGANI, which have a number of diplomatic documents containing both qualitative and quantitative information about North Korea's politics, economy, society, and culture. These RGANI materials are extremely useful in examining the first half of the 1960s, especially 1963 and 1965,<sup>64</sup> a period which has been previously analyzed only partially. Existing studies have made extensive use of official diaries mostly from the AVPRF, and the RGANI to a lesser degree, but largely omitted other types of materials in the same funds.<sup>65</sup> Given that North Korean publications began to revise or exaggerate realities starting from the mid-1950s,<sup>66</sup> the information

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<sup>64</sup> I was not able to refer to RGANI materials that cover the years of 1960, 1962, and 1964, which were still classified at the time of my visit in the archive in the summer of 2019.

<sup>65</sup> Andrei Lankov, *Crisis in North Korea*; Nobuo Shimotomai, "Kim Il Sung's Balancing Act between Moscow and Beijing, 1956-1972"; James F. Person, "Solidarity and Self-Reliance"; Cho Su-ryong, "Jaryeokgaengsaeng Economy."

<sup>66</sup> For example, the North Korean authorities allegedly retrieved the copy of *Rodong Shinmun* (April 26, 1955) that reported about the ongoing food crisis in the country. László Keresztes, "Report, Embassy of Hungary in North Korea to the Hungarian Foreign Ministry," May 10, 1955, History and Public



contained in these archival materials offers valuable chances to cross-check the veracity of official North Korean accounts.<sup>67</sup>

### ***Chapter Outline***

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Policy Program Digital Archive, MOL, XIX-J-1-j Korea, 5. doboz, 5/c, 006048/1955, <https://digitalarchive.wilsoncenter.org/document/113396>. Accordingly, no relevant information could be found in a “sanitized” copy of the same newspaper. *Rodong Shinmun* April 26, 1955. For a brief account of the North Korean state’s failure to respond adequately to the 1955 famine, see Balázs Szalontai, *Kim Il Sung in the Khrushchev Era*, pp. 65-66; Cho Su-ryong, “Jaryeokgaengsaeng Economy,” pp. 106-108. Another example could be found from Kim Il-sung’s speech at the Second National Conference of Scientists and Engineers, held in March 1963, where he reportedly said that he had requested 500,000 copies of “technical books” from the Soviet leadership including Malenkov and Molotov in 1953. “Meeting minutes (April 16, 1963),” RGANI, f. 5, op. 49, d. 640, l. 247. However, the names of the Soviet leaders as well as numerical information are redacted in a way that bolsters Kim Il-sung’s authorities in the official narrative. Kim Il-sung, *Uri nara ūi kwahakkisul ūl paljŏn sik’il te taehayŏ* [On the Development of Science and Technology in Our Country] (Pyongyang: Chosŏn Rodongdang Ch’ulp’ansa, 1986), p. 138.

<sup>67</sup> The primary currency unit—rubles—is used in this dissertation primarily to present the scope and size of socialist assistance in a *relative* term. Meanwhile, the ruble figure after 1961 reflects a monetary reform of the Soviet Union, undertaken in the same year, which redenominated the ruble at a ratio of 10 to 1. For this revaluation of the Soviet rouble, see Philip Hanson, *The Rise and Fall of the The Soviet Economy: An Economic History of the USSR from 1945* (London: Routledge, 2014), pp. 86-87. For a mechanical conversion of both North Korean and Soviet currencies into U.S. dollars, see Avram A. Agov, “North Korea in the Socialist World,” pp. 100; 104; 383.

This dissertation consists of two parts. In the first part, I chronologically analyze in three chapters the previously unexamined origins and development of techno-scientific interactions between North Korea and the Soviet-led socialist bloc from 1945 to 1965. While the first chapter details its beginning from 1945 to 1950, the following two chapters, covering the periods of 1950-1956 and 1957-1965 respectively, bring a novel understanding of how “uneven cooperation” in techno-science played a key role in North Korea’s industrial success, only to be neglected in the country’s media by the early 1960s. The second part, comprising three chapters, offers original analyses of the previously underexplored technological interactions in the 1950s in the fields of agriculture, medicine, and nuclear power generation. My analyses center on how the structural transformation of “uneven cooperation,” weak economic capability, and the domestic success of techno-scientific alternatives drove North Korean leadership to choose techno-scientific self-reliance over costly cooperation, attributing all its achievements to Kim Il-Sung’s “wisdom.”

The first chapter examines how the Soviet Union actively helped the North Korean regime organize its communities of science and technology from 1945 to 1950. This chapter covers not only the origins of how the Soviet Union became the largest techno-science provider to North Korea, but also how North Koreans endeavored to look for secrets that would make their economy advanced and strong. I argue that it is vital to understand North Korean techno-scientific culture at this time—“people’s techno-science”—as a historical byproduct of North Korea’s postcolonial desire to escape poverty and Soviet material assistance, which left a deep imprint in how North Koreans would interpret socialist assistance in subsequent years.

The second chapter traces how cooperation between North Korea and the Soviet-led socialist bloc unfolded from 1950 to 1956. I offer a new understanding of how foreign experts worked in North Korean production sites and how their North Korean counterparts went to the

bloc countries for the purpose of studying and training during and after the Korean War. Reconstructing this period is tremendously important to understand the contexts in which North Korea began to calculate the pros and cons of engaging with the socialist networks of techno-science. Subsequently, North Korea started to articulate economizing resources and locating material reserves as one of its national priorities to overcome economic hardships and develop its science and technology.

Chapter Three narrates how the cooperation between North Korea and the socialist bloc, which underwrote North Korea's project to become an aspiring socialist country with technological pride, waned as barter-based trades became acute pressure for North Korea and as the Sino-Soviet split was widening. Against this background, North Korea's industrial production achieved great success, fueling the already-forceful productivist understanding of techno-science. Present North Korean culture, in which techno-scientific practitioners are allowed to find their *raison d'être* only in their positive contribution to increased productivity, took its form in this period. While the bloc countries in Soviet Russia and Eastern Europe were ready to make a deal with North Korean comrades, this chapter shows Kim Il-sung viewed such deals as a form of neo-imperialism, eventually choosing autonomy in the arena of techno-science.

Analyzing techno-scientific exchanges in specific fields of agriculture, medicine, and nuclear power generation in Chapters Four, Five, and Six respectively, the second part of this dissertation uncovers how interactions among foreign experts and their North Korean counterparts gradually shifted from active, heartening interactions to callous, business-like ones in the course of the post-war 1950s and the early 1960s. Specifically, the fourth chapter illuminates how "uneven cooperation" in agriculture transpired across Eurasia from the Korean Peninsula to Ukraine, the Soviet Union's "breadbasket," contributing to the making of a self-

reliant “green revolution” in North Korea. Touching upon how the Soviet blueprint—state farms—was applied during the Korean War as an experiment, my analysis focuses on bilateral journeys of experts from both North Korea and the Soviet Union; while groups of North Korean agricultural experts went to the Soviet Union to learn “advanced” farming techniques and animal husbandry starting from 1952, Soviet experts also visited North Korea with the mission of examining local realities and teaching indigenous experts.

Chapter Five elucidates how North Korean, Soviet Russian, and Eastern European medical experts interacted, leading to North Korea’s preference for preventive medicine—later termed *Juche* medicine. I examine the ways bloc countries gave medical help to North Korea by sending supplies, transferring the ownership of hospitals and clinics, and providing exchange opportunities for education, internship, and treatment purposes in the 1950s. In addition, this chapter brings a new understanding of the Soviet influence on the rise of Korean traditional medicine in North Korea. Also, hitherto-unexplored topics are analyzed, such as Soviet medicine’s symbolic power for high-profile North Korean politicians and the Sino-Soviet competition waged over Kim Il-sung’s health.

The last chapter analyzes cooperation between North Korea and the Soviet Union in nuclear power generation, which culminated in the Soviet-North Korea agreement on atomic power in 1959, through which basic nuclear facilities were delivered to North Korea starting in 1961. Tracing the previously unexamined activities of North Korean nuclear experts such as To Sang-rok, later known as the “father of North Korean nuclear science,” I recount how North Korea perceived and acquired nuclear power through a variety of interactions with nuclear experts in the Soviet Union as well as international channels such as the Joint Institute of Nuclear Research (JINR) established in Dubna in 1956. This chapter also reconstructs how North Korea embraced atomic power for industrial, or “peaceful,” purposes,

bringing a revised understanding that North Korea was not always ready to “go nuclear,” as virtually all post-Cold War accounts have argued.

## Chapter One: Constructing “People’s Techno-Science” Based on the Soviet Blueprint, 1945-1950

In August 1947, the Union of Industrial Technology of North Korea (UITNK, *Pukchosŏn kongŏpkisul yŏnmaeng*) published in Pyongyang the first edition of its official journal, *Mass Science*, declaring its ambitious goals. These goals included to “arm the working masses with science and technology,” to defeat “ignorance, myth, and superstition,” and to “mechanize the country of three-thousand-li, modernizing the nation’s outdated and primitive economy and culture.” According to the journal, “science-technology” (*kwahak kisul*) was the only weapon that could bring “benefit and happiness” to the people, making the nation independent and prosperous. Expressing the country’s earnest request for the “tens of thousands of scientists and hundreds of thousands of engineers,” the journal demanded that workers, peasants, women, and students be passionate and creative in “arming themselves with technology and scientific knowledge.” In the pages to follow, Chŏng Chun-t’aek, who, despite his alleged pro-Japanese past, later became the first chairman of the State Planning Committee (SPC), the country’s command center for economic development, declared that “people’s techno-science” must be achieved in order to quickly repair the “limping industry” left by Japanese imperialists.<sup>68</sup> As North Koreans at the time clearly understood, however, the country inherited almost nothing from colonial rulers that were necessary to advance industrial economy. How was Chŏng’s

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<sup>68</sup> *Taejung kwahak* [Mass Science] 1 (August 1947), pp. 2-5. Originally, the official journal of the Union was *Kongŏp chisik* [Industrial Knowledge]. From 1949, the same journal returned to its initial name. Evidence shows that the Union was also referred as the All-Union of Industrial Technology of North Korea (*Pukchosŏn kongŏpkisul ch’ong yŏnmaeng*).

hopeful expectation that seems to be a naive misunderstanding about the gap between reality and ideals possible? How did his optimism reflect the formation of specific culture of science and technology in North Korea?

The division that came along with liberation of Korea from Japan in 1945 caused a serious shortage of scientists, engineers, and technicians, especially in the northern part of the country. As historian Kim Geun Bae [Kim Kŭn-pae] shows, the number of Korean experts increased during the colonial period only to supply a low-level labor force. It was extremely rare in this situation to have an outstanding figure such as Seok Joo-myung, a Korean lepidopterist who significantly contributed to the taxonomy of butterfly species in Korea.<sup>69</sup> As one can imagine, addressing this “colonial distortion” was perceived as an urgent task for the postcolonial planners and policymakers across the peninsula. Meanwhile, this sense of mission was also a byproduct of a global understanding that overcoming inefficiencies in industrial production and pursuing comprehensive economic development hinged upon the progress of science and technology.<sup>70</sup> Many postcolonial leaders largely shared the idea that “advanced”

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<sup>69</sup> Kim Geun Bae, *Han'guk kŭndae kwahakkisul illyŏk ūi ch'urhyŏn* (Munhak kwa Jisŏngsa, 2005).

<sup>70</sup> Hiromi Mizuno, *Science for the Empire: Scientific Nationalism in Modern Japan* (Stanford: Stanford University Press, 2009); Gabrielle Hecht ed., *Entangled Geographies: Empire and Technopolitics in the Global Cold War* (Cambridge: MIT Press, 2011); Aaron Moore, *Constructing East Asia: Technology, Ideology, and Empire in Japan's Wartime Era, 1931-1945* (Stanford: Stanford University Press, 2013); Hiromi Mizuno, Aaron S. Moore, and John DiMoia eds., *Engineering Asia: Technology, Colonial Development and the Cold War Order* (London: Bloomsbury Academic, 2018); Barak Kushner and Sherzod Muminov eds., *Overcoming Empire in Post-Imperial East Asia: Repatriation, Redress and Rebuilding* (London: Bloomsbury Academic, 2019).

techno-science should be introduced and managed under the auspices of the state.<sup>71</sup>

Unlike scholarly efforts on South Korea's culture of science and technology in the same period,<sup>72</sup> previous studies have only partially examined "people's techno-science," an attitude towards science and technology that the North Korean authorities saw as crucial for building an "advanced" country in the 1940s. We need some explanations regarding this disparity. First of all, in the 1940s the state-led development of science and technology in both North and South Korea remained merely a suggestion among planners. As the defection of To Sang-rok, one of the renowned Korean scholars of physics, to North Korea in 1946 shows, socio-political turmoil as well as material hardships did not allow Korean researchers to engage solely with research and education. This in turn makes it very difficult for scholars to reconstruct techno-scientific culture at that time. Although an economic and cultural cooperation agreement of March 1949 with the Soviet Union gave North Korea a chance to gain access to what it understood as "advanced" science and technology, the North Korean

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<sup>71</sup> Naomi Oreskes and John Krige eds., *Science and Technology in the Global Cold War* (Cambridge: The MIT Press, 2014); Jacob D. Hamblin, *The Wretched Atom: America's Global Gamble with Peaceful Nuclear Technology* (New York: Oxford University Press, 2021).

<sup>72</sup> Dong-Won Kim, "The conflict between the image and role of physics in South Korea," *Historical Studies in the Physical and Biological Sciences* 33:1 (2002), pp.107-129; "Imaginary Savior: The Image of the Nuclear Bomb in Korea," *Historia Scientiarum* 19:2 (2009), pp.105-118; Sheila Jasanoff and Sang-Hyun Kim, "Containing the Atom: Sociotechnical Imaginaries and Nuclear Power in the United States and South Korea," *Minerva* 47:2 (2009), pp.119-146; John DiMoia, "Atoms for Sale?: Cold War Institution-Building and the South Korean Atomic Energy Project, 1945–1965," *Technology and Culture* 51:3 (2010), pp.589-618.



leadership prioritized surviving the Korean War and carrying out post-war reconstruction projects over the development of science and technology. Furthermore, previous studies of North Korea's science and technology have largely omitted the important role of the Soviet Union in the early history of North Korea.<sup>73</sup> Unfortunately, for scholars, North Korea as a research topic remains completely separated from the Japanese history of science and technology during and after the colonial period.<sup>74</sup>

Using the following questions as guidelines, this chapter reconstructs how “people’s techno-science” unfolded, with a focus on its material basis and cultural representations from 1945 to 1950. What were the intentions and roles of the North Korean leadership, North Korean experts’ communities, and the Soviet authorities in the making of early North Korean culture of science and technology? What specific help did the Soviet Union give to North Korea, upon which “people’s techno-science” was predicated? Drawing upon Soviet archival sources, the first two sections of this chapter investigate how the Soviet Union played a role of an all-around provider to North Korea before and after the establishment of the North Korean government in September 1948. Throughout the second half of the 1940s, North Korean leaders repeatedly asked the Soviet Union for assistance that included experts, materials and equipment, and studying opportunities abroad. In the third section, I reconstruct the ways early North Korean culture of science and technology was represented, based on North Korean publications. The purpose of the section is to show what expectations and goals the North Koreans had in

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<sup>73</sup> For an exception, see Yu. V. Vanin, *Sovetskii Soyuz i Severnaya Koreya, 1945-1948* (Moscow: IV RAN, 2016).

<sup>74</sup> Hiromi Mizuno, *Science for the Empire*; Aaron Moore, *Constructing East Asia*; Hiromi Mizuno, Aaron S. Moore, and John DiMoia eds., *Engineering Asia*.

perceiving and performing what they understood as “techno-science,” which would greatly facilitate the country’s extended engagement with the socialist bloc in the subsequent decade.

### ***Soviet Assistance before September 1948***

According to historian Kang Ho-che, who examines the institutional history of North Korea’s science and technology drawing solely upon North Korean publications, the period from 1945 to 1950 was the period of “normalization of production” in North Korea. As the colonial authorities devastated industrial infrastructure of North Korea before fleeing, North Korean planners strived to repair damaged enterprises and factories that would function as the engine for the country’s economic development. With this urgent mandate, the North Korean leadership simultaneously endeavored to expand the size of its manpower with expertise by encouraging the defection of South Korean scientists and engineers, creating educational institutions, and offering studying opportunities to North Koreans in the Soviet Union.<sup>75</sup> However, Kang has only partially examined the role of the Soviet Union in this period, which served as the most important patron in the formation of North Korea as a country. The first two sections of this chapter examine the details and contexts of the Soviet assistance to North Korea in the 1940s, analyzing the conditions from which “people’s techno-science,” an attitude regarding how to build “advanced” North Korea, was formulated.

As early as November 1945, the North Korean leadership sought techno-scientific help from the Soviet Union. On November 14, 1945, Kim Il-sung made a personal request to Terenty F. Stykov, Kim’s political patron and the person in charge of managing North Korean affairs,

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<sup>75</sup> Kang Ho-che, *Pukhan kwahakkisul hyöngsöngsa I* (Seoul: Sönin, 2007), pp. 42-61.

urging him that he should facilitate the dispatchment of Soviet technical cadres.<sup>76</sup> While the hierarchy between the Communist Party of Korea (*Chosŏn kongsandang*) in Seoul and its North Korean branch (*Pukchosŏn pun'guk*, hereafter the Party) in Pyongyang was not clearly established,<sup>77</sup> Kim Il-sung requested that 1,500 Soviet Koreans, ethnic Koreans with Soviet citizenship, should come to support the Party's administrative works. However, less than 10% (about 120 Soviet Koreans) of the original number that he requested arrived in 1945. It is difficult to determine the precise number of Soviet Koreans who entered North Korea in 1945.<sup>78</sup> In addition, Kim Il-sung requested permission to organize the Korean-Soviet Cultural Association that would serve as a channel for receiving "advanced" Soviet culture and to transfer Soviet Korean editors of a Korean-language newspaper under the Primorsky Provincial Military District to the Party for its newspaper and propaganda works. Given that Kim Il-sung dreamed of national independence while serving as a Red Army captain in the Soviet Far East from 1941 to 1945, it was natural for him to place his highest expectations and hopes in the Soviet Union as a key supporter for his project of building an independent and strong socialist country.

Accordingly, the Soviet Union responded to the North Korean leader by dispatching a

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<sup>76</sup> Ki Kwang-sŏ, *Pukhan kukka ūi hyŏngsŏng kwa Soryŏn* (Seoul: Sŏnin, 2018), p. 207.

<sup>77</sup> The North Korean Branch of the Communist Party of Korea (unofficially renamed the North Korean Communist Party) merged with the Korean New People's Party to create the Workers' Party of North Korea (WPNK) in August 1946. Later the WPNK was reorganized into the present Workers' Party of Korea. For a typical account regarding the early history of the Workers' Party of Korea, see Sŏ Tong-man, *Puk Chosŏn sahoejuŭi ch'eje sŏngnipsa, 1945-1961* (Seoul: Sŏnin, 2005).

<sup>78</sup> Ki Kwang-sŏ, *Pukhan kukka ūi hyŏngsŏng kwa Soryŏn*, pp. 208; 325.

group of Soviet Korean experts from Central Asia.<sup>79</sup> Upon the approval of Kim Il-sung's additional requests by Stalin, made in March 1946, Soviet Korean "specialists" with a variety of expertise arrived at Pyongyang from 1946 to 1948.<sup>80</sup> One of the most influential groups was a team of thirty-seven experts including Kim Sŭng-hwa, Nam Il (who became later the First Vice Minister of Education), and Pang Hak-se (First Vice Minister of Internal Affairs), many of whom would soon start working in crucial positions in both the future North Korean cabinet and educational institutions.<sup>81</sup> The influx of the Soviet Koreans into North Korea continued up until the first half of 1948, as Kim Il-sung made a series of appeals for educators of varying degrees (professors and lecturers) as well as Russian-language instructors. However, these requests were only partially fulfilled: instead of 100 persons, as set in the initial request, only thirty-four came to North Korea in 1947, with an extensive focus on Russian-language education.<sup>82</sup> In early 1948, a group of twenty-two Soviet Koreans from Kazakhstan arrived to teach Russian language.<sup>83</sup>

These constant requests for the dispatch of Soviet Koreans were an important part of a large scheme to satisfy North Koreans for their both growing interests about the Soviet Union

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<sup>79</sup> For a compilation of biographies and memoirs of the Soviet Koreans who served in North Korea in the 1940s and the 1950s, see Chang Hak-pong, *Pukchosŏn ŭl mandŭn koryŏin iyagi* (Paju: Kyŏngin Munhwasa, 2006) and I.A. Konoreva and I.N. Selivanov eds., *Sovetskie koreitsy v severnoi koree: issledovaniya, vospominaniya, dokumenty*. Chast' 1 (Kursk: Kursk State University, 2018).

<sup>80</sup> Ki Kwang-sŏ, *Pukhan kukka ŭi hyŏngsŏng kwa Soryŏn*, p. 325.

<sup>81</sup> RGASPI, f. 17, op. 162, d. 38, l. 137; 142.

<sup>82</sup> RGASPI, f. 17, op. 162, d. 38, l. 192; 209.

<sup>83</sup> RGASPI, f. 17, op. 162, d. 39, l. 26; 30.

and needs to learn Russian language. On September 6, 1946, Stykov wrote in his personal log that “interests in the lives of the Soviet people and the Soviet culture” were growing among the North Korean people.<sup>84</sup> Capturing this “favorable” social atmosphere to build a socialist regime on the model of the Soviet Union, North Korean planners widely propagandized various reasons for learning from the Soviet Union through the lives of the Soviet Korean citizens. One North Korean booklet, presumed to have been published in 1946, compared the lives of “Korean comrades” living in the Soviet Union before and after the October Revolution in 1917.<sup>85</sup> The core narrative of the booklet was that Russia, an agrarian country, had been transformed under the leadership of Stalin into a “great industrial country,” matching with that of the “advanced European civilization.” Labor efficiency dramatically increased, the narrative went on, by “executing all of the hard works with machines.” Amid this wave of change, the door to educational opportunities also opened to Soviet Koreans, resulting in “tens of thousands” of university students and a number of doctoral degree holders. A similar booklet of the same period emphasized that the Koreans in the “North Pole Star” collective farm in Uzbekistan “extensively introduced techno-science” into farming to increase the grain yield.<sup>86</sup> Although this exaggerated portrayal of the role of Soviet Koreans did not mention tragic histories such as their forced displacement in 1937 and the category of enemy nation that was designated for

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<sup>84</sup> “Dnevniki T.F. Shtykova I (September 6, 1946).” [https://www.krm.or.kr/krmts/link.html?dbGubun=SD&m201\\_id=10004559&local\\_id=10012665](https://www.krm.or.kr/krmts/link.html?dbGubun=SD&m201_id=10004559&local_id=10012665).

<sup>85</sup> *Soryŏn e kŏju hanŭn chosŏn inmindŭl ŭi saenghwal hyŏngp’yŏn e taehan pogo* (Ch’ŏngjin: Chosŏn’gongsandang Ch’ŏngjin-si Wiwŏnhoe, [n.d.]).

<sup>86</sup> ChoSso Munhwa Hyŏp’oe Ch’ŏngjin-si Wiwŏnhoe, *Ssoryŏn e innŭn Chosŏnin Pukkŭksŏng kkorhojŭ* (Pyongyang: ChoSso Munhwa Hyŏp’oe Chungang Wiwŏnhoe Sŏnjŏnbu, 1947?).

Soviet Koreans,<sup>87</sup> it was well suited to fueling social aspirations to learn from the “advanced” Soviet Union.<sup>88</sup> In December 1946, the North Korean Provisional People’s Committee (NKPPC) decided to establish within one month language training centers in major cities and counties such as Pyongyang, Sinuiju, and Ch’ŏngjin.<sup>89</sup> The same decision portrayed the Soviet Union as a country that “had built and developed the best scientific culture in the world,” arguing for the importance to “translate literature ... to absorb such excellent culture.” Due to distorted colonial rules, it continued, the “talent to translate the Russian text was extremely rare” at that time in North Korea, making the training of experts and the leadership with the Russian-language skills as an urgent task. In the same month, the Soviet authorities in Moscow also made a decision to train Soviet Korean educators to teach Russian language at various North Korean institutions and to provide necessary materials to support them.<sup>90</sup>

From early 1946, the North Korean leadership continuously requested the Soviet

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<sup>87</sup> For some accounts of the Soviet Koreans, see Terry Martin, *The Affirmative Action Empire: Nations and Nationalism in the Soviet Union, 1923–1939* (Ithaca: Cornell University Press, 2001); Jon K. Chang, *Burnt by the Sun: The Koreans of the Russian Far East* (Honolulu: University of Hawai’i Press, 2016); Steven E. Marritt, “The Great Purges in the Soviet Far East, 1937-1938” (PhD Diss., University of California, Riverside, 2000).

<sup>88</sup> For an account that examines similar social aspirations of South Korea to learn from and emulate the United States in the 1950s, see Chang Se-chin, *Sangsang toen Amerik’a: 1945nyŏn 8wŏl ihu Han’guk ūi neisyŏn sŏsa nŭn ōttŏk’e mandŭrŏjyŏnnŭn’ga* [Imagined America: How Narratives of a Nation in South Korea were Made after August 1945] (Seoul: P’urŭnyŏksa, 2012).

<sup>89</sup> *SBNK* 5, pp. 668-669.

<sup>90</sup> RGASPI, f. 17, op. 162, d. 38, l. 140.

Union provide academic workers and supplies for higher education institutions, especially Kim Il-sung University. Subsequently, the leaders of both countries took an extraordinary interest in issues such as the treatment and compensation of academic workers and the procurement of educational supplies. In July 1946, when the plan to establish Kim Il-sung University was already approved by the North Korean authorities,<sup>91</sup> Andrei A. Romanenko, the Deputy Commander in charge of civil affairs of the Soviet 25th Army, requested education-related support from his home country.<sup>92</sup> As North Korean planners asked for forty-two professors and relevant educational materials, the Soviet authorities in Pyongyang emphasized the destitute state of North Korea's education system, stressing that faculty (excluding one in medicine) should be dispatched promptly. On October 4, Stykov sent a letter to the president of Leningrad State University, the oldest university in Russia, asking for various curricula and books to be sent.<sup>93</sup> Though his request was immediately accepted, the university notified him that additional requests should be made due to the lack of Korean-language books.<sup>94</sup> At the same time, Stykov wrote to a Soviet Vice Minister of Higher Education, promising that Soviet academic workers at Kim Il-sung University would be able to bring their families along, and that food, housing, and other public services would be guaranteed.<sup>95</sup> Thirty academic workers, including an advisor to the university rector, were sent.<sup>96</sup> In addition, Stykov might have asked

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<sup>91</sup> *SBNK* 5, pp. 682-683.

<sup>92</sup> TsAMORF, f. 172, op. 614631, d. 27, ll. 41-45.

<sup>93</sup> TsAMORF, f. 172, op. 614631, d. 27, l. 39.

<sup>94</sup> TsAMORF, f. 172, op. 614631, d. 27, l. 38.

<sup>95</sup> TsAMORF, f. 172, op. 614631, d. 27, l. 26.

<sup>96</sup> TsAMORF, f. 172, op. 614631, d. 27, l. 27.

the North Korean authorities as well as Romanenko about salary issues. On October 25, the NKPPC stipulated the terms of treatment that Romanenko relayed to Stykov following the chain of command.<sup>97</sup> Finally, the Soviet Ministry of Higher Education seemed to have approved the conditions set by the North Korean leadership.<sup>98</sup>

The North Korean leadership's hand-written request to Stykov, dated December 12, 1946, indicates the bleak situations that plagued North Korea's scholarly communities in the late 1940s.<sup>99</sup> Beginning with a desperate appeal, the request stated that North Korea's first university stored only 6,000 books in the library, three-fifths of which were obsolete books written in Japanese or English. Although ten laboratories were formally installed, they had neither equipment nor devices, let alone a single copy of the latest academic book. To make matters worse, the request mentioned that only a few scholars had academic degrees, and there

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<sup>97</sup> TsAMORF, f. 172, op. 614631, d. 27, l. 30.

<sup>98</sup> TsAMORF, f. 172, op. 614631, d. 27, l. 29. The compensation level was set by the North Korean leadership as follows: 1. Monthly wages: an advisor to the university rector (20,000 yen); a dean of a department (15,000 yen), a professor (14,000 yen), an assistant professor and a senior lecturer (12,000 yen). All Soviet academic workers would receive additional 20,000 yen as an appointment bonus upon their arrival in North Korea. 2. Rations would be guaranteed to Soviet academic workers and their families. 3. Accommodation, heating, and electricity would be provided for free. TsAMORF, f. 172, op. 614631, d. 27, l. 28. Given that monthly wage for the rector of the university was set at 3,000 yen and a dean of a department at 2,500 yen, it is not hard to imagine the volume of how much compensation the North Korean leadership suggested to Soviet educators. *Kim Il-sung taehak pallyönggön* [On the Appointment in Kim Il-sung University] (Pyongyang: [s.n.], 1947).

<sup>99</sup> TsAMORF, f. 172, op. 614631, d. 27, ll. 46-51.



were no standardized textbooks to teach the next generation of North Korean researchers. The North Korean authorities, the request continued, had no other choice but to rely on “fatherlike help” (*otecheskaya pomoshch*) of the Soviet Union to overcome the “mental backwardness,” left behind by Japanese imperialists, and to revive “national culture.” The list attached to the request shows the desperate expectations of North Korean planners for the Soviet Union; North Korea hoped to receive 285,000 books in various fields including social sciences (70,000), politics (50,000), industry and medicine (30,000 each), physics and mathematics, philosophy and history, and agriculture (10,000 each). In addition to the printed materials, the request went on for laboratory equipment, devices, machines, seeds, and breeders, all of which were necessary to make North Korean laboratories “modern.” However, the actual amount of Soviet assistance, according to the North Korean estimate based on what was received before 1950, was less than half of what was originally requested.<sup>100</sup>

Sending North Koreans to the Soviet Union formed a crucial part of the country’s reliance on its Soviet patron. Indeed, the North Korean leadership strived to send groups of students and researchers to the Soviet Union for both study and training, which continued without a sharp decline until 1956. It started right after land reform, completed in early April 1946. On May 21, 1946, Kim Il-sung sent a request to Romanenko, suggesting that 200-300

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<sup>100</sup> According to North Korean documents, the Soviet 25th Army donated 25,524 volumes of “various books” to Kim Il-sung University, which accounted for about 26% of the university’s total collection of 98,000 in 1948. Until 1950, in addition to 2,600 various experimental tools and 2,200 diagrams, Kim Il-sung University received around 40,000 books, contributing to the university’s total collection of 135,000 volumes. *Ten-Year History of Kim Il-sung University* (Pyongyang: Kim Il-sung University Press, 1956), pp. 37-38; 51; 59.

North Korean students move to Moscow to learn Russian and to study at Soviet universities and technical schools starting in 1947.<sup>101</sup> This request was readily accepted, leading to the dispatch of 299 students in 1946 and 140 students (120 undergraduate students and twenty graduate students) the following year.<sup>102</sup>

Understandably, the North Korean leadership had high expectations on those students, who would study in the Soviet Union. On August 20, 1947, a group of 140 students visited Kim Il-sung before their departure.<sup>103</sup> At this event, Kim Il-sung urged the students that they must remember the “honor and expectations their country had for them,” expressing his personal hope that they be the “most zealous in learning all the advanced scientific culture of the Soviet Union.” Fueling these expectations, one North Korean officer, who returned home in September 1947 after a two-month-long tour in the Soviet Union, expressed his impression that the first group of North Korean students (who went to the Soviet Union in 1946) had “improved their academic performance” in just a year.<sup>104</sup> He recounted that the Soviet authorities assigned “outstanding professors,” provided special dormitories, and sent “young Soviet people” to give extracurricular help in learning Russian for North Korean students. In accordance with the agreement between the Soviet Ministry of Higher Education and the North Korean People's Committee (NKPC), the second group of students would receive a monthly stipend of 500 rubles for the entire period of their study and be guaranteed accommodation on the same terms as Soviet citizens. According to a protocol signed before September 1948, the

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<sup>101</sup> TsAMORF, f. 379, op. 166654, d. 1, l. 13; 16.

<sup>102</sup> RGASPI, f. 17, op. 125, d. 543, l. 125.

<sup>103</sup> *Rodong Shinmun* August 23, 1947.

<sup>104</sup> *Rodong Shinmun* September 28, 1947.

stipend for North Korean graduate students in the Soviet Union increased to 900 rubles.<sup>105</sup> Still, half of the entire educational expenses were borne by North Korea.<sup>106</sup>

From early on, North Korean planners also requested Soviet experts to offer practical help in applying “advanced” industrial techno-science in North Korean factories. After liberation of 1945, the North Korean leadership faced urgent tasks such as managing the nationalized industries and restoring railroad transportation. At the end of 1946, Stykov requested the dispatch of eighty-two Soviet experts in the fields of industry and transportation. However, “not a single expert” was sent by May 1947. As Japanese experts fled North Korea, the situation was exacerbated. Subsequently, the North Korean authorities were “losing confidence” in the management of its nationalized industries and transportation services since “repeated requests” for Soviet experts were ignored.<sup>107</sup> Though the North Korean Central Research Institute (NKCRI, *Pukchosŏn chungang yŏn’guso*) was established in February 1947 in an effort to “study and solve the problems of technical materials,” the Institute was not immediately successful.<sup>108</sup>

The aforementioned circumstances made the help of military engineers and technicians of the Soviet 25th Army that was stationed in North Korea until December 1948 precious. One North Korean journal of science contains several episodes about Soviet experts, who provided technical assistance in various North Korean industrial sites including Hwanghae Steelworks,

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<sup>105</sup> TsAMORF, f. 142, op. 106601, d. 1, l. 5.

<sup>106</sup> TsAMORF, f. 142, op. 106601, d. 1, ll. 2-4.

<sup>107</sup> APRF, f. 45, op. 1, d. 346, ll. 4-6.

<sup>108</sup> *SBNK* 5, p. 197.

Chŏngjin Steelworks, and Sŏngjin Steelworks from 1946 to 1947.<sup>109</sup> Three main themes ran through these episodes. First, postcolonial fury directed at the “technical famine,” a metaphor used by contemporary North Koreans to describe the lack of qualified industrial managers in the country. Second, North Korea’s gratitude for Soviet experts, who not only assisted the reconstruction of industrial sites, but also taught “advanced” ways to operate factories. Third, industrial achievements made by North Korean experts under Soviet guidance. Indeed, these episodes portray Soviet experts as specialists, not only armed with “advanced” knowledge, but also led by their own examples. For instance, a couple of Soviet engineers assigned to Hwanghae Steelworks, the “heart of North Korean heavy industry,” made several rounds of trips to and from Sakhalin to solve the difficulties of obtaining raw materials for the production of coke, coal-based fuel, as well as dismissed “haphazard” Japanese methods. They also established the “scientific method,” combating “technical secrecy,” which prevented Koreans from sharing fruits of modernity with their colonial masters. Furthermore, these Soviet engineers organized a workers’ meeting every day, reviewed virtually all problems of various workshops such as coke batteries and blast furnaces, and penned manuals for standard operation. As a result, the damaged furnaces were restored. Overall, these anecdotes emphasized the individual virtues of Soviet engineers, and it seems that the same accounts were reproduced by the North Korean leadership to bolster the technical training system, in which unskilled persons received training from seasoned workers.

The visit by Soviet scholars formed another significant part of Soviet assistance in this period, which gradually gave North Korea a sense of belonging in the socialist bloc. On July

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<sup>109</sup> *Mass Science*. Special edition in celebration of the Korea-Soviet friendship. (December 1948), pp. 13-32; 42-53.

21, 1948, right before the establishment of the North Korean government, a group of seventeen Soviet professors visited Pyongyang to deliver lectures in various disciplines to North Korean researchers as well as the general public.<sup>110</sup> This group included “renowned Soviet scientists” such as Alexander I. Oparin, a “giant” in biology, and M.S. Arutyunyan, a well-known professor at Moscow Medical University.<sup>111</sup> These Soviet scientists offered various lectures for a total of 504 hours in three months including the first summer seminar for university professors, held in Pyongyang, in August 1948. This seminar that was attended by 274 North Korean professors from eleven universities as well as seventeen engineers was characterized as a “novel groundbreaking source” for the country’s science education that had been “completely severed from advanced technological training.” Their service set a precedent for upcoming Soviet scholars, who would work mainly as advisors at North Korean universities and colleges starting from 1949.<sup>112</sup>

### ***Soviet Assistance after September 1948***

The establishment of the North Korean government in September 1948 signaled that Soviet assistance would be strengthened both quantitatively and qualitatively, compared to the previous years. This also meant that the price that North Korea had to pay for accessing such

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<sup>110</sup> *Mass Science*. Special edition in celebration of the Korea-Soviet friendship. (December 1948), pp. 33-36.

<sup>111</sup> *Chosŏn chungang nyŏn'gam (1949nyŏn)* (Pyongyang: Chosŏn Chungang T’ongsinsa, 1949), pp. 133-134. Although Vanin saw that this trip had been conducted in 1947, it was a mistake. Yu. V. Vanin, *Sovetskii Soyuz i Severnaya Koreya, 1945-1948*, pp. 202-203.

<sup>112</sup> *Ten-Year History of Kim Il-sung University*, pp. 58-63.

“advanced” science and technology would be raised correspondingly. In February 1948, the Soviet Ministry of Higher Education submitted a detailed proposal to the Soviet Ministry of Foreign Affairs on the issue of providing assistance to North Korea.<sup>113</sup> With a budget of 1.5 million rubles, the proposal laid out educational assistance to North Korean universities in the period from 1948 to 1949. The size of the faculty to be sent to North Korea was set at thirty-one plus ten interpreters. Most importantly, their salaries, transportation expenses, paid vacation, and miscellaneous stipends would be borne by the North Korean government. In addition, the same proposal shows the concerted nature of Soviet assistance in that it required close coordination among various Soviet ministries including those of Foreign Trade, Shipping, and Health. For example, the Soviet Ministry of Marine Transport, according to the same proposal, was supposed to deliver lab equipment and model devices from Odessa in the Black Sea to Pyongyang by July 15, 1948. This proposal was formalized through a decision of the Soviet cabinet in December of the same year.<sup>114</sup>

A Soviet document, signed by Stalin in December 22, 1948, clearly shows the extent of Soviet planners’ interest in assisting North Korea.<sup>115</sup> According to this document, Soviet planners sought to increase the volume of trade turnover, render technical assistance through the dispatch of experts, and strengthen cultural ties between the two countries. Upon the acceptance of the North Korean leadership’ request, Soviet leadership approved the dispatch

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<sup>113</sup> AVPRF f. 0102, op. 4, p. 8, d. 10, ll. 14-21.

<sup>114</sup> Shen Zhihua ed., *Chaoxian zhan zheng: Eguo dang an guan de jie mi wen jian* [The Korean War: Declassified Documents from Russian Archives] Vol. 1 (Taipei: Zhong yang yan jiu yuan jin dai shi yan jiu suo, 2003), pp. 109-112.

<sup>115</sup> RGASPI, f. 17, op. 3, d. 1073, ll. 49; 115-117.

of its experts to work in various North Korean ministries (metallurgy, machine-building, and transportation) and the SPC. In addition, a decision was made to order military experts, who were already working in the Civil Administration of the Soviet 25th Army, to remain in North Korea to continue their service in the fields of communications, finance, agriculture, commerce, and counterintelligence. In May 1949, *Rodong Shinmun* praised this multi-faceted Soviet assistance since liberation of 1945, summarizing how “Soviet science” contributed to the progress of the North Korean economy.<sup>116</sup>

The meeting between Kim Il-sung and Stalin in Moscow in early March 1949 presents what the North Korean leadership hoped to acquire in terms of science and technology.<sup>117</sup> In response to Stalin's question of what kind of assistance he wanted to specifically get, Kim Il-sung answered that he wanted “machinery, equipment, and spare parts in industry, communications, transportation, and economy.” He also requested Soviet experts and plans for various projects including Anju irrigation facility, Chŏngjin Steelworks, Sup’ung hydropower plant, and geological surveys. Also, Kim proposed to build the fifty-eight kilometer-long Aoji-Kraskino railway with Soviet help. In order to tighten North Korea-Soviet cultural links, Kim Il-sung suggested a human exchange that included sending Soviet scholars to North Korea and sending North Korean students as well as experts to the Soviet Union for research and training. Agreeing with his North Korean guest, Stalin worried that the language barrier would cause difficulties for communication. Kim Il-sung did not forget to add that although the Russian-language program was being carried out in “all schools and higher education institutions” in North Korea, the number of qualified teachers turned out to be insufficient. Meanwhile, Chŏng

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<sup>116</sup> *Rodong Shinmun* May 25, 1949.

<sup>117</sup> “Beseda (March 5, 1949),” APREF, f. 45, op. 1, d. 346, ll. 13-23.

Chun-t'aek, the Chairman of the SPC, made only one remark, asking whether such proposed exchanges of experts were feasible. Annoyed, Stalin confirmed that it was possible, stating that these issues had already been discussed. These hopes and expectations displayed by North Korean leaders would be reflected in a bilateral agreement that was concluded a week later.

As the Agreement on Economic and Cultural Cooperation between North Korea and the Soviet Union was signed on March 12, 1949, techno-scientific exchanges between the two countries were to be greatly expanded.<sup>118</sup> According to Article 4 of the agreement that was directly related to science and technology, the two countries would promote exchanges in the fields of commerce and agricultural production through sending experts, rendering technical assistance, organizing exhibitions, and exchanging seeds and plant specimens.<sup>119</sup> The following day, the Soviet Politburo revised and approved the draft on the provision of technical assistance,<sup>120</sup> which was largely divided into two categories: drawing up plans for design of industrial enterprises (e.g. the completion of Chōngjin Steelworks) and the dispatch of a geological survey team. A few days later, the Soviet Politburo approved a series of regulations for Soviet scientific workers in North Korea.<sup>121</sup>

Between 1949 and 1950, the North Korean leadership continued to request Soviet specialists, for their expertise was essential in drawing up and conducting various projects of North Korea, while trying to send its workers to train at Soviet factories. For example, North Korea requested Soviet film crew to film the commemoration of the 4th anniversary of

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<sup>118</sup> RGASPI, f. 17, op. 162, d. 40, ll. 8; 113-115.

<sup>119</sup> *SBNK 28*, pp. 343-345.

<sup>120</sup> RGASPI, f. 17, op. 162, d. 40, ll. 8; 118-127.

<sup>121</sup> RGASPI, f. 17, op. 3, d. 1075, ll. 10; 88-89.



liberation, which was approved in August 5, 1949.<sup>122</sup> In September, the Soviet Politburo not only handed over technical documents related to the construction of the Hongŭi-Khasan railway to its North Korean counterpart,<sup>123</sup> but also sent two additional Soviet engineers to help build the Hongŭi-Kraskino railway.<sup>124</sup> In November, at the request of the North Korean government, the dispatch of nine experts in the fields of irrigation (five hydraulic scientists and one geodesic engineer), meteorology (one hydrometeorological engineer and one synoptic meteorological engineer), and communications was approved for a period of two years.<sup>125</sup> In March 1950, eighteen North Korean textile experts were approved to be sent to the textile complex in Stalinabad for training purposes.<sup>126</sup>

A watershed moment for the nature of Soviet assistance in science and technology to North Korea was the outbreak of the Korean War in June 25, 1950. Two months prior, on April 10, Kim Il-sung paid a visit to Moscow to meet with Stalin, before launching an invasion to South Korea.<sup>127</sup> Emphasizing the role of the Soviet Union in North Korea's economic development, Kim Il-sung began the conversation, saying that he wanted to discuss the issue of machine-building. According to him, North Korea did not have a chance to extensively

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<sup>122</sup> RGASPI, f. 17, op. 3, d. 1077, l. 65.

<sup>123</sup> RGASPI, f. 17, op. 162, d. 41, l. 12.

<sup>124</sup> RGASPI, f. 17, op. 162, d. 41, ll. 12-13.

<sup>125</sup> RGASPI, f. 17, op. 3, d. 1078, ll. 110-111.

<sup>126</sup> RGASPI, f. 17, op. 3, d. 1080, ll. 41; 154.

<sup>127</sup> The original minutes were unearthed by Shen Zhihua, translated in Chinese, and reprinted in Shen Zhihua ed., *Chaoxian zhan zheng* Vol. 1, pp. 332-335. I have consulted the digital version of the original minutes, hand-written in Russian, at the National Institute of Korean History.

develop the machine-building industry in the near future. Instead, Kim continued, the country tried to develop its metal industry, one of their few export resources, by obtaining automobiles, tractors, and devices necessary for the machine-building industry. In addition, the list of North Korea's expectations for Soviet assistance went on to include power facilities, electric trains, and transformers to supply hydroelectric power to railways. Characteristically, Stalin agreed. While referencing a group of twenty-nine North Korean workers sent to the Soviet Union in 1949, Kim Il-sung obtained Stalin's consent in dispatching North Korean experts to learn skills in fields such as "air drilling machines, rubber products, and housing construction." Kim Il-sung also said that he would request the dispatch of Soviet experts again. His rationale was that more than half (seventy-three) of 136 Soviet experts, excluding military advisors and college professors, who were working in North Korea as of April 1950 would return home soon. Stalin readily agreed, too.

However, as Kim Il-sung's calculation that unifying the country could be "completed" within two weeks or two months soon turned out to be a fatal misjudgment,<sup>128</sup> Soviet assistance to North Korea began to focus on its commitments to the survival of the North Korean state. As Chapter Two details, a number of military specialists were sent to North Korea and Manchuria to work as advisors or trainers for the Korean People's Army (KPA) at the request of Kim Il-sung. Furthermore, North Korean leadership would increasingly request Stalin send weapons, ammunitions, production equipment for weapons, automobiles, and oil products to continue its own war efforts. The price for this assistance would become burdensome for North Korea's economy.

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<sup>128</sup> "A telegram from Tunkin to Vyshinski (September 3, 1949)" AVPRF, f. 059a, op. 5a, p. 11, d. 4, ll. 90-91.

### ***“People’s Techno-Science”: The Only Path to an Advanced Economy***

In order to understand how “people’s techno-science” was perceived and practiced in North Korea from 1945 to 1950, this section begins with a brief discussion about the geopolitics around the end of World War II. While fighting the Axis Powers, the leaders of the Allied Powers including the U.S., the United Kingdom., and the Soviet Union had a series of high-level conferences from November 1943 to July 1945, in which the post-war world order was discussed. However, these conferences largely focused on shaping the future of broader Europe after the defeat of Nazi Germany, leaving the fate of the Korean Peninsula in question. In one of these conferences held in Yalta in February 1945, according to historian Roh Kyung Deok, the Allied leaders agreed on the occupationism (*chŏmnyŏng juŭi*) principle that would allow the rise of local political forces in the interests of an occupying power in Southern European peninsulas and Eastern Europe. Originally, the principle was confined to Europe, and no agreement was reached in implementing it in East Asia after the defeat of Imperial Japan in August 1945.

However, facing strong “leftist” surges in the southern part of the Korean Peninsula, the U.S. Military Government in Korea implemented the principle despite strong opposition from the U.S. State Department.<sup>129</sup> In addition, for the majority of Koreans, who had just escaped thirty-six years of colonial rules, the “trusteeship” proposal that suggested a provisional rule of the Korean Peninsula by United Nations-trusted foreign powers was

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<sup>129</sup> Roh Kyung Deok, “Yalt'a hoedam tasi pogi” (in Korean), *Sach'ong* Vol. 87 (January 2016), pp. 317-349.

unwelcomed.<sup>130</sup> Meanwhile, social chaos in North Korea subsided relatively quickly, compared to its southern counterpart. Defining itself as an “avant-garde mass party,” the Party sought to expand its membership, reaching 720,000 members, or 7% of the North Korean population, by March 1948. Simultaneously, North Korean planners paid the greatest attention to laying a strong economic foundation with the goal of establishing an independent and unified government. Both food self-sufficiency that was said to have been achieved in 1948 and ongoing economic development were propagandized by the North Korean authorities as a way to show the legitimacy of the regime and the superiority of socialism, which was further strengthened by the smooth execution of the two-year plan (1949-1950) following the two one-year plans in 1947 and 1948. Science and technology were widely popularized as the most important elements of the “advanced” Soviet Union and something that all North Koreans should race to learn and acquire.

Against this background, “people’s techno-science” took its specific form amid nationalization of major industries and various “democratic reforms” starting with the land reform of 1946. As discussed earlier, facing tremendous material hardships, North Korean planners strived to secure technical manpower above all else, declaring in August 1946 that any engineer would be valued “regardless of nationality.”<sup>131</sup> But, this policy bore little fruit. In early 1947, the North Korean leadership promised “hospitable treatments” to North Korean engineers and preferential treatment to Japanese engineers.<sup>132</sup> In June 1947, the NKPC decided

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<sup>130</sup> Chōng Yong-uk, *Haebang chōnhu miguk ūi taehanjōngch'aek* (Seoul: Seoul National University Press, 2003).

<sup>131</sup> *SBNK 5*, p. 176.

<sup>132</sup> *SBNK 5*, pp. 178-179.

to promote technical education, declaring that it would train a large number of “national technical cadres.”<sup>133</sup> However, the pursuit of “advancement” at this time was never materialized as a concrete and sustained policy.

In the fall of 1946, when Kim Il-sung University was opened as the cradle of North Korea’s science and technology, the country’s engineers gathered together around the UITNK. Having the Association of Industrial Technology (*Kongŏp kisul hyŏphoe*) as its institutional basis, the UITNK was created on April 14, 1946, with the core goal of developing the nation’s industry through the “sharpening” and improvement of technology. In October, the UITNK established nine specialized subcommittees in the fields of mining, electricity, machinery, civil engineering, architecture, chemistry, and textiles, declaring its goal to technically guarantee the completion of the first one-year plan in 1947.<sup>134</sup>

From the 1940s onwards, in North Korean minds, both science (*kwahak*) and technology (*kisul*) were understood as essential and inseparable factors for modern economic development, which led to the combined use of the two terms in one notion as “science-technology.”<sup>135</sup> Subsequently, in the second half of the 1940s, scientist (*kwahakcha*) and technician or engineer (*kisulja*) were regarded as equally important experts, though their workplaces ranged from a university laboratory to a workshop in a factory. Given the absolute shortage of scientists after liberation, it is interesting to note that North Korea’s technological

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<sup>133</sup> *SBNK* 5, pp. 198-200.

<sup>134</sup> *Industrial Knowledge* 1 (January 1949), pp. 12-14; *SBNK* 27, pp. 353-355.

<sup>135</sup> For the wartime origins of the Japanese term *kagaku gijutsu*, literally meaning “science-technology,” which was exploited by Japanese technocrats in the period from the late 1930s to the early 1940s, see Hiromi Mizuno, *Science for the Empire*, pp. 43-68.

community played a leading role in rallying the experts' capability. A leading example is the First Convention of Scientists and Technicians in North Korea (CSTNK), held on October 17-18, 1946, which has the status of the "first conference of North Korean scientists and engineers" in the official North Korean narrative.<sup>136</sup> In response to the First North Korean Convention of Cultured People (*Pukchosŏn munhwain chŏnch'e taehoe*), held on October 15-16, the North Korean technical community formed the All-Union of North Korean Science and Technology (*Pukchosŏn kwahak kisul ch'ong yŏnmaeng*) that included "industrial engineers, natural scientists, medical scientists, fisheries experts, and agricultural and forestry engineers" in order to improve the performance of such technicians and to conduct organized activities.<sup>137</sup> In the first CSTNK, held in the auditorium of Pyongyang No. 1 Middle School on October 17, the country's experts expressed their wish for the establishment of a "state-run research institute," which was realized with the establishment of the NKCRI early the following year. However, due to the lack of material support, the NKCRI closed after a few months, transferring its functions to Kim Il-sung University.<sup>138</sup>

Simultaneously, Kim Il-sung's long-standing view of the place of science and technology in his statecraft and its relationship with economic development became concretized. At the first CSTNK, Kim Il-sung emphasized the importance of science and technology in developing industry with a slogan of "technology determines everything,"<sup>139</sup> a

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<sup>136</sup> Yun Myŏng-su, *Chosŏn kwahakkisul paljŏnsa (Haebang hup'yŏn I)* (Pyongyang: Kwahak Paekkwajŏn Chonghap Ch'ulp'ansa, 1994), pp. 12-14.

<sup>137</sup> *Rodong Shinmun* October 11, 1946.

<sup>138</sup> Kang, *Pukhan kwahakkisul hyŏngsŏngsa I*, pp. 101-104.

<sup>139</sup> The speech, allegedly made by Kim Il-sung at this event, was later formalized as "On the Task of

rather crude expression of his hopes that technology would make future North Korea affluent and prosperous. Kim started his speech by arguing that “the founding of democratic Korea relies solely on scientists and engineers.” He said that through the nationalization of major industries, those scientists and engineers “became the masters” of their own country. The biggest and “only force,” Kim stressed, which could revitalize the nation was “technology.” Kim raised six immediate issues as the main tasks before the country’s experts. First, they had to restore factories and enterprises, establish a clear plan, and focus on the development of machine industries. Second, as seen in the case of China that “still remained in a semi-colonial situation due to the lack of its own engineers despite a large land mass,” North Korea must nurture its own experts and strive to acquire skills from foreign counterparts. Third, engineers should reinforce the idea of protecting machines. Fourth, through political training, engineers should become the “most politically important fighters.” Fifth, North Korea must improve the compensation for engineers, who were currently unsatisfied, through increased economic power. Sixth, statistics should be made at each level of industrial enterprises. These tasks, set by Kim Il-sung himself, reflected the widespread perception that the introduction of “advanced” science and technology would directly lead to the improvement of productivity, making North Korea an industrial power. At the end of his speech, Kim Il-sung emphasized the importance of experts, concluding “[nothing] can be solved without you.”

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Scientists and Engineers in the Present Period” in the official North Korean narrative. Kim Il-sung, *Uri nara ūi kwahakkisul ūl paljŏn sik'il te taehayŏ* [On the Development of Science and Technology in Our Country] (Pyongyang: Chosŏn Rodongdang Ch'ulp'ansa, 1986), pp. 1-5. A portion of the speech before the alteration of the content was published in *Rodong Shinmun* at that time under the title “A Conspectus of General Kim’s Instructions,” *Rodong Shinmun* October 20, 1946.

The expectations that Kim Il-sung placed on a small number of experts were similarly placed on the “masses,” the core of his political legitimacy. In July 1947, Kim Il-sung congratulated graduating students from elementary, middle, and high schools in North Korea for their advancement despite the material plight that the country faced.<sup>140</sup> According to him, North Korea’s liberation by the Soviet Army as well as the “democratic reforms” of 1946 allowed the North Koreans, who had been nothing more than “displaced refugees” in the colonial period, at least to “study freely” in North Korea. Fortunately, the young North Koreans were growing up to be the “talent that the country needed.” The 1947 development plan for people’s education was explained as an important part of the economic plan, as it was to “cultivate national cadres and technical talents” with “scientific knowledge and a democratic spirit.” To this end, a group of students, teachers, and professors were being sent abroad to learn “progressive” scholarship of “advanced” countries in Soviet Russia and Eastern Europe. To Kim’s view, “complete independence of the country” could be underwritten only when “cadres and technical talents, armed with scientific knowledge” worked. Therefore, the North Koreans had to “unflinchingly develop themselves by honing techno-science.” What Kim Il-sung repeatedly emphasized was the “issue of the talent,” which was to educate the masses to become like experts. This simple yet ambitious expectation of a “scientificization” (*kwahakhwa*) of the masses would continue into the 1950s and beyond.

Understandably, North Korean experts supported the country’s leader. For example, Shin Kŏn-hŭi, who served as the first chief of Kim Il-sung University’s engineering department, and the first rector of Hŭngnam Institute of Technology, summarized his thoughts under the

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<sup>140</sup> Kim Il-sung, “Pukchosŏn kakkŭp hakkyo chorŏpsaeng ege koham” [Informing Graduating Students from North Korean Schools of Various Levels] (July 21, 1947), *SBNK* 27, pp. 24-31.



title “Measures for Revival of Science and Technology” in the cabinet bulletin, *People*, in January 1947.<sup>141</sup> While stating that “Scientific Korea” should be established, he asserted that without science, the welfare of the people could not be pursued, and the nation’s centennial plan could not be drawn.<sup>142</sup> Meanwhile, he confessed that he was very impressed with the “capability of his fellow countrymen, who had accomplished a great historical, democratic task” in less than a year. This “success,” he continued, became a crucial moment for elite scientists including himself to reassure their own efforts. He suggested primary measures to build “Scientific Korea.” The first and fourth were to train technicians and improve efficiency by concentrating relevant equipment and materials in Kim Il-sung University, demanding that higher education be substantially supported. He also pointed out that it was more effective to focus on a few, well-preserved factories with a lot of technicians than to open a technical school in every factory. In addition, he suggested that it was realistic to establish secondary technical colleges in cities to educate young people, rather than in the countryside. The second was to tighten links between the administrative authorities in Pyongyang and techno-scientific communities (schools) that were dispersed throughout the country. The third was to build a comprehensive research institute. The fifth was about how to guarantee material compensation for technicians. Resonating with Kim Il-sung’s 1946 instructions, Shin Kŏn-hŭi’s viewpoint that represented the country’s techno-scientific authorities was more a pledge to work harder than a concrete policy.

These expectations of the North Korean political and techno-scientific circles were

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<sup>141</sup> *Inmin* [People] 2:1 (January 1947), reprinted in *SBNK 13*, pp. 270-274.

<sup>142</sup> Similar focuses were repeated later. See “A Note for the First Edition,” *Chayŏn kwahak* [Natural Science] 1 (February 1949), p. 4.

immediately disseminated through various media, contributing to shaping a social message that all members of society should play a significant role in constructing a new nation.<sup>143</sup> Accordingly, a specific direction on how to cover issues related to science and technology was given to the media, and in lectures, seminars, and gatherings. For example, one *Rodong Shinmun* article published a statement by Yi Su-ŏk, a scientist affiliated with the North Korean Epidemic Research Institute, which said that North Korean scientists worked for the popularization (*inminhwa*) of science under the guidance of the NKPC. Instead of talking about what popularization or science meant, Yi argued that scientists should realize that only under the current North Korean regime could they spread the results of their efforts to the masses. In other words, experts were supposed to actively follow the policies of the North Korean Party.<sup>144</sup> Similarly, the UITNK urged its members to exhibit “patriotic zeal and noble techniques.”<sup>145</sup> In response to this call, a branch at Hŭngnam factory appealed to all technicians across the country to compete in research on invention and efficiency, which resulted in a variety of “creative inventions.”<sup>146</sup> Furthermore, the UITNK supported renovation of major factories such as Sŏngjin Steelworks and Hwanghae Steelworks, providing education to about 2,000 students through six night technical schools. By mid-1947, *Rodong Shinmun* clearly showed that not only scientists, but also students, farmers, teachers, and office workers were enthusiastically participating in “building a democratic and independent country” through the

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<sup>143</sup> Suzy Kim, *Everyday Life in the North Korean Revolution, 1945–1950* (Ithaca: Cornell University Press, 2013).

<sup>144</sup> *Rodong Shinmun* May 29, 1947.

<sup>145</sup> *SBNK* 27, pp. 353-355.

<sup>146</sup> Yun, *Chosŏn kwahakkisul paljŏnsa*, pp. 18-42.

learning and application of science and technology.

A close reading of a North Korean journal offers a glimpse into how North Korean workers perform “people’s techno-science.” On June 6, 1947, “young new workers” between the ages of nineteen and twenty-seven gathered at a discussion on “honing science and technology” at the Mass Science Press building in Pyongyang.<sup>147</sup> The session raised topics such as how they came to do their current work, their opinions for skill acquisition, and their individual hopes. As the participants were “model students who worked by day and studied at night,” what they said merits close investigation for understanding how a “people’s techno-science” project envisaged a model North Korean worker. Participants usually began working as low-level technicians because of the poverty and the subsequent lack of education opportunities in colonial Korea. Chang Kwan-p’il, who had been working as a coal miner since the age of sixteen, had the initial impression that coal mines were a “scary and dirty place.” However, he changed his thought after liberation that coal mines were “a place for young Korean men to work,” revealing that “measuring invisible coal seams in the great, majestic ground” was so fun. Yi Yǒng-hŭi was born into a tenant farmer family and got a job at Kiyang chemical plant, seeing no future in farming. At the plant, she saw a “big machine spinning,” which drove her to become an engineer. All participants found much interests in their specific vocations, which became the core message to be relayed to the masses. In the case of electrician Ch’oe Yun-tǒk, operating an electric machine was “more fun than having a meal.” Before the liberation, Ch’oe Sŭng-hwa worked for three years as a woodworker at a weapons manufacturing plant in Pyongyang, where he was “beaten and kicked by the Japanese like he

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<sup>147</sup> *Mass Science* 1 (August 1947), pp. 22-26.

was a soldier.” Freed from overwork and colonial suppression that were typical under Japanese rule, he worked “with peace of mind,” calling his sawmill his “lover.” The participants said that they had used lunch breaks or nighttime to additionally study for their work. Indeed, the participants had one thing in common: they were ready to put more efforts to improve labor productivity and use raw materials more efficiently. Finally, they dreamed of transforming their homeland into a “modern country”, manufacturing the “best products in the world,” creating “Electric North Korea” with plenty of electricity, or installing automatic telephones all over the Korean Peninsula. It seems that the UITNK continued to host these types of discussion sessions until the second half of 1949.<sup>148</sup>

With growing expectations for the country’s first two-year plan,<sup>149</sup> the North Korean leadership began to substantially invest in spreading “people's techno-science.” This project coincided with Kim Il-sung's judgments that there existed a “long way” to completely eradicate “technical poverty” in North Korea and that a number of qualified engineers were required to manage factories and enterprises in South Korea after the unification. Still, some “stubborn” engineers maintained the “wrong” idea that the “engineers of Japanese imperialism were superior.” Hence, it would remain an important task to inspire confidence among North Korean engineers that they should take advantage of the “favorable conditions of assistance” provided by the Soviet Union in “acquiring advanced science and technology,” which would demonstrate North Korea’s own capability “beyond those of Japanese thugs.”<sup>150</sup> Accordingly, the two-year

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<sup>148</sup> *Industrial Knowledge* 9 (September 1949), pp. 30-34.

<sup>149</sup> Kim Il-sung, “New Year address to the people in the nation in celebration of 1949,” *Worker* 1 (January 1949), reprinted in *SBNK* 47, pp. 147-156.

<sup>150</sup> Kim Il-sung, “A concluding remark of Premier Kim Il-sung in the Second Meeting of the Supreme

plan stipulated the publication of more newspapers, magazines, and books as a way to popularize scientific knowledge to the masses.<sup>151</sup> From early 1949, the National People's Publishing Company began to print out serial publications "Science World Library" and "Natural Science Series." While the former comprised translations of Soviet publications, the latter were composed North Korean scientists's writings (See Table 1-1). As early as 1947, books about science and technology such as "Korea-Soviet Library" (*Chosso mun'go*) and "Mass Science Series" were published time to time by the North Korea-Soviet Cultural Association. The North Korean state embarked on mobilizing leading scientists to popularize "people's techno-science" in earnest.

Table 1-1: The List of Popular Publications of Science and Technology in 1949-1950

Science World Library in 1949-1950		
No.	Title	Author or translator
1	Atmospheric Layers	Yi Chung-p'a
2	Thunder and Lightning	Kim Kwang-su trans.
3	Stars	Kim Kwang-su trans.
4	Do Meteors Have a Life	Kim Kwang-su trans.
5	Volcano	Ch'oe Kūm-ok trans.

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People's Assembly," *Worker 3* (February 1949), reprinted in *SBNK 47*, pp. 437-453.

<sup>151</sup> "The summary of the execution of the 1948 plan to develop people's economy in the northern part of the Democratic People's Republic of Korea and the decree for the two-year plan in 1949-1950," *Worker 3* (February 1949), reprinted in *SBNK 47*, pp. 453-474.

6	Sleep and Dream	Ro Tae-kyu trans.
7	Sea of Air	Sŏk In trans.
8	A Tale of Clock	Yi Kyŏng trans.
9	Features of Russian Natural Science	Ch'oe Il-ryong trans.
10	Causes of and Research on Earthquakes	An Yu-hyŏn trans.
11	Achievements of Soviet Astronomy	Kim Kwang-su trans.
12	Day and Night(One Year Four Seasons)	Kim Myŏng-ok trans.
13	Lay	Kim Kwang-su trans.
14	Michurinism in the Development of Organisms	Kwŏn Tong-rin trans.
15	Cloud Tracer	Kim Yŏng-hwan trans.
16	A Scientist's Biography	Pang Hi-yŏng
17	Long-Cherished Hope Fulfilled	Ch'oe Song-sŏk trans.
Natural Science Series in 1949-1950		
1-1, 1-2	Dynamics	To Sang-rok
2	Thermotics	Rim Kŭk-che
3-1, 3-2	Electrology	Ri Yong-tal
4	Optics 1, 2	Chŏn P'yŏng-su
5	Ancient Animal and Vegetable Kingdoms	Shin T'ae-pong trans.
6	Three Phases in Atomic Energy	To Sang-rok
7	Energy in Natures and Engineering	Ch'oe tong-kŭn trans.
8	Introduction to Organic Chemistry	Ch'oe Yun-sik

10	Celestial Bodies and the Cosmos 1, 2	Son Wŏn-rok
12	Animal 1, 2	Hwang Sŏng-yŏp
14	The Origin of Lives	Sŏk In trans.
15	Quantum Mechanics	To Sang-rok
18	Magic Square 1	To Sang-rok
19	Optics	Chŏn P'yŏng-su

Source: *Natural Science* 6 (December 1949), pp. 101-102; David A. Frank-Kamenetskii, Ch'oe Tong-kŭn trans., *Chayŏn kwa konghak e issŏsŏ ŭi enerŭgi* (Pyongyang: Kungnip Ch'ulp'ansa, 1950), pp. 165-166.

The growing expectations placed on the masses in transforming North Korea into an “advanced country” were further emphasized through the publication of relevant magazines and journals. *Natural Science*, founded with To Sang-rok as the chief editor, explained why all North Koreans should learn natural science.<sup>152</sup> One of the key elements in “people’s technoscience” was the overthrow of “myth,” or enlightenment, which was a crucial part of a plan to improve productivity by creating “working people” (*kŭllo inmin*).<sup>153</sup> Within the framework of this project, To Sang-rok emphasized the example of a “developed country.”<sup>154</sup> According to

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<sup>152</sup> *Natural Science* 1 (February 1949), pp. 9-13; 18.

<sup>153</sup> Pukchosŏn Rodongdang chungang ponbu sŏnjŏnsŏndongbu kangyŏn'gwa, *Kwahak kwa misin* (Pyongyang: Pukchosŏn Rodongdang Ch'ulp'ansa, 1949).

<sup>154</sup> To Sang-rok, *Yŏkhak* [Dynamics] (Pyongyang: Kungnip Inmin Ch'ulp'ansa, 1949).

him, the path to the free development of “scientific culture” opened in North Korea following the liberation. The motherland demanded the nation widely disseminate natural science that was the basis for developing “scientific culture.” The significance of natural science could not be greater because its development was a major driving force that could contribute to economic development, national welfare, the prosperity of the motherland, and furthermore, to the treasury of human culture. Moreover, To Sang-rok narrated, it would be possible to create a new history by remodeling nature to suit human will. As such, the dominant view that science and technology could solve everything formed the core of North Korea’s early culture of science and technology in the late 1940s.

“People's techno-science,” which urged all North Koreans to construct a developed socialist country, was one of the ways North Korea’s efforts to emulate the Soviet Union were displayed. The exaggerated propaganda about Soviet scientific achievements took place simultaneously in both Moscow and Pyongyang, which brought envy for the Soviet Union, a “people's country,” where science and technology were being applied to build communism. For example, a booklet published in Hamhŭng in 1946 presented a measure of scientific development in the Soviet Union by comparing before and after the October Revolution. The number of affiliated researchers in the Soviet Academy of Sciences increased twenty times (212 to more than 4,000), the number of laboratories and museums tripled, and the number of experts’ committees doubled. Sites and laboratories for various kinds of experiments (thirty-five locations) were newly created and ten academies of sciences were established in different Soviet republics.<sup>155</sup>

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<sup>155</sup> Choso munhwa yŏphoe hamhŭng chibu, *Ssoryŏn sajŏng* (Hamhŭng: Hamnam Shinmun Ch’ulp’ansa, 1946), pp. 22-23.



The North Korean leadership made an important reference to Stalin in preparing for the leap into a socialist state, whose “teaching” would “guarantee the true flowering of science.” One of the most detailed descriptions of the Soviet Union among North Korean publications in the 1940s pointed out that the “Great Stalin” had paved the way for scientific development in Soviet Russia.<sup>156</sup> According to the same publication, “advanced science” was nothing but an attitude, meaning that experts should not be isolated from the people. They also had to be ready to serve the people at any time, handing over all their achievements to the people. As Stalin’s “teaching” was interpreted as a great recipe, which played a fundamental role in transforming the Soviet Union from a backward agrarian country to an industrial power that won the Great War, there was no reason for the North Korean leadership not to embrace this message that defined “advanced science” as an attitude.<sup>157</sup>

Therefore, “people’s techno-science,” which was emphasized by North Korean planners with the goal to increase food production and industrial productivity following the example of the Soviet Union, became a dominant mobilization mechanism for “building a democratic base” in the late 1940s. *Rodong Shinmun* frequently covered a variety of cases where Kim Il-sung University students, who were recognized as model student-intellectuals in the country, “devoted themselves” to “advanced scientific research” under the great expectation of the state. Entering 1950, the same newspaper relayed the news of academic conferences for university students and teachers in Pyongyang, held for the first time, as well as excellent cases of applying science and technology in rural areas, construction sites, and military bases. But

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<sup>156</sup> Kim Ye-yong, *Inmin ūi nara - Ssoryŏn* (Pyongyang: Munhwa Ch’ulp’ansa, 1949), pp. 145-148.

<sup>157</sup> Pukchosŏn Rodongdang chungang ponbu sŏnjŏnsŏndongbu, *Ssŭttallin ūn Ssobet’ŭ tongmaeng ūi widaehan ch’anggŏnja imyŏ ryŏngdoja ida* (Pyongyang: Pukchosŏn Rodongdang Ch’ulp’ansa, 1949).

none of these specialists of “people’s techno-science” would have thought that they would soon be exposed to overwhelming American military techno-science over three years.

### ***Concluding Remarks***

Forming one of the most significant aspects of early North Korea’s culture in science and technology, “people’s techno-science” was a unique combination of North Korean leadership’s postcolonial desire for rapid economic development, the unification of the Korean Peninsula, and all-round assistance provided by the Soviet Union. In this regard, the official North Korean narrative that sees this period as a time to build “invaluable experiences and foundations” that could later develop its science and technology “to a higher level” does not seem to be much exaggerated.<sup>158</sup> It is also important to understand that the pursuit of “advanced” science and technology was universal across the Cold War divide, making it difficult to see these earlier exchanges between North Korea and the Soviet Union simply as an “extension of sovietization.” As shown in this chapter, long before the late 1950s when Kim Il-sung increasingly emphasized *Juche*, allegedly reflecting his “dissatisfaction” over the Soviet Union’s political meddling, North Korean planners always prioritized considering North Korea’s realities. What North Korean leaders in this period most needed was the rapid expansion of manpower with expertise, which exonerated North Korean experts from their suspicious past. These experts, while growing politically and professionally, got closer to various achievements of the advanced Soviet Union, at the expense of a total rupture from such networks of science and technology managed by Japan.<sup>159</sup> Meanwhile, the Soviet Union achieved its intended goal to establish a

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<sup>158</sup> Yun, *Chosŏn kwahakkisul paljŏnsa*, p. 42.

<sup>159</sup> Hiromi Mizuno, Aaron S. Moore, and John DiMoia eds., *Engineering Asia*.

pro-Soviet regime on the Korean Peninsula, creating a reliable bastion for socialism in the tips of East Asia. In this vein, it was profitable for the Soviet Union to provide limited assistance to North Korea.

As a forward-moving, never-giving-up attitude in matters of science and technology, “people's techno-science” met a major turning point during and after the Korean War. In the post-war 1950s, North Korean planners came to adhere to a developmental strategy with a focus on the machine-building industry amid chronic material scarcity. Also, as free aid from the socialist bloc gradually decreased, the North Korean leadership enforced a “squeezing a dry rag” type of capital accumulation.<sup>160</sup> Under this trend, North Korean experts would be directly mobilized to production sites in the late 1950s. Accordingly, sectors that were perceived as having no direct links with economic development were given less consideration in policy-making. Lastly, a sharp separation between elite techno-science and “mass techno-science” would be made, the topic of which needs another space to be examined.

Through a series of bilateral agreements in the second half of the 1950s, North Korea was offered chances to be systematically integrated in the socialist networks of techno-science. However, as in the 1940s, it always meant a corresponding increase in the price which North Korea had to pay. Under these circumstances, Kim Il-sung articulated a characteristic strategy that would base the development of science and technology on its “own strength,” minimizing cooperation with foreign countries. The chapters that follow discuss how Kim Il-sung was able to make this happen against all odds in the long 1950s.

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<sup>160</sup> Cho Su-ryong, “Chǒnhu Pukhan ūi sahoejuūi ihaeng kwa ‘charyōkkaengsaeng’ kyōngje ūi hyōngsōng” [Jaryeokgaengsaeng Economy: North Korea's Socialist Transition and Its Formation in 1953-63] (in Korean) (PhD Diss., Kyung Hee University, 2018), pp. 247; 251.

## Chapter Two: Engaging with Socialist Networks of Techno-Science, 1950-1956

This chapter looks at how an influx of assistance from socialist countries and North Korea's weak economic capability combined to shape the place of science and technology in North Korea's economic development strategy from the outbreak of the Korean War to 1956. By examining the price for expanding North Korea's participation in the socialist networks of techno-science during the same period, this chapter details how its leadership began to weigh the profitability of maintaining the country's unique place in the socialist bloc, while gradually searching for alternatives to facilitate industrial development.

Previous studies focus on political aspects of how Kim Il-sung ascended as the most powerful figure in the country, while touching upon how he perceived economic burden.<sup>161</sup> As this chapter shows, a particular North Korean mode of development was put to test in the same period. Mounting debts and obligations, the decreasing volume of socialist assistance, the ever-expanding desire to produce industrial goods, and burgeoning techno-scientific confidence justified North Korea's quest for its own system of industrial development.

Comparatively, as the Soviet Union's pursuit of Western science and technology turned out to be ineffective for domestic innovation,<sup>162</sup> technology transfer from the socialist bloc

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<sup>161</sup> Andrei Lankov, *Crisis in North Korea: The Failure of De-Stalinization, 1956* (Honolulu: University of Hawaii Press, 2005); Cho Su-ryong, "Chŏnhu Pukhan ūi sahoejuŭi ihaeng kwa 'charyŏkkaengsaeng' kyŏngje ūi hyŏngsŏng" [Jaryeokgaengsaeng Economy: North Korea's Socialist Transition and Its Formation in 1953-63] (in Korean) (PhD Diss., Kyung Hee University, 2018).

<sup>162</sup> Sari Autio-Sarasmö, "Soviet Economic Modernisation and Transferring Technologies from the West," in Markku Kangaspuro and Jeremy Smith eds., *Modernization in Russia since 1900* (Helsinki:

made little impact in North Korea's production sites. Socialist assistance in this period was only useful in building a substantial part of industrial infrastructure for North Korea. Simultaneously, the North Korean leadership increasingly thought of how to replace costly imports. One of the promising ways to do so was ideological engineering that extensively demanded the country's experts to follow the Party's guidance to remove "old thoughts" in conducting their works.

### *Wartime Expansion of North Korea's Participation in the Socialist Techno-Scientific Networks and its Price*

When the Korean People's Army (KPA) invaded South Korea on June 25, 1950, North Korea was saddled with a tremendous amount of debt that was not easily going to be settled in the near future. In the previous year, Stalin approved a loan of 212 million rubles; North Korea was supposed to clear this debt with the shipment of a variety of goods including ferrous and non-ferrous metals, chemical products, and gold.<sup>163</sup> By the time the loan was offered, North Korea already had debt of almost 137 million rubles that was to be repaid with North Korean goods and other products by late 1949.<sup>164</sup> However, North Korea could not fulfill the obligation: by September 1, 1949, only around 20% of the agreed products including rolled ferrous metals, cast iron, and small ships were delivered to the Soviet Union. From the

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Finnish Literature Society, 2006), pp. 104-123.

<sup>163</sup> RGASPI, f. 17, op. 162, d. 40, ll. 116-117.

<sup>164</sup> These goods and other products included 50,000 tons of rice (42% of all the debts), 7.6 tons of gold (33% of all the debts), and 36 tons of silver (3% of all the debts). RGASPI, f. 17, op. 162, d. 40, ll. 136-137.

perspective of the Soviet creditor, North Korea could make up for the debt with ferrotungsten, ammonium sulfate, ethyl alcohol, fluorspar, and furs, all of which the Soviet Union would welcome. The North Korean state prioritized the repayment for weapons and military products with 10,000 tons of monazite concentrates and 27,500 tons of ammonium sulfate. Meanwhile, the Soviet side put off any North Korean requests to deliver more products that exceeded the agreement.<sup>165</sup> Regardless, North Korea continued to request a portion of the loan that was scheduled to be used in the future.<sup>166</sup> According to a Soviet document that summarized socialist assistance given by late 1953 to North Korea by the Soviet Union and the People's Republic of China (PRC), the total volume of the Soviet credit to the Democratic People's Republic of Korea (DPRK) increased to 298 million rubles by the end of the Korean War in 1953, which was to be repaid starting from 1957.<sup>167</sup> Though Stalin in February 1953 agreed to postpone the discussion of how to repay Soviet loans by North Korea,<sup>168</sup> this issue haunted Kim Il-sung during and after the war, and it was only partially settled in May 1956.

From the initial stage of the war, North Korea's involvement with the socialist networks of techno-science was centered on receiving weapons and military production equipment to facilitate its war efforts. In early May 1951, Kim Il-sung asked for Stalin to send

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<sup>165</sup> RGASPI, f. 17, op. 162, d. 42, ll. 8-9.

<sup>166</sup> RGASPI, f. 17, op. 3, d. 1080, l. 155.

<sup>167</sup> N. Fedorenko, "Spravka o razmerakh pomoshchi, okazyvaemoi Koreiskoi Narodno-Demokraticeskoi Respublike Sovetskim Soyuzom i Kitaem (December 15, 1953)," AVPRF, f. 0102, op. 4, p. 47, d. 72, l. 115.

<sup>168</sup> APRE, f. 3, op. 65, d. 778, l. 100.

materials and equipment for Factory Number 65 in North Korea.<sup>169</sup> However, his appeal, as in the 1940s, was only fulfilled partially with the following items: 25,000 carbines, 5,000 submachine guns, 1,200 light machine guns, 550 medium machine guns, 275 TShK machine guns, 500 anti-tank rifles, 700 82mm mortars, and 125 120mm mortars.<sup>170</sup> Still, Kim Il-sung replied immediately, saying that he “endlessly” thanked Stalin for his “selfless” help and the attention to the needs of the DPRK.<sup>171</sup> After the armistice negotiation began in July 1951, the North Korean leadership decided to resume the production of mines and shells in a relocated factory in the underground premises of the Tongno River hydropower plant in Kanggye, a region bordering the PRC. The equipment was to be purchased with Soviet credit.<sup>172</sup> In October 1951, Kim Il-sung again requested weapons for three infantry divisions, 1,000 cars, and one TU-2 plane.<sup>173</sup> In the following month, Kim requested machines for producing PPSH submachine guns and magazines in Factories Number 65 and 25, along with experts, only to revoke it in January 1952 because of the “impossibility” of expanding these workshops in

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<sup>169</sup> “Kim Il-sung’s letter to the Soviet Ambassador Extraordinary and Plenipotentiary (May 2, 1951),” no archival signature, translated in Chinese in Shen Zhihua ed., *Chaoxian zhan zheng: Eguo dang an guan de jie mi wen jian* Vol. 2 (Taipei: Zhong yang yan jiu yuan jin dai shi yan jiu suo, 2003), p. 752.

<sup>170</sup> “To comrade Razuvaev (May 29, 1951),” APRF, f. 45, op. 1, d. 348, l. 29.

<sup>171</sup> “To comrade Filippov (May 30, 1951),” APRF, f. 45, op. 1, d. 348, l. 30.

<sup>172</sup> “To the Ambassador (August 17, 1951),” no archival signature, translated in Chinese in Shen Zhihua ed., *Chaoxian zhan zheng* Vol. 3, p. 980.

<sup>173</sup> “To comrade Vasilevskii (October 17, 1951),” no archival signature, translated in Chinese in Shen Zhihua ed., *Chaoxian zhan zheng* Vol. 3, p. 1064.

1952.<sup>174</sup> Understandably, this decision was affected by the fact that the Soviets declined Kim Il-sung's wish to use credit in advance; Stalin wanted North Korean goods to be delivered first.<sup>175</sup> In March 1953, the Soviet government decided to send 26,100 tons of oil products to the DPRK; as in the past North Korea was to repay this commitment through bilateral trades.<sup>176</sup> Thus, it is not hard to assume that a sense of discontent grew behind Kim Il-sung's thankful attitude toward "selfless" assistance by the Soviet Union during and after the war.

A small number of Soviet military specialists who embodied battle-hardened Soviet military science were sent to assist North Korea's war efforts. On July 8, 1950, Kim Il-sung requested 25-35 more Soviet military specialists who would serve in three KPA headquarters, as North Korean cadres were not able to "master the arts of engaging with modern warfare" yet.<sup>177</sup> Stalin reluctantly approved Kim Il-sung's request on a condition that Soviet specialists wear civilian clothing and disguise themselves as correspondents of *Pravda*.<sup>178</sup> After the successful landing operation of the United Nations Forces (UNF), codenamed Operation Chromite, in mid-September 1950, the Soviet leadership, criticizing its military advisors for mistakes, ordered them to retreat and took a variety of measures to prevent them from being captured as POWs.<sup>179</sup> The Soviet ambassador suggested a complete withdrawal of Soviet

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<sup>174</sup> GARF, f. 5446, op. 86a, d. 81, ll. 1-5.

<sup>175</sup> GARF, f. 5446, op. 86a, d. 943, ll. 1-27.

<sup>176</sup> GARF, f. 5446, op. 86a, d. 1058, ll. 1-8.

<sup>177</sup> APRF, f. 45, op. 1, d. 346, ll. 143-144.

<sup>178</sup> Fin-si, "Pyongyang, the Soviet Embassy (July 8, 1950)," no archival signature, translated in Chinese in Shen Zhihua ed., *Chaoxian zhan zheng* Vol. 1, p. 439.

<sup>179</sup> APRF, f. 3, op. 65, d. 827, ll. 90-93.



specialists, and the Soviet Ministry of Foreign Affairs (MFA) cautiously agreed.<sup>180</sup> In early October, most of Soviet personnel and their families were ordered to be evacuated to the Soviet Union and the PRC.<sup>181</sup> In the following month, Stalin asked if the North Korean leadership wanted to have Soviet military advisors,<sup>182</sup> to which Kim Il-sung positively responded.<sup>183</sup>

In the course of the Korean War, Soviet specialists who were working on the Korean Peninsula could be largely categorized into two groups: the Soviet Koreans who began their service from the 1940s and non-Korean Soviets. Before the war, the Soviet Koreans were making up the faculty in technical and agricultural institutes, or serving as Vice Ministers of Industry (Ko Hŭi-man and Kim Yŏng-sam), Agriculture and Forestry (Ri Yong-sŏk), Transportation (Nam Hak-ryong), Communication (Park Pyŏng-sŏp), and Commerce (Yu To-sŭng). Soviet Koreans such as Pang Hak-se and Park Ŭi-wan also served as Minister, respectively for Internal Affairs and Transportation.<sup>184</sup> In addition to these Soviet Koreans, non-Korean Soviets worked inside the North Korean government, especially in relation to the Soviet interests in mining North Korean minerals. As such, Samson N. Dzhoshua served as an advisor to the Vice Minister of Industry and Petr Martynenko played a great role in leading the geological expedition in North Korea before September 1951.<sup>185</sup> By April 1952, 36 non-

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<sup>180</sup> APRF, f. 3, op. 65, d. 827, l. 123.

<sup>181</sup> APRF, f. 3, op. 65, d. 827, ll. 126-127.

<sup>182</sup> APRF, f. 45, op. 1, d. 347, l. 84.

<sup>183</sup> APRF, f. 45, op. 1, d. 347, l. 87.

<sup>184</sup> RGASPI f. 17, op. 3, d. 1090, ll. 163-170.

<sup>185</sup> RGASPI f. 17, op. 3, d. 1090, ll. 274-281.

Korean Soviet specialists were conducting various missions in North Korea.<sup>186</sup> By September 1952, Soviet advisors worked not only for the North Korean Ministries of Finances, Chemical Industry and Construction Materials, Heavy Industry, and Health, but also for the Chief of Electrical Energy Department and Soviet Red Cross hospital.<sup>187</sup> Meanwhile, it was never easy to acquire daily necessities in local markets in wartime North Korea, which led the Soviet ambassador to request the fund in Chinese yuan to purchase necessary inventories in the PRC in early 1952.<sup>188</sup> However, Soviet experts and advisors shared the difficulties and hardships with their North Korean counterparts, which were worsened with the United States' indiscriminate bombing.<sup>189</sup>

As in the late 1940s, North Korea's requests for Soviet experts were only partially fulfilled during the Korean War. For example, the North Korean government asked the Soviet Union in April 1952 to send sixty-seven specialists for one to two years. Out of these specialists, fifty-nine were to be newly sent, while eight would replace the existing experts. However, the Soviet MFA decided that only forty-four specialists (twenty engineer-technicians, fifteen educators, four agricultural specialists, three medical workers, and two economists) would be dispatched instead since the corresponding Soviet Ministries could not meet the allotted quota. This group of forty-four specialists were supposed to be in North Korea at various points in the

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<sup>186</sup> GARF, f. 5446, op. 86a, d. 737, l. 8.

<sup>187</sup> GARF, f. 5446, op. 86a, d. 838, ll. 1-2.

<sup>188</sup> GARF, f. 5446, op. 86a, d. 702, ll. 1-4.

<sup>189</sup> AVPRF, f. 0102, op. 8, p. 37, d. 34, ll. 1-33, partially translated in Park Chong-hyo, *Rōsia Yōnbang Oemusōng Taehanjōngch'aek Charyo* [The Materials of Korea Policy in the Ministry of Foreign Affairs of the Russian Federation] Vol. 1 (Seoul: Sōnin, 2010), pp. 608-610.

second half of 1952. Meanwhile, among twenty engineer-technicians, the largest number (eight) was to be provided by the Soviet Ministry of Non-Ferrous Metallurgy.<sup>190</sup> This clearly shows that North Korea's specific focus on developing its wartime industry was in sync with Soviet interests in securing more metal ores and relevant products.

Thus, Soviet assistance which was given to North Korea before 1953 was never free. North Korea's mining non-ferrous and rare metals to pay for the Soviet assistance offers us a hitherto-unexplored context of how North Koreans perceived its give and take with the Soviet-led socialist bloc during and after the Korean War. In late 1950, industrial production in North Korea ceased, bringing to a halt the mining of non-ferrous metals and especially lead, which was one of the most strategically important resources for export. Over the course of February and March 1951, the North Korean leadership took measures to mine non-ferrous and rare minerals with the participation of Soviet specialists. By April 20, the amount of North Korean lead transferred to the Soviet Union included 8,210 tons of lead scrap (113% of the original plan) and 7,936 tons of lead concentrates (152% of the original plan).<sup>191</sup> Early that year, Stalin directly asked Kim Il-sung to receive and make use of Soviet specialists for the reconstruction of mines, processing plant, and factories for lead, writing "[w]e hope that you would not object to it."<sup>192</sup> On June 24, Kim Il-sung reported to Stalin that 8,379 tons of lead and 10,714 tons of lead concentrates as well as rich lead ores were shipped out of North Korea "despite complicated war situations." Kim Il-sung continued that his government would "continue

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<sup>190</sup> GARF, f. 5446, op. 86a, d. 737, ll. 7-20.

<sup>191</sup> "Economic measures (May 11, 1951)," no archival signature, translated in Chinese in Shen Zhihua ed., *Chaoxian zhan zheng* Vol. 2, pp.758-766.

<sup>192</sup> "To comrade Kim Il-sung (February 3, 1951)," APRF, f. 45, op. 1, d. 348, l. 22.

paying maximum attention to supply and increased the shipment of lead-containing minerals” to the Soviet Union.<sup>193</sup> In other words, during the war, North Korea had to satisfy their very important patron in Moscow by exceeding the original target production in mining and shipping. In early September 1951, North Korean leadership confirmed the military and economic significance of producing non-ferrous and rare metal ores, as it formed a crucial part of total mobilization efforts to win the war.<sup>194</sup> Lead production expanded in 1952.<sup>195</sup> In addition, fruits such as apple were delivered to the Soviet Union.<sup>196</sup>

During the Korean War, Soviet assistance had a dual nature: an exploitative one and an affirmative one. As for the former, Soviet documents that are available are only circumstantial since Kim Il-sung almost never openly expressed his negative view of Stalin.<sup>197</sup> However, as Chapter Three shows, North Koreans, especially those who, in the late 1950s and

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<sup>193</sup> “To comrade I.V. Stalin (June 24, 1951),” APRF, f. 45, op. 1, d. 348, l. 36 [original text in Korean].

<sup>194</sup> “The resolution of the 71st Meeting of the Central Organization Committee of the WPK (September 1, 1951),” reprinted in *SBNK* 29, pp. 560-564.

<sup>195</sup> AVPRF, f. 0102, op. 8, p. 34, d. 3, ll. 1-91, partially translated in Park Chong-hyo, *Rōsia Yōnbang Oemusōng Taehanjōngch'aek Charyo* Vol. 1, p. 605.

<sup>196</sup> GARF, f. 5446, op. 86, d. 4604, l. 2.

<sup>197</sup> Accordingly, the Workers’ Party of Korea had never publicly expressed its negative view of Stalin in the de-Stalinization movement starting from early 1956. Sō Tong-man, *Puk Chosōn sahoejuūi ch’eje sōngnipša, 1945-1961* (Seoul: Sōnin, 2005), p. 537. Kim Il-sung’s personal opinion on Stalin, rarely covered in media, was ambivalent. Answering to one Indian journalist, Kim Il-sung estimated that although Stalin had been “excessively arrogant in the last phase of his life, he had greatly contributed to international labor movement as an influential Marxist-Leninist.” *Rodong Shinmun* May 31, 1956.

early 1960s, were aware of long-lasting Soviet desires for North Korean mineral resources, interpreted this assistance as partially neo-colonial exchanges, an exchange that could not be fully compensated by North Korea's increased stockpile of mineral resources. However, there was no room for Kim Il-sung, as the leader of North Korea, whose economic and industrial capabilities were to be dependent on its smooth relations with the Soviet Union, to publicly point out this seemingly unequal aspect of the country's relationship with Moscow.<sup>198</sup> In 1952, the Soviet Union was supposed to receive 14,000 tons of lead in the mixed form of ores and concentrates and 10,000 tons of monazite concentrates, valued at more than 90 million rubles. In exchange, North Korea prioritized receiving equipment, transportation, and materials (around 16 million rubles).<sup>199</sup> In late January 1952, the Soviet cabinet ordered its Minister of Geology to conduct geological prospecting works for lead in North Korea in 1952 and 1953, with an expectation of increased growth of lead ore reserves to 700,000 tons (21,000 tons of

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<sup>198</sup> Even in the period of 1963-1964, when North Korea openly supported the PRC in the Sino-Soviet split, the North Korean leadership never criticized the Soviet Union as a whole, fearing that its trade relationship would be negatively affected. Instead, North Korea continued to support the slogan of unity and cohesion inside the socialist bloc, blaming the Soviet leadership under Nikita Khrushchev as the main reason of an ongoing split. Also, the North Korean leadership understood that the PRC could not serve as an effective provider as much as the Soviet Union, which prevented Kim Il-sung from directly expressing negative views on such unequal dimensions of North Korea-Soviet interactions. B. Pimenov, "O khode vpolneniya resheniy dekabr'skogo /1962 g./ plenuma TSK Trudovoy Partii Korei (July 10, 1963)," RGANI, f. 5, op. 49, d. 640, ll. 298-299; 306.

<sup>199</sup> It included 447 cars, 6,393 sets of tires, 8,632 ball bearings, 8,500 tons of gasoline for cars, and 500 tons of solar oil. GARF, f. 5446, op. 86a, d. 952, ll. 1-59.

lead) in 1952 and 800,000 tons (24,000 tons of lead) in 1953. More than ten geologists and relevant experts were to be dispatched from the Soviet Union.<sup>200</sup> Indeed, for North Korean leadership, this was very useful help that could increase its reserve of mineral resources.<sup>201</sup>

Simultaneously, the Soviet Union seemed to have preferred a kind of monopoly in relation to access to North Korea's resources. For example, when the North Korean leadership wanted to invite a group of East German specialists from the Soviet-German Joint Company to reconstruct Aoji synthetic fuel factory in late 1952, the East German ambassador in Beijing stated that the consent of the Soviet government would be required, which led the North Korean ambassador in Moscow to ask the corresponding Soviet authorities for consent. Subsequently, the Soviet MFA saw this possible North Korea-East Germany deal undesirable, replying that the Soviet government did not know the matter well. In December 18, 1952, the Soviet leadership informed its North Korean counterpart that its government did not engage with a matter of sending German experts abroad.<sup>202</sup> That is, the Soviet authorities actively avoided getting other parties, even when they were socialist regimes, involved in North Korea's resources.

As in the late 1940s, North Korea sent its own experts to the Soviet Union for training purposes during the war, which has not been examined previously. In December 1951, the Soviet cabinet approved receiving 61 North Korean specialists for training in production

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<sup>200</sup> GARF, f. 5446, op. 86a, d. 966, ll. 11-12.

<sup>201</sup> "The diary of S.P. Suzdalev, the Soviet Chargé d'affaires in the DPRK, from June 1 to July 2, 1953 (June 23, 1953)," AVPRF, f. 0102, op. 9, p. 44, d. 9, l. 69.

<sup>202</sup> AVPRF, f. 0102, op. 8, p. 37, d. 34, ll. 1-33, partially translated in Park Chong-hyo, *Rōsia Yōnbang Oemusōng Taehanjōngch'aek Charyo* Vol. 1, pp. 609-610.

technology in a variety of Soviet enterprises at the request of the North Korean government. Among sixty-one experts sent by the North Korean government, the largest number (thirteen, or 21%) was allotted to the Soviet Ministry of Transportation, followed by the Ministry of Chemical Industry (eight, 13%), Ministries of Ferrous Metallurgy and Communication (five, or 8%, each), and Ministries of Non-Ferrous Metallurgy, Coal Industry, and Light Industry (four, or 6%, each), which clearly shows where the North Korean leadership's main interests were placed during the war in terms of industrial development.<sup>203</sup> In May 1952, the North Korean government requested Stalin host 420 North Korean construction workers for 8 months to improve their qualification, or to send seventeen Soviet specialist-educators to North Korea. The Ministry of Housing and Civilian Construction of the Russian Soviet Federative Socialist Republic (RSFSR) was commissioned to provide free meals (ten rubles a day), dormitories, public utilities, and medical services to North Korean trainees. However, no wages would be paid to them.<sup>204</sup> In October 1952, the Soviet government also decided to receive thirty Korean tractor drivers (fifteen for DT-54, eleven for S-80, three for S-4 combine harvesters) for seven to eight months.<sup>205</sup>

In 1952, North Korea celebrated its achievements in the techno-scientific arena through a series of national events. The National Scientists Convention (*kwahakcha taehoe*) was held in April, the agreement to receive North Korean students in the Soviet Union was reached in May, and the Academy of Sciences (AS) of the DPRK opened in December. Drawing upon the consensus at the April convention that creating a state-directed scientific

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<sup>203</sup> RGASPI f. 17, op. 3, d. 1092, ll. 120-125.

<sup>204</sup> GARF, f. 5446, op. 86a, d. 775, ll. 1-5.

<sup>205</sup> GARF, f. 5446, op. 86a, d. 864, l. 5.

institution was urgent, Kim Il-sung demanded that North Korean scientists strengthen research and learn “advanced” science from other countries including the Soviet Union.<sup>206</sup> Reflecting his wishes, one of the priorities of the new academy was to “absorb advanced Soviet science.”<sup>207</sup> The reality was dire; North Korean scientists conducted research in dugouts (*ttanggul*) because of the threat of U.S. bombings.<sup>208</sup>

The Soviet-North Korea educational agreement of 1952 expanded the scope of the North Korea’s participation in the socialist networks of techno-science. However, it is important to remember that half of the whole educational cost, including disbursing stipends (500 rubles and 900 rubles, respectively for university and graduate students), salaries for exchange professors and teachers, educational fees, living expenses, and transportation fees, was supposed to be paid by the North Korean government.<sup>209</sup> Within this framework, North Korea asked the Soviet government to receive 300 students to study at Soviet technical schools, with a payment of 400 rubles per month as a stipend. However, only 238 students were allowed because of the lack of corresponding Soviet institutes with required specialization (See Table 2-1). In comparison, seventy-four Mongolian students and fifty Hungarian students were studying at Soviet technical schools By August 1952; Hungarian students were provided with a stipend of 500 rubles per month, Mongolian counterparts received 300-350 rubles in

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<sup>206</sup> *Ten-year History of Kim Il-sung University*, pp. 102-103.

<sup>207</sup> *Chosŏn minjujuŭi inmin konghwaguk Kwahagwŏn hakpo* [The DPRK Academy of Sciences Bulletin] 7 (July 1954), p. 12. This bulletin renamed *T'ongbo* from 1957.

<sup>208</sup> *Bulletin 5* (May 1954), p. 169.

<sup>209</sup> S.L. Tikhvinskiy et al., *Otnosheniya Sovetskogo Soyuzs s narodnoy Koreyey 1945-1980: dokumenty i materialy* (Moscow: Nauka, 1981), pp. 87-90.



accordance with their academic performance.<sup>210</sup>

Table 2-1: The List of 238 North Korean Industrial Experts Sent to the Soviet Union in 1952

USSR Ministry in Charge	No. of Experts	Areas of Specialization
Chemical Industry	10	Plastics technology (5); technology of organic dyes and intermediate products (5)
Power Plant	8	Electrical parts of central power plants (4); installation and operation of hydraulic installations (2); hydraulic engineering (2)
Electric Industry	8	Electrical apparatuses and machines (3); electrical insulation and cable technology (2); electrothermal installations (3)
Agriculture	10	Crop farming (3); horticulture (1); viticulture (1); zootechny (1); hydro-melioration (1); land management (3)
Ferrous Metallurgy	30	Blast furnace production (5); steel production (5); mechanical equipment of steelworks (5); metallurgical industry planning (10); mining industry planning (3); foundry (2)
Non-Ferrous Metallurgy	5	Non-ferrous metallurgy
Machine Tool Industry	15	Metal cutting machines
Heavy Machine Building	8	Forging and stamping production (7); turbine building (1)
Transportation Machine Building	6	Locomotive building (3); car building (3)
Car and Tractor Industry	12	Metal science and heat treatment of metal (2); metal cutting (10)
Construction and Road Engineering	3	Road cars production
Housing and Civil Construction (RSFSR)	10	Industrial and civilian construction (8); building products and parts production (2)
Public Utilities (RSFSR)	5	Production and operation of residential buildings (2); urban electric transport (2); landscaping (1)
Heavy Industry Enterprise Construction	10	Industrial and civilian construction (3); heat supply and ventilation (1); architecture (6)
Construction Materials Industry	15	Glass technology (5); cement technology (10)

<sup>210</sup> GARF, f. 5446, op. 86a, d. 821, ll. 1-17.

Internal Affairs	6	Highways and city roads construction
Car Transportation (RSFSR)	9	Technical service and repair of cars (7); operation of car transportation (2)
Light Industry	16	Finishing of cotton fabrics (2), silk fabrics (1), woolen fabrics (1), linen fabrics (1), knitted fabrics (1); cotton spinning (2); cotton weaving (2); wool weaving (1); wool spinning (1); flax spinning (1); flax weaving (1); accountants-planners (2)
Forestry	5	Forestry (4); forestry mechanization (1)
Finances	5	Finances (3); money and credit (2)
Coal Industry	10	Mining (6); mining electromechanics (2); mining enterprise building (1)
Fishing Industry	1	Ichthyology and fisheries
Food Industry	2	Sugar production technology
Provision	7	Storage of grain and processed grain products (2); flour and cereal production (5)
Communication	3	Intercity and urban telephone communication, and line-cable communication facilities
Directorate of Architecture (RSFSR)	2	Decorative and architectural modeling and stone processing, architectural and decorative ceramics
Committee of Arts	2	Ballet, sculpture
Central Council of Trade Cooperation	4	Miniature-decorative painting (1); artistic processing of stone (1), metal (1), wood (1)
Main Directorate of Geology and Cartography	1	Aerial photography geodesy
Central Statistical Office	10	Statistics
Total	238	

Source: GARF, f. 5446, op. 86a, d. 821, ll. 12-15.

Along with industrial experts, North Korean scientists and technicians increasingly visited the Soviet Union and the other bloc countries for familiarizing themselves with how advanced science and technology were being applied to construct socialism during and after the Korean War. In February 1953, a group of twenty-five North Korean researchers were selected to go on a tour for three months to familiarize themselves with Soviet techno-scientific

achievements (See Table 2-2).<sup>211</sup> Understandably, it was more a part of propaganda efforts to display the image of North Korea as a well-prepared country to develop its own science and technology despite the ongoing war, than a concrete, sustained project to enhance the quality of the country's research efforts in science and technology. However, it took more than four months for the Soviet side to respond, indirectly blaming the North Korean request for lacking clarity regarding what problems these twenty-five researchers wanted to deal with.<sup>212</sup> That is, from the perspective of the Soviet authorities in the early 1950s, North Korea's science and technology looked to be incapable at even pointing out what they needed.

Table 2-2: The List of 25 North Korean Researchers Visiting the Soviet Union in 1953

Name	Year of Birth	Workplace	Area of Specialization
Rim Kūk-che	1906	Hŭngnam Institute of Technology (HIT)	Physics
Kim Chi-chōng	1910	Kim Il-sung University (KISU)	Mathematics
Kim Tōk-mo	1912	Kim Ch'aek Institute of Technology (KCIT)	Mechanical Engineering
Kwak Tae-hong	1914	KCIT	Metallurgy
Yu Ki-yōn	1908	KCIT	Transportation
Ri Sōng-chun	1913	KCIT	Electrical Engineering
Yun Kap-sŭng	1927	KCIT	-
Ch'oe T'ae-hŭi	1920	KCIT	Civil Engineering and Construction
Ryōng chu-sik	1921	HIT	-
Ri Sŭng-ki	1905	Academy of Sciences (AS)	Chemistry
Kye Ŭng-sang	1893	AS	Agriculture
Hyōn Uk-wōn	1911	Wōnsan Institute of Agriculture (WIA)	-

<sup>211</sup> AVPRF, f. 0102, op. 9, p. 44, d. 4, ll. 32-33.

<sup>212</sup> "The diary of S.P. Suzdalev, the Soviet Chargé d'affaires in the DPRK, from June 1 to July 2, 1953 (June 4, 1953)," AVPRF, f. 0102, op. 9, p. 44, d. 9, ll. 58-60.

Ri Chung-hoe	1920	WIA	-
Yu Kŭm-tŏk	1915	Wŏnsan College of Agriculture	-
Ch'oe Myŏng-hak	1898	AS	Surgery
To Pong-sŏp	1904	Pyongyang Institute of Medicine	Pharmacognosy
Ch'oe Yŏ-ku	1904	Ch'ŏngjin College for Teachers	Biology
Ri Sŏk-chong	1926	KISU	-
Kim Myŏng-kŭn	1916	Pyongyang Pedagogical Institute	Geography
Chŏng Hyŏn-kyu	1906	KISU	World History
Kim Kwang-sun	1913	KISU	Political Economy
Kim Su-kyŏng	1918	KISU	Korean Language
Ri Nam-san	1912	Ministry of Education (ME)	-
Ra Chang-kŭn	1919	Pyongyang State College of Arts	Painting
Kung Sŏn-hong	1917	ME	Physical Education

Source: AVPRF, f. 0102, op. 9, p. 44, d. 4, ll. 32-33 [original text in Korean].

Indeed, the Soviet Union was the most important source through which North Korea could reach out to the socialist networks of techno-science in the early 1950s, while withstanding the U.S.-led UNF and their indiscriminate bombing. Though costly, Kim Il-sung seemed to have had high expectations and hopes for the expertise of Soviet specialists. In June 1953, Kim Il-sung had a talk with the Soviet chargé d'affaires, saying that he had already ordered his subordinates to explore the possibility about inviting a Soviet commission. This commission, comprising Soviet experts, would determine the nitty-gritty of the reconstruction of North Korea's industry and, by extension, economy, both of which were devastated in the initial stage of the war. In addition, Kim Il-sung thought that this invitation was no less essential than making good use of Soviet experts in North Korea.<sup>213</sup> Between late July and early August

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<sup>213</sup> "The diary of S.P. Suzdalev, the Soviet Chargé d'affaires in the DPRK, from June 1 to July 2, 1953 (June 16, 1953)," AVPRF, f. 0102, op. 9, p. 44, d. 9, ll. 64-66.

1953, the North Korean government asked the Soviet Union to dispatch around 200 experts; however, only 79 were sent for one to two months. These experts were supposed to arrive at Andong station and would transfer to two cars, arranged by the North Korean MFA to cross the border.<sup>214</sup> As the war ended, North Korean leadership placed “high hopes” in Soviet-led socialist assistance in rebuilding the country, as Kim Il-sung mentioned in a celebratory banquet on July 28, 1953, one day after the armistice agreement was signed.<sup>215</sup>

### ***The Structure of Unreciprocated Socialist Assistance***

Previous studies have laid out the contents and volume of socialist assistance given to post-war North Korea in detail.<sup>216</sup> However, the structure of giving socialist assistance, especially that of free aid that was crucial for the North Korean leadership to construct industrial infrastructure

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<sup>214</sup> “The diary of S.P. Lazarev, the Soviet Chargé d'affaires ad interim in the DPRK, from September 3 to October 5, 1953 (September 13, 1953),” AVPRF, f. 0102, op. 9, p. 44, d. 9, ll. 173-174.

<sup>215</sup> “The diary of S.P. Suzdalev, the Soviet Chargé d'affaires in the DPRK, from July 3 to 31, 1953 (July 28, 1953),” AVPRF, f. 0102, op. 9, p. 44, d. 9, ll. 110-111.

<sup>216</sup> Natalia Bazhanova, *Vneshne-ekonomicheskie svyazi KNDR: V poiskakh vykhoda iz tupika* (Moscow: Nauka, 1993), pp. 8-12; Cheehyung H. Kim, *Heroes and Toilers: Work as Life in Postwar North Korea, 1953-1961* (New York: Columbia University Press, 2018), pp. 77-83; Erik van Ree, “The Limits of Juche: North Korea’s Dependence on Soviet Industrial Aid, 1953–76,” *Journal of Communist Studies* 5:1 (1989), pp. 50-73; Avram A. Agov, “North Korea in the Socialist World: Integration and Divergence, 1945-1970. The Crossroads of Politics and Economic” (PhD Diss., The University of British Columbia, 2010), pp. 109-125; Cho Su-ryong, “Jaryeokgaengsaeng Economy.”

has never been systematically examined by the same works.<sup>217</sup> As the Soviet Union took up the largest portion among all such aid efforts,<sup>218</sup> this section first covers the ways Soviet assistance was rendered for the reconstruction of North Korea.

Free aid (*musang wŏnjo*) that the Soviet Union gave to North Korea in September 1953,<sup>219</sup> which was touted in contemporary North Korean media as “one billion rubles,”<sup>220</sup>

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<sup>217</sup> It is important to note that the Chinese People’s Volunteer Army extensively supported North Korea’s post-war reconstruction with a tremendous degree of manpower, thus consisting of an important part of socialist assistance. Still, the history of the PVA in the North Korean reconstruction period between 1953 and 1956 lies beyond the scope of this dissertation, due to the unavailability of relevant data.

<sup>218</sup> Cho Su-ryong, “Jaryeokgaengsaeng Economy,” p. 50.

<sup>219</sup> The initial Soviet-North Korea agreement stated that Soviet unreciprocated assistance in the amount of 10 million rubles was to be rendered in the course of two years. Out of this assistance, around 30% (3 million rubles) was agreed to be allotted for the (re)construction of 17 industrial enterprises and other objects including Sup’ung hydropower plant, Kim Chaek Steelworks at Ch’ŏngjin, Sŏngjin Steelworks, Namp’o non-ferrous metal plant, and Hŭngnam chemical factory. N. Fedorenko, “Spravka o razmerakh pomoshchi, okazyvaemoi Koreiskoi Narodno-Demokraticheskoi Respublike Sovetskim Soyuzom i Kitaem (December 15, 1953),” AVPRF, f. 0102, op. 4, p. 47, d. 72, l. 115 and *Chosŏn chungang nyŏn’gam (1954-1955nyŏn)* (Pyongyang: Chosŏn Chungang T’ongsinsa, 1955), p. 77.

<sup>220</sup> Ri Ki-yŏng, *Widaehan Ssoryŏn kwa inmin minjujuŭi chegukka inmindŭl i Chosŏn inmin ege chugo innŭn kŏdaehan wŏnjo wa minju chinyŏng chegukkadŭl kan ŭi kukchejuŭijŏk ch’insŏn tan’gyŏl* [Massive Assistance Given to the Korean People by the People of the Great Soviet Union and People’s Democracies and Internationalist Friendship and Unity among Countries in the Democratic Bloc] (Pyongyang: Kungnip Ch’ulp’ansa, 1955), p. 9.

was categorized into two parts: “scattered delivery” (*razroznennye postavki*) of 600 million rubles and “complete delivery” (*komplktnye postavki*) of 400 million rubles. While the former brought a package of help to different enterprises and factories, “scattered” across North Korea, the latter offered more comprehensive aid that included the implementation of design works, the production of working drawings, the supply of equipment, technical assistance by Soviet specialists in construction, restoration, installation, and commissioning, and also the training of North Korean personnel. Both types of delivery included equipment, materials, and Soviet experts’ on-site assistance.<sup>221</sup> The following table shows that 25 industrial enterprises and relevant objects were newly built or reconstructed under “complete delivery” by September 1956.

Table 2-3: North Korean Enterprises and Industrial Objects Built with Soviet Assistance

Name	Type	Planned Schedules (as of July 1, 1956)
Radio center	n/a	Operation in 1955
Hydrochloric acid production plant (by the method of A.M. Gasparyan)	n/a	Operation in 1955
Sup’ung hydropower plant	Reconstruction	Operation after 1959
Ch’ongjin Steelworks	Reconstruction	Operation after 1957
Songjin Steelworks	Reconstruction	Design works completed by September 1957
Namp’o non-ferrous metal plant	Reconstruction	Minimum operation (Zinc workshops) in December 1956
Hungnam nitrogen fertilizer plant (ammonia production)	Reconstruction	Full operation in January 1958
Madong cement factory	Newly built	Full completion in 1959
Ch’onnaeri cement plant (Asbestos slate shop)	Newly built	Construction starts in 1957
Pyongyang textile factory	n/a	Full operation in June 1956

<sup>221</sup> V. Nemchikov, “O khode vypolneniya soglashenii mezhdru SSSR i KNDR /Spravka/ (September 19, 1956),” RGANI, f. 5, op. 28, d. 412, ll. 308-327.

Pyongyang silk spinning and weaving factory	Newly built	Equipment delivered in the third quarter of 1958
Pyongyang dyeing and finishing factory	Newly built	Construction starts in 1957
Kilju plywood factory	n/a	Construction starts in 1957
Sariwŏn tractor repair shop	Newly built	Construction ends in 1956
Sinŭiju tractor repair shop	Newly built	Construction starts in 1957
Pyongyang meat processing plant	Newly built	Partial operation in July 1956 (due to the lack of meat)
Sinp'o fish cannery	Newly built	Operation after 1957
Pyongyang reinforced concrete products plant	Newly built	Construction ends by the end of 1956
Pyongyang city hospital	Reorganization	Operation in 1955
Two traction substations on the Yangdŏk-Ch'ŏngsong line	n/a	Operation in 1956
Four traction substations on the Kowŏn-Sinsŏngch'ŏn line	n/a	Operation starts by the end of 1958
Pyongyang furniture factory	Newly built	Operation starts in the first half of 1957

Source: V. Nemchikov, "O khode vypolneniya soglashenii mezhdru SSSR i KNDR /Spravka/ (September 19, 1956)," RGANI, f. 5, op. 28, d. 412, ll. 308-327.

The Soviet assistance laid the groundwork for the country's post-war industrial infrastructure, which was greatly valued by war-torn North Korea. As of July 1956, two and a half years after the reconstruction began, "scattered delivery" was made at 94% (564 million rubles), causing "no discontent" by the North Korean side about the quality and the shipment period. The remaining 6% (36 million rubles) was to be used under the discretion of the North Korean leadership. Meanwhile, "complete delivery" was made at only around 60% (238.9 million rubles) during the same time. This had something to do with the nature of the delivery; instead of simply sending equipment and machines to certain industrial sites, as was the case with the "scattered delivery," the Soviet authorities seemed to have felt that more consideration was needed to fulfill "complete delivery." Issues often followed; some Soviet Ministries turned



out to be “frivolous” in selecting and sending specialists to North Korea. Other issues such as unexpected accidents at a site (Sup’ung hydropower plant), unsatisfactorily conducted preliminary works (Ch’ongjin Steelworks, Söngjin Steelworks, and Namp’o non-ferrous metal plant), late delivery of equipment and specialists (almost all enterprises), the lack of proper storage spaces (Madong cement factory), and the lack of raw materials (Pyongyang meat processing plant) tended to delay a variety of (re)construction projects, all of which caused damages to the Soviet Union’s prestige as a techno-scientific superpower.<sup>222</sup>

As historian Avram Agov details in his study,<sup>223</sup> almost all of the bloc countries including Mongolia and Albania gave assistance at varying degrees to North Korea in the period from 1953 to 1956. Considering the unprecedented scope of humans, goods, and services that North Korea received from the socialist bloc, his characterization of the period as the “honey moon period of the socialist system” makes sense.<sup>224</sup> However, his analysis fails to examine how North Korea’s reactions to socialist assistance ranged from humble gratitude to subtle dissatisfaction, which informed the specific ways that North Koreans thought their industrial economy should move forward.

Table 2-4: Socialist Assistance Given to North Korean Industry

Unit: million rubles

Country	Size of Help	Date of Agreement	Areas of Assistance
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<sup>222</sup> V. Nemchikov, “O khode vypolneniya soglashenii mezhdru SSSR i KNDR /Spravka/ (September 19, 1956),” RGANI, f. 5, op. 28, d. 412, ll. 308-327.

<sup>223</sup> Avram A. Agov, “North Korea in the Socialist World,” pp. 109-125.

<sup>224</sup> Avram A. Agov, “North Korea in the Socialist World,” p. 252.

PRC	842	November 29, 1953	Food and industrial products; simple equipment; around 25% for tech help, repairs, railway bridges; reception of North Korean students
East Germany	545	March 3, 1955	Diesel engines factory (710 units per year); Pyongyang printing plant; Hwanghae Steelworks
Poland	250	November 11, 1953	Locomotive car repair in Pyongyang and Wonsan; 3 coal mines and Wonsan (plan)
Czechoslovakia	161	December 21, 1954	Hũich'õn machine building factory; Unsan tool factory; Tõkch'õn auto repair plant
Hungary	84	September 7, 1953	Kusõng machine tool plant; Sunch'õn dye factory; PY factory of measures and weights
Bulgaria	80	November 3, 1953	Wonsan brick factory; Pyongyang woodworking factory
Romania	77	October 23, 1953	Sunch'õn aspirin factory; Unsan cement factory; Hungnam brick factory

Source: RGANI, f. 5, op. 28, d. 412, ll. 170-171.

### ***Repaying the “Noble” Assistance while Dismissing it***

While previous studies have examined the scope of assistance from the socialist bloc given to North Korea's post-war reconstruction, the issues of subsequent obligations and how they affected the country's policy-making have remained unexplored. Thus, this section looks into how North Korea perceived Soviet-centric “cooperation” as “uneven” and exploited it. As seen in the previous section, the Soviet Union took up the biggest role among the bloc countries in reconstructing North Korea's industrial infrastructure and supplying capital goods. Accordingly, the North Korean leadership prioritized inviting Soviet experts, which made the treatment and compensation for experts coming from the other bloc countries less important.<sup>225</sup>

From the beginning, North Korea's reconstruction plan was largely hampered by

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<sup>225</sup> “Meeting minutes with Ri Tong-kõn, the Vice Minister of Foreign Affairs of the DPRK (February 1, 1954),” AVPRF, f. 0102, op. 9, p. 44, d. 9, ll. 31-33.

several factors including the lack of working culture, know-how, and experience among high-profile cadres, the insufficient amount of food, qualified labor force, and construction materials, as well as widespread embezzlement of government assets and properties by North Korean officials. In January 1954, the North Korean leadership wanted to make use of some Soviet experts in drawing up governmental decisions.<sup>226</sup> By late that month, Nam Il, North Korean Minister of Foreign Affairs, conveyed to the Soviet ambassador that the North Korean government gave special meaning to the reconstruction of Sŭngho-ri cement factory because of the “serious lack” of cement.<sup>227</sup> Park Ch’ang-ok, the most powerful figure second only to Kim Il-sung, joined in pointing out similar issues that plagued the country’s reconstruction. Park observed that old buildings and equipment that could be restored were “being destroyed” in the hope of rebuilding “everything [from scratch].” To make matters worse, he continued, the new equipment mostly brought from the Soviet Union was not properly managed virtually everywhere in North Korea. Also, the organization of the labor force was “extremely bad,” which, in combination with the lack of construction materials, made it difficult to appropriately distribute manpower. In order to address these issues, a special party decision would be made in March 1954.<sup>228</sup> By September 1954, Park Ch’ang-ok, the chairman of the State Planning Committee (SPC) with great access to the information and authority regarding

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<sup>226</sup> “The diary of S.P. Suzdalev, the Soviet Ambassador to the DPRK, from January 1 to 31, 1954 (January 8, 1954),” AVPRF, f. 0102, op. 10, p. 52, d. 8, ll. 20-21.

<sup>227</sup> “The diary of S.P. Suzdalev, the Soviet Ambassador to the DPRK, from January 1 to 31, 1954 (January 28, 1954),” AVPRF, f. 0102, op. 10, p. 52, d. 8, ll. 30-32.

<sup>228</sup> “The diary of S.P. Suzdalev, the Soviet Ambassador to the DPRK, from February 1 to 28, 1954 (February 13, 1954),” AVPRF, f. 0102, op. 10, p. 52, d. 8, ll. 37-41.

reconstruction,<sup>229</sup> revealed that no serious tasks of production could be “solved without Soviet specialists.”<sup>230</sup>

For the war-torn North Korean state, resource management was one of the hardest issues to quickly address during the reconstruction period. Poor preservation and handling of construction materials contributed to the decreased efficiency of foreign experts working in North Korea. More often than not, equipment and machine tools were delivered prior to the scheduled (re)construction of enterprise buildings, making their storage near the site another pressing problem. In March 1955, the Czechoslovakian ambassador was surprised by the fact that the North Koreans were using cement in brickworks, instead of sand and clay, which would cause the “unreasonably” inflated price and excessive use of cement. Indeed, he was not the only one who knew the perpetual lack of cement in post-war North Korea.<sup>231</sup>

Although a number of Soviet specialists were sent to North Korea at the North Korean request, some North Korean planners perceived these Soviet specialists as inactive. That was why some leading North Korean politicians like Park Ch’ang-ok wanted to see Soviet specialists working “much energetically” to make (*podtyagivat*) their North Korean subordinates to work efficiently. Also, they hoped that Soviet advisors could lead by their own examples inside Ministries or industrial enterprises. However, as the Soviet ambassador

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<sup>229</sup> “Meeting minutes with comrade Park Ch’ang-ok, a Vice Premier and a Presidium member of the CC of the WPK (March 12, 1956),” RGANI, f. 5, op. 28, d. 410, ll. 75-76.

<sup>230</sup> “The diary of S.P. Suzdalev, the Soviet Ambassador to the DPRK, from August 23 to September 25, 1954 (September 3, 1954),” AVPRF, f. 0102, op. 10, p. 52, d. 8, ll. 142-144.

<sup>231</sup> “The diary of S.P. Suzdalev, the Soviet Ambassador to the DPRK, from February 28 to March 11, 1955 (March 3, 1954),” AVPRF, f. 0102, op. 11, p. 60, d. 7, ll. 8-12.

pointed out, this course of action, preferred by some North Korean leaders, would “transform Soviet specialists into administrators and [North] Korean workers slackers,” negatively affecting the education of qualified national cadres.<sup>232</sup> In July 1954, Park Ch’ang-ok continued to complain about the general lack of qualified cadres in North Korea. The widespread problem, to him, was that a number of “old workers,” who knew only the name of equipment, regarded themselves as “specialists,” not listening to their subordinates or Soviet experts. Hence, he wanted to promote young specialists, especially those who received technical education from the Soviet Union. While he was “drunken,” as described in the official diary of the Soviet ambassador, Park Ch’ang-ok also criticized Soviet specialists that they were “playing diplomacy”; the Soviets wanted to give the appearance of respecting state sovereignty of North Korea. Though their advice was not always taken into account by their North Korean counterparts, Soviet specialists were not in the position to meddle with the ways North Koreans worked. That is, the Soviet involvement in North Korea’s reconstruction was very cautious, aiming to be practical as well as apolitical. Given that Park Ch’ang-ok revealed that he had understood “authentic scales and values of socialist assistance” only after he was appointed as the chairman of the SPC,<sup>233</sup> it would be safe to assume that North Korea’s general perception of Soviet assistance was no more than customary praise. This trend continued over the course of 1954.<sup>234</sup> However, it was Park Ch’ang-ok, who did not listen to Soviet advisors and

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<sup>232</sup> “The diary of comrade S.P. Suzdalev, the Soviet Ambassador to the DPRK, from March 1 to 31, 1954 (March 26, 1954),” AVPRF, f. 0102, op. 10, p. 52, d. 8, ll. 63-64.

<sup>233</sup> “The diary of S.P. Lazarev, the Soviet Chargé d'affaires ad interim in the DPRK, from June 26 to July 22, 1954 (July 11, 1954),” AVPRF, f. 0102, op. 10, p. 52, d. 8, ll. 114-115.

<sup>234</sup> “Meeting minutes Park Ch’ang-ok, a Vice Premier and Minister of the DPRK (October 22, 1954),”

specialists in drawing up the 1955 plan,<sup>235</sup> which eventually caused a food crisis in the spring of 1955.<sup>236</sup> Still, especially outside Pyongyang, Soviet specialists were regarded as “sincere friends” since their expertise was deemed a rare source of learning from advanced countries by young workers.<sup>237</sup>

As discussed earlier in this chapter, economic burden including the repayment of Soviet loans made during the war and meeting the planned volume of trade with the Soviet Union after the war, always hindered the possible expansion of North Korea’s engagement with the socialist bloc. International communications were tricky, as coordination between diplomatic posts in the bloc countries and Pyongyang was not always smooth. In August 1953, for example, the North Korean Embassy in Moscow was tasked with acquiring curricula and purchasing necessary educational materials with the help of the Soviet Ministry of Education and several relevant Soviet institutions. However, Nam Il, Minister of Foreign Affairs, emphasized to the Soviet ambassador in North Korea that the task was conducted “haphazardly” by North Korean diplomatic workers in Moscow “without an understanding of North Korean

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AVPRF, f. 0102, op. 10, p. 52, d. 9, ll. 114-115.

<sup>235</sup> “Meeting minutes with Park Ŭi-Wan, a Vice Premier (February 15, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 8, ll. 128-130.

<sup>236</sup> A compelling account for the relations between the 1955 plan and a 1955 food crisis could be found in Cho Su-ryong, “Jaryeokgaengsaeng Economy,” pp. 98-108.

<sup>237</sup> AVPRF, f. 0102, op. 16, p. 24, d. 6, ll. 56-58. For various North Korean workers’ responses to socialist help, see Lee Se-young, “Pukhan 'sahoejuŭi' nodongja ũi hyŏngsŏng kwa saengsanhyŏnjang ũi pyŏnhwa (1945-1960)” [The Formation of ‘Socialist’ Workers and Changes in Production Sites in North Korea (1945-1960)] (in Korean) (PhD Diss., Yonsei University, 2020), pp. 91-109.

institutions' needs." Therefore, the North Korean MFA had to send one cadre to sort out the situation.<sup>238</sup> By February 1954, the North Korean government decided to reduce the planned number of students to study in the bloc countries compared to previous years. For the academic year of 1954 and 1955, only 80 university students and 20 graduate students were to be sent to Soviet universities. The reason was that North Korea could domestically educate more specialists in "peaceful conditions."<sup>239</sup> In August, Kim Il-sung realized that many enterprises and Ministries in North Korea "overindulged" Soviet specialists, such as arranging banquets for them on various occasions, and issued an instruction to stop such unnecessary and costly practices.<sup>240</sup> Given that arranging banquets for receiving and sending off Soviet specialists was understood as a "traditional practice,"<sup>241</sup> as Park Ch'ang-ok mentioned to a Soviet advisor, it was imperative for the North Korean leadership to break off with the wasteful past. By December 29, 1955, the North Korean government also issued a decree to reduce monthly salaries for Soviet specialists.<sup>242</sup>

By late December 1954, the economic plan for 1955 was ratified by the North Korean

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<sup>238</sup> "The diary of S.P. Suzdalev, the Soviet Ambassador to the DPRK, from August 1 to 28, 1953 (August 5, 1953)," AVPRF, f. 0102, op. 9, p. 44, d. 9, ll. 122-123.

<sup>239</sup> "The diary of S.P. Suzdalev, the Soviet Ambassador to the DPRK, from February 1 to 28, 1954 (February 13, 1954)," AVPRF, f. 0102, op. 10, p. 52, d. 8, ll. 37-41.

<sup>240</sup> "The diary of S.P. Suzdalev, the Soviet Ambassador to the DPRK, from August 10 to 21, 1954 (August 10, 1954)," AVPRF, f. 0102, op. 10, p. 52, d. 8, ll. 128-129.

<sup>241</sup> "Meeting minutes Park Ch'ang-ok, a Vice Premier and Minister (August 3, 1954)," AVPRF, f. 0102, op. 10, p. 52, d. 9, ll. 70-72.

<sup>242</sup> RGAE, f. 365, op. 2, d. 29, ll. 53-57.

cabinet; however, the commercial representative of the DPRK in Moscow estimated that a deficit of 150 million rubles still remained in North Korea's barter-type trade with the Soviet Union for 1954, which was to be covered by Soviet assistance and additional trade in 1955.<sup>243</sup> For North Korea, the Soviet Union was the "only market" that could purchase low quality North Korean products.<sup>244</sup> In February 1955, Nam Il "privately" told the Soviet representative that North Korea was already on a path to reduce the dispatch of its governmental workers to the Soviet Union to conserve funds.<sup>245</sup> According to a Soviet document, almost 90% (538.8 million rubles) of Soviet assistance in the form of goods and equipment under "scattered delivery" was completed by the end of 1955. Simultaneously, 90% of North Korea's export in 1955 went to the Soviet Union; out of a total 155.5 million rubles, 81% (126 million rubles) was for the export of non-ferrous metals.<sup>246</sup> Another source indicates that 61% (98.9 million rubles) of North Korea's export to the Soviet Union in 1955 included ores and concentrates and 26.4% (43 million rubles) non-ferrous and precious metals.<sup>247</sup> In stark contrast, when the Czechoslovaks showed interest in North Korea's non-ferrous metal ores, especially copper, and

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<sup>243</sup> "The diary of the Soviet Chargé d'affaires ad interim in the DPRK from December 24 to 31, 1954 (December 24, 1954)," AVPRF, f. 0102, op. 11, p. 60, d. 8, ll. 43-44.

<sup>244</sup> "Meeting minutes Park Ch'ang-ok, a Vice Premier and the President of the SPC of the DPRK (January 31, 1955)," AVPRF, f. 0102, op. 11, p. 60, d. 6, ll. 6-8.

<sup>245</sup> "The diary of the Soviet Chargé d'affaires ad interim in the DPRK from January 26 to February 31, 1955 (February 5, 1955)," AVPRF, f. 0102, op. 11, p. 60, d. 8, ll. 69-73.

<sup>246</sup> "O sostoyanii ekonomiki KNDR /kratkaya spravka/ (April 27, 1956)," AVPRF, no archival signature, NIKH, tp. MU0000000903, scp. 050600425, l. 334.

<sup>247</sup> RGANI, f. 5, op. 28, d. 412, l. 167.



other products such as medicinal plants to extend the volume of North Korea-Czechoslovak trade, the North Koreans simply evaded talking about the topic. Given that shipment by sea was almost impossible, the Czechoslovaks thought that the Soviets could offer identical products—metal ores—to Czechoslovakia and receive the same products from North Korea. However, this cross-trade scheme never materialized since the North Koreans were not interested.<sup>248</sup>

The Soviet-led socialist bloc had their own problems and limitations in carrying out their assistance commitments to North Korea.<sup>249</sup> After all, the bloc countries had difficulties in grasping the realities, conditions, and needs of North Korea, which allowed Kim Il-sung to lead the whole reconstruction project. By August 1955, Kim Il-sung relayed to the Soviet ambassador some of the issues in using assistance. First, instead of Ch'ŏngjin Steelworks that was being reconstructed with Soviet help, he thought that a better option would be to reconstruct a blast furnace and a coke battery at Hwanghae Steelworks to have a completed production process. Also, he prioritized building an open hearth furnace instead of the originally planned blast furnace and coke battery at Ch'ŏngjin Steelworks, so that the same plant could process pig iron into steel at the site. Second, despite the Soviet government's offer of three fish canneries, he suggested receiving only one, referring the country's diet as the reason; in his view, North Koreans usually consumed fresh fish or salted fish, which would

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<sup>248</sup> "Meeting minutes with Matsukh, a counselor of the Czechoslovakian Embassy (April 5, 1955)," AVPRF, f. 0102, op. 11, p. 60, d. 8, ll. 178-180.

<sup>249</sup> Austin Jersild, "The Soviet State as Imperial Scavenger: "Catch Up and Surpass" in the Transnational Socialist Bloc, 1950–1960," *American Historical Review* Vol. 116, No. 1 (February 2011), pp. 109-132.

allow his government to use the remaining funds from the reduced number of fish canneries for other enterprises such as a reinforced concrete factory. Third, he requested the fast delivery of technical documentation of cement production that did not arrive on schedule. Fourth, he mentioned that the delivery of technical documentation to Sŏngjin Steelworks was delayed, asking for speedy shipment of designs and schemes. Unlike the previous years, Kim Il-sung began to mention the notion of national dignity to his Soviet interlocutors, albeit indirectly. As the fifth issue, he pointed out that the Soviet Union treated North Korea as a small country, which resulted in its decision to send mid-level Soviet specialists. Hence, he requested to dispatch higher-level experts as advisors to North Korean Ministers. In addition, Kim Il-sung mentioned that the current two-year term of service for Soviet experts was insufficient, as they began to think of returning home after learning about their work for one year.<sup>250</sup> Most of Kim Il-sung's requests seemed to have been approved by the Soviet authorities, except for changes to the tenure of Soviet experts. Meanwhile, some of the Soviet Korean experts, who were working in North Korea in the mid-1950s, faced discriminatory treatment by local North Koreans who felt they "lacked knowledge of local conditions."<sup>251</sup>

Yet, North Korea in the mid-1950s was not a robust exporter of industrial products; it had mostly natural resources to sell to the socialist market. By mid-1955, ores and metal products continued to be the first and second largest portions of North Korean exports to the

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<sup>250</sup> "The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, from July 25 to August 25, 1955 (August 22, 1955)," AVPRF, f. 0102, op. 11, p. 60, d. 7, ll. 65-68.

<sup>251</sup> "The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period of May 17 to June 1, 1956 (May 19 and 21, 1956)," AVPRF, f. 0102, op. 12, p. 68, d. 5, ll. 90-96.

Soviet Union—ores (66%) and metal products (19%).<sup>252</sup> Unlike 1949 when chemical products took up almost 27% of the total export, however, the same products comprised only 0.8% in 1954 because of the destruction of production facilities in the war. Also, the North Korean leadership considered selling magnesite, talc, and barite during the First Five-Year Plan (1957-1961) after the reconstruction of mining facilities.<sup>253</sup> In September 1955, North Korea wanted to add 3,000 more tons of monazite ores to its planned export of 12,000 tons and around 7,000 tons of ilmenite (a titanium-iron oxide mineral) for earning foreign currency.<sup>254</sup> In the following month, Kim Il-sung asked the Soviet representative to accelerate the delivery of necessary equipment for the reconstruction of a zinc workshop at Namp'o non-ferrous metal plant. In this way, he continued, North Korea could export zinc in metal, not in ores, to the Soviet Union, which would increase the North Korean reserve of Soviet rubles. As in the period of the Korean War, North Korean planners prioritized the development of their mining industry, with a specific focus on increasing the volume of its exports to the pre-war level of 300 million rubles by 1958.<sup>255</sup> However, as Kim Il-sung clearly recognized, primary North Korean goods had much lower quality than standard quality, which would cause serious difficulties.<sup>256</sup> By

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<sup>252</sup> Some of those ore exports included monazite concentrates (7,040 tons), zinc concentrates (62,198 tons), blister cooper (4,019 tons), and crystalline graphite (552 tons).

<sup>253</sup> “Osnovnye pokazateli (April 27, 1955),” RGANI, f. 5, op. 28, d. 315, ll. 217-220.

<sup>254</sup> “The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, from August 27 to September 9, 1955 (September 5, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 7, ll. 80-82.

<sup>255</sup> “The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, from October 19 to 28, 1955 (October 19, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 7, ll. 128-133.

<sup>256</sup> These goods included such as calcium carbide, ferrotungsten, and zinc concentrate. “The diary of

late 1956, non-ferrous metal ores and zinc concentrates continued to be the most important sources of income for North Korea.<sup>257</sup>

Hardships in earning foreign currency and balancing its trade relations with the Soviet Union never improved over the course of 1956. In February 1956, Kim Il-sung mentioned to the Soviet ambassador the difficult situation of North Korea in terms of “foreign currency,” revealing that the North Korean delegation to the 20th Party Congress of the Soviet Communist Party would raise the issues of cancelling and postponing the repayment of debt.<sup>258</sup> Though the Soviet cabinet in May 1956 decided to generously cancel the repayment of the wartime debt of 576 million rubles, North Korea still needed to pay 362 million rubles starting from 1960.<sup>259</sup> In June, Chŏng Chun-t’aek, a Vice Premier and the Chairman of the SPC, gave a pessimistic estimation that North Korea’s exports would not be enough to cover its “minimally necessary imports” at least for two years.<sup>260</sup>

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comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, from October 19 to 28, 1955 (October 24, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 7, ll. 135-137.

<sup>257</sup> V. Nemchikov, “O khode vypolneniya soglashenii mezhdru SSSR i KNDR /Spravka/ (September 19, 1956),” RGANI, f. 5, op. 28, d. 412, ll. 308-327.

<sup>258</sup> “The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period of February 8 to March 27, 1956 (February 8, 1956),” AVPRF, f. 0102, op. 12, p. 68, d. 5, ll. 38-40.

<sup>259</sup> These loans were the combination of a 1949 loan (210 million rubles) and a 1953 loan (152 million rubles). AVPRF, f. 0102, op. 12, p. 69, d. 18, ll. 1-114, partially translated in Park Chong-hyo, *Rōsia Yōnbang Oemusōng Taehanjōngch'aek Charyo* [The Materials of Korea Policy in the Ministry of Foreign Affairs of the Russian Federation] Vol. 2 (Seoul: Sōnin, 2010), pp. 81-82.

<sup>260</sup> “The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period of June 14

### *Destitute Realities of North Korean Science and Technology*

So far, historian Kang Ho-che's work remains the best account of the formation of North Korea's institution of science and technology in the period from 1945 to 1960.<sup>261</sup> Sharing a range of assumptions with previous studies, he points out that the decrease of "foreign assistance" largely contributed to the institutionalization of a "thousand-li horse movement" in the fields of science and technology, which was to maximize the use of dormant resource reserves, minimize the waste of resources, and increase the overall productivity. However, his work, based solely on North Korean publications, risks reproducing the official North Korean narrative about the North Korean Academy of Sciences (AS) in the reconstruction period from 1953 to 1956 and beyond. My analysis of Soviet documents revises this misrepresentation, suggesting that a variety of post-war hardships that were never easy to address with socialist assistance in a brief period of time primarily affected the general work of the AS.

The "political significance" of wartime North Korea, rather than actual prestige, was behind the creation of the North Korean AS. By March 1954, the North Korean AS suffered from a complete lack of scientific workers, facilities, and equipment. The plan was to hire 1,100 staff; however, only 600 were recruited "with difficulties." The majority of these 600 staff were for administrative work. According to Chang Chu-ik, a Soviet Korean serving as the academic secretary in the North Korean AS, only around fifty researchers were able to actually conduct research with sufficient preparation. His story reflects the dire situation of the post-war period; research work was not pursued even in the country's command center for science and

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to July 20, 1956 (June 15, 1956)," AVPRF, f. 0102, op. 12, p. 68, d. 5, ll. 132-136.

<sup>261</sup> Kang Ho-che, *Pukhan kwahakkisul hyöngsöngsa I* (Seoul: Sönin, 2007).

technology, except for a couple of experiments in agriculture. Chang Chu-ik saw Hong Myōng-hŭi, the President of the AS, as an obedient person, afraid of everyone and not interested in protecting the interests of the Academy. These poor circumstances made North Korean leadership, specifically Park Ch'ang-ok, feel the AS was idle and its workers “loafers.” Indeed, the AS was located in the bomb shelter of the North Korean cabinet; still better than a dugout below Moran Hill. To Chang's estimation, the North Korean government had no wherewithal to support the AS with manpower, funds, and facilities. Concluding his conversation, Chang confided that he had occasionally reminded himself that he, as a servant of North Korea, must keep state secrets and must not share his own opinion with foreigners.<sup>262</sup>

In this context, North Korea's participation in the socialist networks of techno-science gradually unfolded in the post-war 1950s, with a focus on getting to know what the country could do with them. From January to April 1954, the first North Korean delegation consisting of Chang Chu-ik and Ri Sŭng-ki visited the Soviet Union and Hungary to familiarize themselves with science and technology as well as to purchase necessary equipment and materials. In the Soviet Union, the delegation visited the Soviet AS, several leading institutes in Moscow and Leningrad, and the Ukrainian AS. While on a tour to Soviet facilities and laboratories, the delegation was “dazzled” by seeing some of the objects of advanced techno-science such as epoxy, oscilloscopes, and hot water heating systems. The North Korean delegation was also impressed at how closely communication was organized between scientific communities and workers in production sites. However, according to an official journal of the North Korean AS, the delegation was never interested in mechanical application of these

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<sup>262</sup> “Meeting minutes with Chang Chu-ik, the academy secretary of the Academy of Sciences of the DPRK (March 2, 1954),” AVPRF, f. 0102, op. 10, p. 52, d. 9, ll. 42-45.

achievements in North Korea; instead, the delegation made suggestions for the direction for North Korean AS: “In accordance with the reality of the DPRK, ... improve equipment in each laboratory; a lot of books and journals, even from capitalist countries, should be imported; educate more scientific cadres; and send scholars to “advanced” socialist countries more and often.”<sup>263</sup>

In 1954, the North Korean AS set out to absorb “advanced science and technology as well as precious experience of building socialism in the Soviet Union,” thinking that these measures could directly help North Korean researchers move forward. These objectives were developed in sync with ongoing reconstruction projects, the targets of which included factories, mines, transportation, communication, agriculture, fishery, and forestry. Also, the discussion about ideological engineering that demanded researchers follow the Party’s guidance to remove “old thoughts” in carrying out their work gradually came to the fore as a way to overcome materially destitute situations. As such, one of the important goals for the North Korean AS was to “liquidate the influence of the bourgeois academy of Japan, the U.K., the U.S., and West Germany.” That is, researchers should concentrate their efforts on carrying out the country’s top priority—more industrial production—while actively removing any thoughts of personal gain for either money or fame. Also, the same discussion substantially emphasized making close links between researchers and workers through the notion of collectivity (*chipch'esǒng*).<sup>264</sup> While striving to achieve these goals, the North Korean AS also was invited to a number of international academic venues and received equipment, free of charge, from the Soviet Union, the PRC, Hungary, Czechoslovakia, and Poland. As a number of bilateral

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<sup>263</sup> *Bulletin* 5 (May 1954), p. 169.

<sup>264</sup> *Bulletin* 7 (July 1954), pp. 3-15.

cultural agreements were signed between North Korea and the countries in the socialist bloc, North Korea's participation in the socialist networks of techno-science grew to be more active. Simultaneously, researchers in the North Korean AS would frequently emphasize an important task of "liquidating liberalistic tendencies" (*chayujuūi kyōnghyang*).<sup>265</sup>

Post-war hardships lingered in the North Korean AS. In March 1955, Chang Chu-ik made a similar review of the Academy that he had made in the previous year. Chang began his frank criticism that the Academy had been a byproduct of "political or propaganda considerations" of North Korean leadership, pointing out how it had been created "in haste" (*toroplivo*). According to him, only two scholars, Ri Sŭng-ki and Ch'oe Sam-yŏl, conducted actual research out of 10 academicians (*wŏnsa*); Ryŏ Kyōng-ku was the only scholar conducting scientific research out of 15 correspondent academicians (*hubo wŏnsa*).<sup>266</sup> Major issues such as the lack of qualified rank-and-file researchers, material base, and good

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<sup>265</sup> *Bulletin* 1 (January 1955), pp. 3-11.

<sup>266</sup> The North Korean academic titles of both academicians (*wŏnsa*) and correspondent academicians (*hubo wŏnsa*) were created on a Soviet model. The initial North Korean AS Rules (*kyujŏng*) stipulated that an academician was to be selected among "scholars who contributed to the progress of science by producing a work that had scientific significance at the highest level in our country [North Korea], or who contributed to the construction of a democratic country." A correspondent academician was to be selected among "outstanding scholars who are currently carrying out important scientific research." For the North Korean AS Rules, see *Kwahagwŏn ūi yŏnhyŏk* [The History of the Academy of Sciences] (Pyongyang: kwahagwŏn ch'ulp'ansa, 1957), pp. 107-116. For the list of North Korean academicians and correspondent academicians, selected in 1952, see Kang Ho-che, *Pukhan kwahakkisul hyŏngsŏngsa I*, p. 110.



equipment, and related storage problems (some equipment were “left to be forgotten” in unsuitable, damp rooms) were repeated. The country’s insufficient investment in the AS was clearly felt when it was moved to its location in light-type Korean houses (*chip*) and in the “bad” material compensation. The latter point was especially pressing, driving researchers to find ways to feed their own families. Most government funds went toward buying equipment that brought another set of problems such as in storage and usage. The North Korean AS, Chang continued, had almost no relations with scientific institutions in the socialist bloc, as indicated by the AS rejecting the invitation of the East German AS four times, referring to oft-repeated “currency difficulties” and “unpreparedness.” Upon hearing, a shocked Soviet counterpart asked if Chang’s account was really true.<sup>267</sup> In October 1955, the North Korean AS’s leadership was still located in a bomb shelter. The widespread lack of qualified cadres and poor research conditions were discussed by Ch’oe Sam-ryōl, the Vice President of the AS. According to this North Korean chemist, who was highly respected in the country, his government assigned 1.5 million rubles from Soviet assistance to the Academy to buy textbooks, materials, equipment, and literature; however, those essentials were stored in a warehouse because of the lack of a suitable building; Ch’oe was too uncomfortable to talk about it.<sup>268</sup>

By the end of 1956, the North Korean AS suffered several chronic issues regarding international communications and insufficient material conditions. Although the need to

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<sup>267</sup> “Meeting minutes with Chang Chu-ik, the principal academy secretary of the Academy of Sciences of the DPRK (March 19, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 8, ll. 142-145.

<sup>268</sup> “The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, from September 29 to October 18, 1955 (October 12, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 7, ll. 122-124.

“strengthen the relations” with institutes in socialist countries was widely shared among North Korean researchers, there was simply no chance to do so. A communication between a representative of the North Korean AS and the Soviet counterpart in the mid-1950s serves as a great example. In October 1955, the North Korean AS requested the Soviet AS hand over its charter and provision of the Academy’s structure.<sup>269</sup> However, the Soviet side came back to its North Korean counterpart only in February 1956, asking to clarify the issues that the North Korean AS wanted to deal with.<sup>270</sup>

Still, the Soviet AS wanted to establish a close relationship with its North Korean counterpart, emphasizing the importance of techno-scientific cooperation. Discussing the absence of trained cadres, both the President and the Vice-president of the North Korean AS revealed that they completely lacked “literature, theoretical works, trained cadres, and fissionable elements.” According to the president, the systematic training of cadres was planned from 1956. As a part of this program, the president wanted to send 15 North Korean researchers to the Soviet Union, including five scholars, to study in doctoral courses at the Soviet AS.<sup>271</sup> Indeed, the main objective was to learn from “advanced science” in the fields such as physics (elementary particle), metallurgy (electric smelting), chemistry (vinyl acetate),

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<sup>269</sup> “Meeting minutes with Chu So-hyŏn, a second secretary in the Embassy of the DPRK in the USSR (October 26, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 6, l. 47.

<sup>270</sup> “Meeting minutes with Park Tŏk-hwan, a counselor of the Embassy of the DPRK (February 17, 1956),” AVPRF, f. 0102, op. 12, p. 68, d. 4, l. 12.

<sup>271</sup> “The diary of V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period of May 24 to June 11, 1956 (June 11, 1956),” AVPRF, f. 0102, op. 12, p. 68, d. 5, ll. 121-124.

biology (cerebrum physiology), and political economy.<sup>272</sup> But, this request was fulfilled only partially, as the Soviet AS abolished its doctoral program in the same year. Instead of those who were to be sent to take doctoral courses, five researchers, who finished their graduate programs in North Korea but needed to improve their overall qualification, were sent to the Soviet Union for two years.<sup>273</sup> Eventually, the North Korean AS sent 10 researchers.<sup>274</sup> From early November to late December, 1956, a group of Soviet scientists visited the North Korean AS to help organize some of the fundamental work.<sup>275</sup> However, for North Korea to become an industrial power like the Soviet Union was a faraway and unrealistic goal. In November 1956, a North Korean lecturer, who graduated from Kiev University in 1955 majoring in political economy of capitalist countries, stated that his life as a university student with stipend support in Soviet Ukraine was much better than working as a lecturer at Kim Il-sung University. Eleven percent of his salary was spent on commuting by bus every month.<sup>276</sup>

### ***Looking at Advanced Pie in the Socialist Sky while Envisaging Self-Reliance***

From the perspective of North Korean leadership, the agreement of Techno-Scientific Cooperation between the Soviet Union and North Korea, signed in Moscow on February 5, 1955, was another great but burdensome opportunity to facilitate technology transfer.<sup>277</sup> In

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<sup>272</sup> AVPRF, f. 0102, op. 16, p. 24, d. 4, ll. 32-33 [original text in Korean].

<sup>273</sup> AVPRF, f. 0102, op. 12, p. 68, d. 4, l. 97.

<sup>274</sup> *Bulletin 1* (January – March 1957), pp. 88-89.

<sup>275</sup> *Bulletin 2* (April – June 1957), p. 5.

<sup>276</sup> AVPRF, f. 0102, op. 16, p. 24, d. 6, ll. 59-60.

<sup>277</sup> GARF, f. 365, op. 2, d. 9, ll. 2-3.

retrospective, North Korea was a latecomer in the list of bilateral signatories of such cooperation with the Soviet Union following Poland and Czechoslovakia (1947), Hungary (1949), Romania and Bulgaria (1950), East Germany (1951), Albania (1952), and the PRC (1954). As historian Sari Autio-Sarasmo examines, although the Soviet Union tried to bypass a strict embargo of techno-science of the West, institutionalized in the Coordinating Committee for Multilateral Export Controls in 1949, the domestic application and integration of costly Western technologies into a Soviet mode of production through a Soviet-Finish cooperation in 1955 and other similar efforts afterward, made little impact.<sup>278</sup> Interestingly, North Korea-Soviet exchanges resembled in some ways indirect Soviet-West interactions; North Korea, as a loyal customer to Soviet industrial techno-science, had to pay a good deal of money to its providers in Moscow for limited technology transfer. North Korea's chronic economic vulnerability and growing industrial capability in the mid-1950s made its leadership search for domestic alternatives that would not only boost industrial production, but also protect its hard-earned state's sovereignty. Consequently, while North Korea never broke away from the broader socialist networks of techno-science, its leadership gradually became convinced of a cheap and promising source for managing its economic development: people's minds.

Since the 1949 North Korea-Soviet agreement of economy and culture, cooperation in science and technology was carried out by exchanging the "experience" of the involved parties. By early 1955, this type of cooperation included exchanging information through technical documents, offering service and help by dispatching experts, and sending researchers for learning as well as training purposes. Particularly important for materially poor North Korea

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<sup>278</sup> Sari Autio-Sarasmo, "Soviet Economic Modernisation and Transferring Technologies from the West," pp. 104-123.

was the exchange of technical documents, as transferring such secrets of advanced technoscience was free, except for the minor cost of making physical copies, as stipulated in the 1955 agreement. Under the same agreement, a Soviet-North Korea commission would hold biannual meetings in both Moscow and Pyongyang.<sup>279</sup> Fragmented documents indicate that the cost for exchanging delegations was shouldered by the dispatching party.<sup>280</sup> That is, the more North Korea was deeply integrated into the socialist networks of techno-science, the more costly the bills were.

The first North Korea-Soviet session for techno-scientific cooperation was held in Moscow from January 23 to 31, 1956. This session discussed issues regarding the transfer of experience, setting the pattern for future dialogue. The Soviet side agreed to satisfy the request of the North Korean side, promising to transfer technical documents on capital construction (7 topics), working drawings with technical documents for the production of machinery and equipment (8 topics), technical documents on production technology (11 topics), and other types of documents (8 topics) during the first half of 1956.<sup>281</sup> In return, the North Korean side agreed to receive Soviet experts to familiarize themselves with production of calcium cyanamide, dicyanamide, and melamine in North Korea as well as to transfer relevant technical documents to the Soviet Union. Under this framework of cooperation, bilateral flows of experts

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<sup>279</sup> S.L. Tikhvinskiy et al., *Otnosheniya Sovetskogo Soyuzs s narodnoy Koreyey 1945-1980*, p. 109. This rule was repeated in the first session. See “Protokol (January 31, 1956)” RGAE, f. 9493, op. 1, d. 1111, l. 3.

<sup>280</sup> “Meeting minutes with Ri Tong-kön, the Vice Minister of Foreign Affairs of the DPRK (April 19, 1956),” AVPRF, f. 0102, op. 16, p. 24, d. 6, ll. 34-35.

<sup>281</sup> RGAE, f. 9493, op. 1, d. 1111, ll. 7-10.

and researchers became regularized. Over the course of 1956, a group of Soviet experts on prices and salary planning was sent to North Korea, at the latter's request. Also, a large group of North Korean workers in construction, education, fishing, agriculture, and the electric power industry were sent to the Soviet Union to study how the Soviets managed those sectors.<sup>282</sup>

The second session, held between December 8 and 17, 1956, in Pyongyang shows the “unevenness” that was integrated in the socialist cooperation of science and technology, especially between North Korea and the Soviet Union. While agreeing to send five technical documents and samples to the Soviet Union in 1957, North Korea requested technical documents on capital construction (thirteen topics), working drawings with technical documents for the production of machinery and equipment (fifty topics), technical documents on production technology (twenty-three topics), and other types of documents (twenty-five topics). Also, North Korea received thirty-seven items that included fifteen standard projects, eleven technical documents and drawings, and eleven technical parts between the first and second sessions. Starting from the second half of 1956, both countries decided to implement exchange of descriptions for copyright certificates and patents of inventions. With different duration ranging from ten days to two months, seventy-five North Korean specialists visited several places in the Soviet Union in 1956.<sup>283</sup>

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<sup>282</sup> V. Nemchikov, “O khode vypolneniya soglashenii mezhdru SSSR i KNDR /Spravka/ (September 19, 1956),” RGANI, f. 5, op. 28, d. 412, ll. 324-325.

<sup>283</sup> Among these 75 experts, 17 were industrial and civil construction experts, 22 twenty-two electrical power station engineers, 14 fishery specialists, 15 irrigation specialists, 2 were participants in a stratigraphy conference in Khabarovsk, and 5 were participants in a shipbuilding conference in Leningrad. RGAE, f. 9493, op. 1, d. 1112, ll. 1-24.

It is important to understand that techno-scientific exchanges in the socialist bloc were also carried out through cultural exchanges, as “culture” was broadly defined by socialist countries to include many relevant fields of science and technology, including medical science. In May 1956, North Korea revealed its intention to expand the general scope of cultural relations with the Soviet Union.<sup>284</sup> As predicted in the Soviet-North Korea joint communique signed in July, the North Korea-Soviet agreement of cultural cooperation was reached in September, with a clear indication of the “reciprocity” principle in addressing financial issues.<sup>285</sup> In December 1956, North Korean Vice Minister of Culture and Propaganda asked about the possibility of sending some North Korean cultural delegations at the expense of the Soviet Union. Although a number of North Korean researchers wanted to take this valuable chance to acquire experience in the Soviet Union, the North Korean government had no choice but to reduce the number of delegations due to the financially “tense situation” in the 1957 plan. Unfortunately, the Soviet counterpart politely rejected the request.<sup>286</sup>

While participating in the socialist networks of techno-science in the mid-1950s, issues such as widespread bureaucratism (*kwallyojūi*)—a term that described slow and irresponsible execution of the given orders by different offices in the North Korean government—, a lack of qualified cadres and their misplacement inside the government, inefficient labor organization and insufficient compensation, a lack of production culture, and low utilization and careless

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<sup>284</sup> AVPRF, f. 0102, op. 16, p. 24, d. 6, l. 39.

<sup>285</sup> S.L. Tikhvinskiy et al., *Otnosheniya Sovetskogo Soyuzs s narodnoy Koreyey 1945-1980*, pp. 134-136.

<sup>286</sup> “Meeting minutes with Kim Chong-hang, a Vice Minister of Culture and Propaganda of the DPRK (December 13, 1956),” AVPRF, f. 0102, op. 17, p. 26, d. 5, ll. 9-10.

handling of machines could not be resolved overnight. In the March Plenum of 1954, Kim Il-sung demanded workers handle equipment and materials with great care, as they were not only made by the “sweat of workers of fraternal countries,” but also necessary to those sending countries. In relation to sending North Koreans abroad, Kim continued, one of the serious flaws was the disorganized dispatch of experts, who simply had a tour to a couple of factories, losing a precious chance to improve their own specialization.<sup>287</sup> Also, the North Korean leadership saw learning from foreign experts in the DPRK as an imperative task for North Korean workers, while trying to provide the conditions where those foreign experts could efficiently and effectively work.<sup>288</sup>

Simultaneously, there was a growing understanding that advanced science and technology for industrial production were meaningless if applied mechanically to the conditions of the DPRK, a point that was already raised, albeit subtly, in the late 1940s. Throughout the reconstruction period, knowing “North Korean realities” became a crucial part of the country’s economic management. As a way of effectively using equipment, “creative cooperation” between researchers and workers was repeatedly emphasized in North Korean media.<sup>289</sup> Over the course of 1955 and 1956, these mandates of effectively using equipment were popularized in a variety of discussions not only about production that included the mining industry, machine-building, and agriculture,<sup>290</sup> but also about increased utilization and

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<sup>287</sup> Kim Il-sung, *Külloja* [Worker] 4 (April 1954), reprinted in *SBNK* 57, pp. 249-291.

<sup>288</sup> Kim Sŭng-kwŏn, *Worker* 7 (July 1954), reprinted in *SBNK* 58, pp. 171-187.

<sup>289</sup> Chu Pyŏng-sŏn, *Worker* 10 (October 1954), reprinted in *SBNK* 59, pp. 79-93.

<sup>290</sup> Kim Yŏl, *Worker* 1 (January 1955), reprinted in *SBNK* 64, pp. 55-69; Chŏng Yu-ho, *Worker* 3 (March 1955), reprinted in *SBNK* 64, pp. 338-350; Rim Hŭi-ch'un, *Worker* 4 (April 1955), reprinted in



conservation of the labor force.<sup>291</sup> All of these ideas that Kim Il-sung told the nation implied the significance of replacing costly imports of techno-scientific objects and knowledge with homegrown ones. Under this climate, strengthening North Korea's relations with the socialist bloc, though regarded as fundamentally important by North Korean planners, was eclipsed by the importance of securing the country's economic independence (*charip*).<sup>292</sup>

Here, the Soviet Union's weak power projection capabilities, a capacity to impose its will to other states through assistance, represented by the lack of measures Soviet planners took to affect the North Korea's course of action, coincided with Kim Il-sung's ambitions to take a great leap in terms of rapid industrialization. In April 1956, the Third Congress of the Workers' Party of Korea (WPK) declared that it was important to concentrate the country's available resources on the development of heavy industry, with a focus on machine-building. However, from the perspective of Soviet observers, this way of development was based on neither the precise calculation of possibilities, nor the chances of economic coordination with the socialist bloc.<sup>293</sup> A series of high-level Soviet suggestions, such as the limited utilization of capitalistic measures to uplift backward agriculture and strengthening the mining industry for export, were made to discourage Kim Il-sung from maintaining his development strategy in the first half of the 1950s; however, they were to no avail.<sup>294</sup> Indeed, Kim Il-sung became less compliant in

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*SBNK* 64, pp. 460-471.

<sup>291</sup> Kim Chŭng-sam, *Worker* 7 (July 1956), pp. 72-85.

<sup>292</sup> Ri Chong-ok, *Worker* 8 (August 1956), pp. 18-29.

<sup>293</sup> V. Ivanov, "Itogi III s'ezda Trudovoi Partii Korei (May 19, 1956)," *RGANI*, f. 5, op. 28, d. 411, l. 157.

<sup>294</sup> For a historical account that views these Soviet proposals as a clear sign of its "interference" into

dealing with the post-Stalin Soviet leadership, listening carefully but selectively to his Soviet counterparts' oral advice. Combined with North Korean planners' high expectations on its own capability to manage the economy, which appeared to be proven by successful reconstruction projects despite the depletion of free aid, an upcoming surge of industrial production in the second part of the 1950s would seem to readily justify North Korea's unique mode of development. After all, the authority of Kim Il-sung as an economic decision-maker as well as industrial planner was regarded as infallible by late 1955.<sup>295</sup>

The return of North Korean industrial experts from the Soviet Union in the mid-1950s substantially contributed to a better understanding of the strengths and weaknesses of engaging with the socialist networks of science and technology. A number of North Korean industrial specialists discussed profitability, or the relations between benefits and costs of sending experts abroad, as the most pressing issue. One of such specialists was Ri Chae-ch'ŏn, the chief engineer of Kangsŏn Steelworks, who pointed out the price and some side effects of such a practice. His criticism targeted the state policy of sending students abroad; to his view, a tremendous amount of funds for sending a small number of future experts could be used instead for a large number of domestic students. However, the real problem lied in the fact that those who studied or trained in the bloc countries did not know North Korea's industrial realities. For example, some workers at his factory, who spent time in the Soviet Union, requested dried horse excrement for obtaining the permeability of molding sand as well as coating materials for welding rods, both of which were largely used in the Soviet Union but were not available

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North Korea's domestic affairs, see Cho Su-ryong, "Jaryeokgaengsaeng Economy," pp. 109-132.

<sup>295</sup> "The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, from October 19 to 28, 1955 (October 20, 1955)," AVPRF, f. 0102, op. 11, p. 60, d. 7, ll. 133-135.

in North Korea. Subsequently, they did not know the nature of homegrown materials and equipment, taking longer to get to know North Korean circumstances. As a breakthrough, Ri suggested sending only the workers who were already equipped with several years of experiences in production sites, as they would immediately identify problems and come up with solutions.<sup>296</sup> This thought was readily amplified with a growing understanding that North Korea possessed unlimited potential in terms of natural resources and industrial possibilities. Those opportunities for mass industrial production were soon to be found by state-wide campaigns that would mobilize the whole nation. In December 7, 1956, Kim Il-sung told the Soviet representative that North Korean leadership unanimously agreed on a general line of industrial production such as enhanced use of existing machines and equipment, and efficient use of domestic resources.<sup>297</sup> That is, North Korea began to rely more upon its domestic resources, as it was much cheaper than looking outwards. However, no one, including Kim Il-sung himself, could yet imagine what the magnitude of North Korea's success, gauged in an annual growth rate in industrial production, would look like at the end of the 1950s.

### ***Concluding Remarks***

The abolition of the Soviet advisors' institution in North Korea starting in early 1957 represented a significant change in the structure of the socialist networks of science and technology. Although the decision was made by the Soviet Union in order to manage its sphere of influence in Eastern Europe after the Hungarian Uprising in the fall of 1956, the same

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<sup>296</sup> Ri Chae-ch'ŏn, *Worker* 12 (December 1956), pp. 127-136.

<sup>297</sup> "Meeting minutes with Kim Il-sung (December 7, 1956)," AVPRF, f. 0102, op. 13, p. 72, d. 6, ll. 11-13.

decision was immediately approved by North Korean leadership that was ardently searching for cheaper and easily-accessible alternatives for mass industrial production in the country.<sup>298</sup>

One of the crucial factors that needs to be considered to understand the “unevenness” of socialist cooperation in science and technology from 1950 to 1956 is the role of the Soviet Union’s weak power projection capabilities towards its East Asian allies. Soviet decision-makers were not able to fully understand what they could obtain from socialist regimes in East Asia, hesitating to use what they provided to them as diplomatic leverage in the name of assistance. While North Korea’s participation in the socialist networks of techno-science expanded, Soviet leadership, especially in the post-Stalin period, appeared to have been disinterested and sometimes even afraid to exploit such help as a tool to meet its own strategic needs. As archival documents indicate, a number of Soviet officers, who were in charge of dealing with North Korea from 1953 to 1956, had been reserved that the Soviet Union *should* make an intervention to steer the direction that Kim Il-sung was headed for; their primary point of interest with North Korea was maintaining an image of the Soviet Union as a reliable partner to conduct—*socialist*, rather than capitalist—business with. Having this picture in mind, as this chapter has emphasized, would make it easier to understand how and why a number of North Korean requests related to techno-scientific matters were fulfilled, giving North Korea a chance to explore what it meant to be a part of the socialist bloc. However, the outcomes of such interactions were almost always less than the original request in terms of duration, size, or volume.

Contrary to the received wisdom that North Korea started to stand alone after the fall

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<sup>298</sup> RGANI, f. 5, op. 28, d. 486, ll. 36-37 [original text in Korean].

of 1956, Kim Il-sung increasingly placed more expectations and hopes in the socialist networks of techno-science for benefiting his industrialization project. What previous studies have usually omitted were not only the post-1956 history of North Korea's engagement with the socialist bloc, but also Kim Il-sung's perception of the mounting bills that the country had to deal with in order to continue its mode of development. Especially due to the latter, a deep shadow of economic burden after the war and reconstruction was cast on North Korea in the second half of the 1950s.

### **Chapter Three: North Korean Structure of Techno-Scientific Revolutions, 1957-1965**

This chapter explores how the interactions between North Korea and the Soviet-led socialist bloc in the late 1950s and early 1960s and the country's weak economic capabilities combined to result in the rise of *Juche* as a mode of economic development and techno-scientific innovation, which has been understudied previously. It focuses on Kim Il-sung's hands on interventions in the operational procedures of production sites and the vital assistance of the Soviet ambassador to North Korea Alexander M. Puzanov. Puzanov served as ambassador to North Korea from 1957 to 1962 and accompanied Kim Il-sung's trips to the country's production sites. This chapter also attends to how the convergence of North Korea's short-term success of its "own" techno-science, the Sino-Soviet split, and changes of North Korea's perception of the socialist bloc permanently narrowed the scope of the country's choices at the expense of *Juche*'s rise.

This chapter argues that North Korea's industrial and techno-scientific success in the late 1950s and early 1960s justified its leadership's choice of legitimizing *Juche* as the only mode of innovation that urged the nation to follow the Party's guidance to remove "old thoughts." However, the relationships between North Korea's engagement with the socialist bloc and the industrial "success" that bore fruit from such relationships have never been previously examined. To substantiate such an argument, this chapter utilizes travel logs of Soviet diplomats who visited the country's production sites and archival materials to reconstruct how North Korean leadership managed industry and techno-science from 1957 to 1965. A close reading of the sources stated above will reveal how Kim Il-sung took advice

selectively from Soviet officials who were deeply invested in assisting North Korea.<sup>299</sup>

One of the main tasks of this chapter is to reconsider the dominant narrative of North Korea's transformation in the late 1950s and early 1960s. Previous studies have examined post-1956 North Korean history with two main assumptions. First, the decreasing volume of assistance from the Soviet-led socialist bloc meant that the Soviet Union lost diplomatic leverage to make interventions in North Korea's domestic affairs, a crucial factor that enabled Kim Il-sung's to pursue more independence. Second, North Korea-Soviet relations became less amicable and even hostile, especially in the early 1960s. Both assumptions produce the narrative that after the defeat of the opponent group in August 1956, Kim Il-sung began to steer the country towards absolute dictatorship, while skillfully balancing between both the Soviet Union and the People's Republic of China (PRC).<sup>300</sup> The origins of the Thousand-li Horse Movement (*Ch'öllima undong*), signature mobilization campaigns of North Korea, are discussed within this narrative. And as outside help decreased, the narrative continues, Kim Il-sung found a breakthrough from the collectivity of the working masses that achieved a high degree of success by the early 1960s.<sup>301</sup> These various accounts of post-1956 North Korean

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<sup>299</sup> For accounts that examine the role of advice in socialist regimes, see Hua-Yu Li, *Mao and the Economic Stalinization of China, 1948-1953* (Lanham: Rowman and Littlefield, 2006); Kyung Deok Roh, *Stalin's Economic Advisors: The Varga Institute and the Making of Soviet Foreign Policy* (New York: I.B. Tauris, 2018).

<sup>300</sup> Nobuo Shimotomai, "Kim Il Sung's Balancing Act between Moscow and Beijing, 1956-1972" in Tsuyoshi Hasegawa ed., *The Cold War in East Asia 1945-1991* (Stanford: Stanford University Press, 2011), pp. 122-151.

<sup>301</sup> Kang Ho-che, *Pukhan kwahakkisul hyöngsöngsa I* (Seoul: Sönnin, 2007).

history are predicated on the assumptions stated above.<sup>302</sup>

This dominant narrative also has limitations in explaining North Korea's science and technology from 1957 to the early 1960s. First, this narrative is usually deployed *without* reviewing the contemporary North Korea-socialist bloc exchanges in the same period, simply arguing that the total volume of such interactions decreased. On the contrary, as this chapter shows, North Korea's engagement with the socialist bloc enlarged, specifically in the form of exchanging technical documents, which was incomparably cheaper than inviting or dispatching experts. Second, this narrative do not use the archival sources from Russia as previous studies only examine Korean-language sources that unintentionally dismissed the fact that the Soviet Union remained the largest techno-science provider of North Korea during the entire Cold War.<sup>303</sup> Third, this narrative attributes all of North Korea's success to Kim Il-sung's guidance.<sup>304</sup> However, as historian Lee Se-young shows, the North Korean workers' attitude

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<sup>302</sup> Cho Su-ryong, "Chǒnhu Pukhan ūi sahoejuūi ihaeng kwa 'charyōkkaengsaeng' kyōngje ūi hyōngsōng" [Jaryeokgaengsaeng Economy: North Korea's Socialist Transition and Its Formation in 1953-63] (in Korean) (PhD Diss., Kyung Hee University, 2018); Lee Se-young, "Pukhan 'sahoejuūi' nodongja ūi hyōngsōng kwa saengsanhyōnjang ūi pyōnhwa (1945-1960)" [The Formation of 'Socialist' Workers and Changes in Production Sites in North Korea (1945-1960)] (in Korean) (PhD Diss., Yonsei University, 2020).

<sup>303</sup> Natalia Bazhanova, *Vneshne-ekonomicheskie svyazi KNDR: V poiskakh vykhoda iz tupika* (Moscow: Nauka, 1993), pp. 55; 84.

<sup>304</sup> For an outstanding account that views both a generation change and solidarity among the workers in production sites as the important driving factors that enabled North Korea's increased industrial productivity in the 1950s, see Lee Se-young, "The Formation of 'Socialist' Workers and Changes in



toward to the national leader varied widely from devotion to indifference. In general, the North Korean worker's performance was frequently exacerbated by an insufficient amount of material compensation. Finally, this narrative risks reproducing official North Korean accounts that emphasize unusual examples of increased productivity or invention. Unfortunately, the lack of source materials that shows how North Korean factories and industrial enterprises operated makes it difficult for scholars to evaluate the reliability of official accounts.

### ***Dreaming Techno-Scientific Revolutions with Chronic "Tension" in the Wallet***

As in the first half of the 1950s, a variety of difficulties such as low quality goods for export plagued North Korea's international trades in the second half of the 1950s, which strained the country's already weak solvency, or capacity to pay to meet any obligation incurred. The economic situations were problematic for the North Korean leadership that planned to import goods such as fuel and steel that were essential for industrial production. Subsequently, the supplier sides in the socialist bloc suffered the delay in exporting to North Korea the goods, materials, and equipment, in exchange for the country's natural resources. In this context, North Korean planners came to focus its trade efforts on the Soviet Union, while continuously lobbying Moscow to purchase more North Korean goods (mostly mineral ores and concentrates) and to postpone the repayment of loans that were made earlier.

Due to the aforementioned economic issues on vital international trade, the First Five-Year Plan (FFYP) that was expected to rapidly develop North Korea's economy met the deficit in balance of payments from the beginning in early 1957. North Korean planners thought that

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Production Sites in North Korea (1945-1960)."

the trade deficit of fifty million rubles was to be covered with grant from the socialist bloc. However, that amount did not exist. Along with this complication, the Trade Ministry of the Soviet Union wanted to raise the price for North Korean zinc concentrates, as the current price was considerably lower than the world price. The Soviet Union also wanted to reduce the purchase of monazite, which would expand North Korea's trade deficit to ninety-five million rubles. To address this issue, Kim Il-sung asked Moscow to keep the current price, to buy for two to three years, and to allow to use "help" (300 million rubles) to clear the debt. "If this would not work," the North Korean leader continued, "would the Soviets be interested in giving a credit to North Korea to cover its trade with the Soviet Union for 1957?"<sup>305</sup> In April, Moscow responded positively to Kim Il-sung, promising to maintain the price for zinc concentrate and buy 15,000 tons of monazite, both for one year. Appealing with the country's difficult situation, Kim asked the Soviets to send additional raw material products including coal, cotton, sulfur, all of which amounted to thirty-nine million rubles. In order to match this deal, North Korea would not receive some of the Soviet goods (five million rubles) and deliver North Korean goods (twenty-one million rubles).<sup>306</sup> Kim Il-sung did not fail to repeat his demand regarding freezing price for mineral ores and their purchase for 1958.<sup>307</sup> However, it turned out that

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<sup>305</sup> "Meeting minutes with Kim Il-sung (January 23, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 6, ll. 84-85.

<sup>306</sup> The suggested North Korean products included cement (50,000 tons), rolled non-ferrous metals (10,000 tons), ammonium sulfate (10,000 tons), zinc concentrates (7,000 tons), lead (1,340 tons), gold (5 tons), and apples (1,000 tons).

<sup>307</sup> "The diary of comrade A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from April 13 to 27, 1957 (April 17, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 5, ll. 72-79.

North Korea's FFYP had the trade deficit of around 400-500 million rubles by July 1957.<sup>308</sup> Kim Il-sung instructed the North Korean delegation in Moscow that the discussion of a deficit issue should be postponed.<sup>309</sup> Eventually, the Soviet Union came to terms with Kim Il-sung to his favor, agreeing to the continued purchase of North Korean mineral ores up to 1961.<sup>310</sup>

Although most of the bloc countries kept a "friendship price," a trade policy that was unevenly favorable to North Korea, North Korea's trade of mineral resources with the socialist bloc led to a growing suspicion of a neo-colonial relationship with the Soviet Union from some North Korean officers and students. As a way of practicing socialism in international trade, the Soviet Union assisted smaller bloc countries such as North Korea by buying their goods and natural resources at higher prices. In the international trade, the Soviet Union continued to buy some North Korean goods in the late 1950s, which Moscow had possessed "excessively" (*v izbytku*). For example, the price of North Korean monazite was two times higher than the world price.<sup>311</sup> Kim Il-Sung himself duly recognized this issue, stating that this was because the Soviet Union "understood our hard economic situation."<sup>312</sup> However, the leadership's view

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<sup>308</sup> "Meeting minutes with Park Kil-ryong, the Chief of the First Department of the Ministry of Foreign Affairs of the DPRK (July 16, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 6, ll. 239-240.

<sup>309</sup> "Meeting minutes with comrade Park Kil-ryong, the Chief of the First Department of the Ministry of Foreign Affairs of the DPRK (July 24, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 6, l. 244.

<sup>310</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from October 1 to 25, 1957 (October 16, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 5, l. 703.

<sup>311</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from October 1 to 25, 1957 (October 23, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 5, l. 679.

<sup>312</sup> "Meeting minutes with Kim Il-sung (January 23, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 6, l. 84.

was not shared with mid-level cadres that worked in diplomacy and international trade of North Korea. By July 1957, for example, a number of officials in the North Korean Foreign Trade Ministry supported the idea of extensive trade with Japan. The reason was that the Soviet Union and Czechoslovakia denied to provide to North Korea 4,000 tons of zinc cable. Those officials reasoned that zinc cable could be supplied from Japan with higher quality and at lower prices. Although it was explained that the Soviet Union paid a “high price” to North Korean zinc concentrates, those officials posited that the Soviet Union could extract rare metals such as bismuth and cadmium from North Korean zinc concentrates.<sup>313</sup> Some North Korean university students studying in socialist countries had similar impressions that North Korea was unquestionably obedient to the Soviet Union that took useful minerals almost for free.<sup>314</sup>

Deficiency might best capture the reality of North Korea in the second half of the 1950s according to documents from Soviet archives. For example, the North Korean debt, incurred from early 1955 by receiving Soviet-made visual aids (*naglyadnye posobiya*), was cleared only partially by late August 1957.<sup>315</sup> In addition to the chronic shortage of funds, a range of materials such as paper, fishing vessels, and construction materials were lacking. However,

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<sup>313</sup> “Meeting minutes with Park Kil-ryong, the Chief of the First Department of the Ministry of Foreign Affairs of the DPRK (July 12, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 6, ll. 228-230.

<sup>314</sup> “Meeting minutes with Kim Il-sung (January 30, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 6, ll. 107-110.

<sup>315</sup> “Meeting minutes with Kang Pyŏng-ryul, a first secretary of the Embassy of the DPRK (March 13, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 4, ll. 8-9; “Meeting minutes with Park Tök-hwan, a counselor of the Embassy of the DPRK in Moscow (August 29, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 4, ll. 32-33.

Kim Il-sung continued his optimistic reason that the faster the cement factory was constructed, the more cement could be produced to sell to Soviet Union and other interested countries.<sup>316</sup> By late 1957, foreign diplomats in Pyongyang clearly understood that North Korea strived to save funds in terms of receiving assistance, causing conflict of opinions between the supplier side that argued for the designated number of experts and the receiver's side that wanted the reduced number of experts.<sup>317</sup>

However, it is crucial to understand that financial difficulties were not only confined to North Korea; rather, it was universal in the Second World. When North Korea requested expanding cultural relations with the German Democratic Republic (GDR), a German diplomat spoke about the limited financial opportunities for broader exchanges, referring the need to save money.<sup>318</sup> In mid-1958, North Korea requested the PRC increase the volume of the trade turnover by fifty million rubles in 1959 from the previous amount of 120 million rubles, asking to receive 4,000-5,000 tons of certain types of steel per year. However, due to the difficulties

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<sup>316</sup> For the lack of paper, see "Meeting minutes with Song Hak-yong (March 12, 1957)," AVPRF, f. 0102, op. 17, p. 26, d. 5, ll. 57-58. For the lack of fishing vessels and gears, see "Meeting minutes with Park Sŏng-ch'ŏl, a Vice Minister of Foreign Affairs of the DPRK (March 22, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 6, ll. 143-144. For the lack of construction materials, see "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from April 5 to 12, 1957 (April 9, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 5, l. 22.

<sup>317</sup> "Meeting minutes with comrade Sobol', a counselor in the Czechoslovak Embassy (October 4, 1957)," AVPRF, f. 0102, op. 17, p. 26, d. 5, ll. 123-124.

<sup>318</sup> "Meeting minutes with Konshel, an attaché of the Embassy of the GDR in the DPRK (January 24, 1957)," AVPRF, f. 0102, op. 17, p. 26, d. 5, ll. 50-52.

of meeting the domestic needs, the Chinese side rejected the request.<sup>319</sup>

Thus, North Korea in the second half of the 1950s centralized its diplomatic and trade efforts to the Soviet Union, the most capable patron in the socialist bloc. In early April 1957, the Czechoslovak delegation came to North Korea to discuss economic issues. However, during the three-hour-long discussion, economic matters were not even mentioned. In reality, Nam Il asked for more aid in terms of goods (textile and shoes) prior to the delegation's arrival. However, after the Czechoslovak ambassador revealed the "known difficulties" of his own country, North Korean officials never asked for additional assistance.<sup>320</sup> Although Kim Il-sung told the Soviet ambassador that the "high-minded (*gordy*) people of [North] Korea" had never asked the same request considering Czechoslovakia's difficulties,<sup>321</sup> he continued to ask for a variety of assistance to the Soviet Union up until November 1962.<sup>322</sup> In this context of constant domestic deficit and close North Korea-Soviet relations, North Korean planners accelerated to improve the country's capabilities in the development of science and technology.

One of the initial steps to make "technological progress" (*kisuljök chinbo*) in North

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<sup>319</sup> "Meeting minutes with comrade Chen Wen-jin, a first secretary of the Chinese Embassy (June 27, 1958)," AVPRF, f. 0102, op. 14, p. 75, d. 8, ll. 218-219.

<sup>320</sup> "Meeting minutes with comrade Shikulash Shurina, the Czechoslovak Ambassador (April 6, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 6, ll. 163-165.

<sup>321</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from April 29 to May 4, 1957 (May 2, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 5, ll. 92-93.

<sup>322</sup> AVPRF, f. 0102, op. 18, p. 93, d. 5, ll. 1-189, partially translated in Park Chong-hyo, *Rösia Yönbang Oemusöng Taehanjöngch'aek Charyo* [The Materials of Korea Policy in the Ministry of Foreign Affairs of the Russian Federation] Vol. 2 (Seoul: Sönin, 2010), pp. 235-244.

Korean industry was to expand on-site guidance from the North Korean leadership led by Kim Il-sung himself to explain the Party's policy to the workers.<sup>323</sup> Historian Kang Ho-che argues that Kim Il-sung's visit to Kangsŏn Steelworks on December 28, 1956, was the beginning of the Thousand-li Horse Movement that demanded more efficiency in industrial production and exploration of untapped resources.<sup>324</sup> To substantiate his argument, Kang provides a number of cases of "collective innovation of technology" (*chiptanjŏk kisul hyŏksin*), a movement that aimed to enhance the workers' general performance to that of leading workers, in North Korean factories and enterprises, based solely on North Korean publications.<sup>325</sup> Thus, the remaining part of this section offers not only on-the-ground pictures of how North Korea's early techno-scientific revolutions began from the Soviet perspective, but also an original analysis of how Kim Il-sung's view on the inseparable relationship between industry and techno-science was bolstered through these tours with his Soviet advisor.

In May 6-13, 1957, Alexander Puzanov was invited to Kim Il-sung's on-site guidance tour in Hamgyong Province. This tour, as well as other trips he took in the second half of the 1950s, offered a great opportunity for him to personally observe how the North Korean

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<sup>323</sup> Park Chŏng-kyu, *Uri nara kongŏp esŏ ūi kisuljŏk chinbo* [The Technological Progress of Our Country's Industry] (Pyongyang: Chosŏn Rodongdang Ch'ulp'ansa, 1958); Kim Se-p'yŏng, *Kyŏnggongŏp paljŏn ūl wihan uri tang ūi chŏngch'aek* [Our Party's Policy to Develop Light Industry] (Pyongyang: Chosŏn Rodongdang Ch'ulp'ansa, 1961).

<sup>324</sup> Kang, *Pukhan kwahakkisul hyŏngsŏngsa I*, pp. 132-135.

<sup>325</sup> For a similar account which is solely based on North Korean publications, see Lee Se-young, "The Formation of 'Socialist' Workers and Changes in Production Sites in North Korea (1945-1960)," pp. 175-187.

leadership met the workers on production sites. The tour consisted of visits to major factories, enterprises, and cooperatives during the morning or afternoon; followed by a discussion with the representatives of local workers during the visit or later in the evening. For most of the issues, requests, and suggestions that were raised by the workers' representatives in the meeting, Kim Il-sung gave his agreement or approval, instructing his subordinates to take necessary measures. The following table reveals the schedule and the detailed workings of the the tour.

Table 3-1: Kim Il-sung's Tour in Hamgyong Province with Alexander Puzanov in May 1957

Date	Places Visited	Issues Raised
May 6	On the train	(A talk with Kim Il-sung) Syngman Rhee's conspiracy, the construction of a new irrigation system in Chŭngsan- <i>kun</i> , and food aid to South Korea.
May 7 (Ch'ŏngjin)	shipbuilding yard, fish cannery, fishing net factory	A delay in getting the designs and timber resources for making vessels, the lack of fishing gears and repair tools, and the need to start the whaling.
May 8 (Ch'ŏngjin)	Department store, food market, artificial fiber factory, steelmaking factory, Kim Ch'aek Steelworks	Allocation of more fund and acceleration of the delivery of equipment from the GDR, the lack of convenient facilities, the need to process byproducts from a coke battery, the organization of factory-run night schools and technical institutes, and the need to study in the Soviet Union.
May 9	Musan Mine, Komusan Cement Factory	The need to supply more machine to mines and mechanize the mining process, the need to change wooden fastenings in shafts with reinforced concrete (to save 6,000 cubic meters of wood), and the need to reduce military training loads for the workers.
May 10 (Ch'ŏngjin)	Ranam machine building factory, Kyŏngsŏng poultry breeding farm, Pongnam cooperative, Kyŏngsŏng electrical insulators factory	Kim Il-sung pointed out the "irrational" use of production place (48 machine tools in the place of 3,300 cubic meters) and instructed to bring the machine tools and equipment that were being newly made in Ranam factory to Kyŏngsŏng factory.
May 11 (Kilchu)	celluloid factory, plywood factory, P'yŏngnyuk	Soviet experts (working in the plywood factory) asked for the fast shipment of



	cooperative	necessary equipment, and Kim Il-sung instructed to apply reinforced-concrete-based beams and ceilings (instead of metal-based ones) to other construction sites.
May 12 (Sŏngjin)	refractory brick factory, Sŏngjin Steelmaking Factory, fish factory, Ŭnho fishing cooperative	Permission should be given by the local authorities to work in an uninhabited island for fishermen, which was banned by the Ministry of Internal Affairs.
May 13 (Hamhŭng)	Hŭngnam chemical fertilizer factory, Pon'gung chemical factory	The need to accelerate the delivery of Soviet equipment.

Source: “The diary of comrade A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from May 6 to 29 (May 6-13, 1957),” AVPRE, f. 0102, op. 13, p. 72, d. 5, ll. 105-142.

During the tour to Hamgyong Province, Kim Il-sung carefully listened to the comments and suggestions of the Soviet ambassador and Soviet engineers about the flaws, discovered in production sites, and the ways to address them. After having a tour to Ch'ŏngjin artificial fiber factory, Puzanov told Kim that the increase of planned production from 150 tons to 2,000 tons showed that the central authorities in Pyongyang had not known the actual production power of that factory and simply played safe. The 150 tons was the originally reported number from the Ministry of Light Industry and the increased amount of 2000 tons was set by the workers after “discussing the decisions of December Plenum in 1956 and having carefully calculated their own capability.” Kim Il-sung agreed with the Soviet advisors and suggested that the Party’s Central Committee would come up with the necessary resolutions. Furthermore, after the Soviets advised the leadership of one industrial enterprise to pay more attention to issues such as cost reduction and cost accounting, Kim Il-sung began to emphasize the seriousness and importance of such issues in his speeches (as in Kim Ch’aek Steelworks and to coal miners). Besides cost reduction and cost accounting issues, additional dire

complications resulted from logistical issues and failure to effectively utilize production areas. A considerable quantity of equipment delivered from the socialist bloc were not in operation and the relevant Soviet recommendations that were “undoubtedly better and profitable” from Puzanov’s perspective were not accepted by the North Korean workers. In order to address this issue, Kim Il-sung “very actively and decisively reacted” to what the Soviets recommended, giving concrete on-site instructions about production area use (as in Kyōngsōng electrical insulators factory). Kim Il-sung also became interested in making more accurate accounting of machines and equipment, which were not in use, after hearing from the accompanying Soviets. That is, Kim Il-sung’s view on how techno-science should directly support the country’s industry was primarily developed through a series of on-site guidance with Soviet advice.<sup>326</sup>

The same tour also shows Kim Il-sung’s obsession with the pace of economic development and increased production and his conviction on North Korean workers’ capacity to learn techno-science began to coalesce. For example, in one of his speeches during the May 1957 tour, Kim Il-sung spoke on the need to review the development of the metal industry in the Second FYP that would be supported by the Soviet Union and Czechoslovakia. However, given that North Korea’s First FYP was reviewed in Moscow in July 1957 and then officially approved by the North Korean leadership in March 1958, Kim Il-sung’s ambitious future plan revealed his haste in the advancement of North Korea’s industrial capacity. Kim’s stance can be verified by his words throughout the tour. After taking a look at the only blast furnace at Kim Ch’aek Steelworks, Kim stated that the reconstruction of another blast furnace would be finished within the period of the FFYP. Praising the miners of North Hamgyong Province for

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<sup>326</sup> “The diary of comrade A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from May 6 to 29 (May 6-13, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 5, ll. 105-142.

their service to the nation, Kim stressed the importance of more production, defining coal as “food for industry.” Furthermore, he emphasized the significance of making greater use of local materials, introducing standard methods of construction of buildings, organizing more technical schools, and translating more foreign books. As Kim Il-sung repeated the importance of meeting the “interests of the economic development” during the tour, the upcoming revolution in science and technology was expected to serve these economic interests, not the other way around.<sup>327</sup>

Hence, the beginning of North Korea’s techno-scientific revolutions was a hasty combination of Kim Il-sung’s optimistic reliance on the worker’s zeal in production sites and on-site advising from the Soviets who called for more rationalization. By August 1957, the North Korean leadership asked for the workers to be more agile and diligent, or to remain “vigilant” (*kinjangdoen*), since the production plan increased compared to that of the first half of 1957. While discussing how to celebrate the operation of electrolytic zinc workshop at Namp’o non-ferrous metal plant, the Soviet ambassador stated that new equipment would give the opportunity to enhance the workers’ technological knowledge and beneficial condition for production. Comparing the production of electrolytic zinc in the colonial period at 5,200 tons in 1944, Puzanov mentioned that once the plant was fully operational with the Japanese-built pipe of 182 meters, the highest in Asia, it would produce more than 12,000 tons of electrolytic zinc per year, towering over other similar plants in Asia.<sup>328</sup> At Nam’po plant that was

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<sup>327</sup> “The diary of comrade A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from May 6 to 29 (May 6-13, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 5, ll. 105-142.

<sup>328</sup> “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from August 1 to 15, 1957 (August 7, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 5, ll. 436-441.

reconstructed with guidance from a 40-strong Soviet group of experts, zinc concentrate was processed with a novel technology—a fluidized bed.<sup>329</sup> By late October 1957, a group of North Korean specialists from Hŭngnam factory visited Namp’o plant to learn modern process of a fluidized bed in order to apply the technology to their factory.<sup>330</sup>

Forming an important part of North Korean structure of techno-scientific revolutions was the maintenance of machines, equipment, and quality of industrial products which was prioritized as a state-endorsed mandate in relation to the country’s troubled international trade. In mid-1958, Kim Il-sung declared that ensuring the high quality of exports was an “internationalist duty” that North Korea must observe. Kim emphasized the importance of expanding the trade networks with capitalist countries based on the principle of equality and mutual benefit. For this, at the June Plenum of 1958, he ordered that North Korea needed to improve the quality of its exports to the world standard.<sup>331</sup> Moreover, the need to use fully imported machines with careful handling was repeatedly emphasized by the North Korean leadership, as “some consumers” in other countries cancelled North Korean products such as calcium carbide and silk for their poor qualities not up to the requirement of the standard world market. Interestingly, a group of North Korean officials, in preparation for the report to be

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<sup>329</sup> “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from August 1 to 15, 1957 (August 10, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 5, ll. 443-446; *Rodong Shinmun* August 11, 1957.

<sup>330</sup> “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from October 1 to 25, 1957 (October 25, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 5, l. 675.

<sup>331</sup> “Meeting minutes with comrade Ko Hi-man, the Chief of the Industry Department of the Central Committee of the WPK (June 7, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 8, ll. 252-256.

presented at the same Plenum, asked for advice from the Soviet Embassy one day prior to the Plenum.<sup>332</sup> That is, some of North Korean officials still sought Soviet advice to review their policy agendas even in the late 1950s.

While North Korean planners and diplomats in their dialogues with Soviet interlocutors emphasized the value of socialist assistance, the official propaganda focused on North Korea's own strength and abilities. A number of Soviet observers did not fail to notice this contradiction. For example, G.E. Samsonov, a first secretary in the Soviet Embassy, chastised North Korea's "completely insufficient" propaganda regarding fraternal help. Referring to the summary of the Central Directorate of Statistics (CDS), displayed in *Rodong Shinmun* (February 24, 1957), he pointed out that not a single article published in North Korean newspapers discussed the significance of socialist assistance. Samsonov brought a counter example of South Korean newspapers and radio programs that actively propagated U.S. assistance in building a small cement factory and a small power plant. Ri Il-kyōng, Samsonov's North Korean interlocutor and then the Chief of Propaganda and Agitation Department in the Central Committee, simply agreed with him, trying not to prolong the conversation.<sup>333</sup> In June 9-11, 1958, the Supreme People's Assembly (SPA) was held to review the country's FFYP. Puzanov attended the last session to hear Kim Il-sung's concluding speech that discussed the

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<sup>332</sup> "Meeting minutes with Chōng Tu-hwan, the Chief of the Finances, Trade, and Industrial Cooperative Department of the Central Committee of the WPK (June 9, 1958)," AVPRF, f. 0102, op. 14, p. 75, d. 8, ll. 199-104.

<sup>333</sup> "Meeting minutes with Ri Il-kyōng, the Chief of Propaganda and Agitation of the Central Committee of the WPK (July 15, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 6, ll. 235-238.

importance of Soviet assistance only in a couple of sentences.<sup>334</sup> On the same evening, Puzanov heard privately from Park Kil-ryong, a former Soviet Korean and North Korean diplomat, that the publication of the official report of the FFYP was delayed because Kim Il-sung suggested to add more information on assistance from the socialist bloc. However, the final report that was published on June 11 did not express the meaning of such help.<sup>335</sup>

In the second part of the 1950s, socialist assistance flew into North Korea in the form of factories, equipment, materials, and experts. By late 1957, factories and enterprises that were reconstructed with Soviet assistance began to operate including Pyongyang dying factory on November 5 and Sariwŏn tractor parts factory on November 6. Inside the DPRK's production sites, North Koreans continued to consult the Soviets on a variety of issues including budget and financial planning, technical and industrial planning, and procurement.<sup>336</sup> However, the North Korean leadership clearly understood that this flow of assistance would dwindle. More importantly, Kim Il-sung viewed that North Korea must not remain as a dependent country in terms of science and technology. In this light, North Korea's pursuit of techno-scientific self-reliance began to set in motion, which would soon be accelerated with the visible outcome of

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<sup>334</sup> For Kim Il-sung's speech, see *Pukhan ch'oego inmin hoeŭi charyojip (che 2chip: 2ki 1ch'a hoeŭi-3ki 7ch'a hoeŭi)* [The Supreme People's Assembly of North Korea (The Second Volume: the First Plenary Session of the Second Term to the Seventh Plenary Session of the Third Term)] (Seoul: Kukt'o T'ongirwŏn Chosa Yŏn'gusil, 1988), pp. 264-277.

<sup>335</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from May 31 to June 11, 1958 (June 11, 1958)," AVPRF, f. 0102, op. 14, p. 75, d. 6, ll. 170-172.

<sup>336</sup> V. Makarov, "Obzor ekonomicheskogo razvitiya KNDR za 1957 god I (February 1958)," AVPRF, no archival signature, NIKH, tp. MU0000000559, scp. 050600269, l. 9.

its industrial production. One of its manifestations was the import-substitution efforts of production technology through the cheapest option—a carbon copy of technical documents from the socialist bloc.

### ***Foreign Experts and North Korea's Import-Substitution of Science and Technology***

The lack of qualified cadres (*kanbu*) was one of the pressing issues that North Korean planners, researchers, and workers altogether desperately strived to address throughout the 1950s. Kim Il-sung repeatedly pointed out this issue over and over. After the December Plenum of 1956, he began to mention that the North Korean economy “could be managed without Soviet advisors.”<sup>337</sup> However, it was not a radical break from his previous view on the North Korea's relations with the socialist bloc. He recognized the urgent need to receive guidance from foreign experts. That is, Kim Il-sung wanted to benefit from the country's engagement with the socialist networks of techno-science to develop its industrial economy. After all, Kim Il-sung had good reasons to expect “rumors and misunderstandings” about outgoing Soviet advisors and foreign specialists, who were to return home in the late 1950s. In order to address these undesirable outcomes, he told a Soviet diplomat that his own plan was to explain this decision as a “change in the form of fraternal assistance.”<sup>338</sup>

From the mid-1940, the Soviet advisors' institution in North Korea served as one of the main conduits through which advanced techno-science was offered in the fields that were directly related with industrial production. However, as discussed in Chapters Two and Four,

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<sup>337</sup> “Meeting minutes with Kim Il-sung (January 16, 1957),” AVPRF, f. 0102, op. 17, p. 26, d. 5, ll. 62-63.

<sup>338</sup> “Meeting minutes with Kim Il-sung (January 30, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 6, l. 107.

Soviet advisors did actually refrain from actively engaging with their local counterparts, in order to avoid the impression of a neo-colonial relationship. After the Soviet government made a declaration on October 30, 1956, in relation to the ongoing Hungarian Uprising that questioned the “expediency of further stay of Soviet advisers” in people’s democracies, the North Korean leadership discussed on November 1 the possibilities of relieving Soviet advisors. Without much opposition, North Korean planners approved the Soviet declaration, revealing that it was North Korea that invited Soviet advisors and experts to meet the country’s needs and that their assistance would be necessary for a while.<sup>339</sup> By early January 1957, the North Korean authorities had an unofficial agreement with their counterpart in Moscow that Soviet advisors were no longer necessary. As a result, nine Soviet advisors working in North Korean Ministries of Trade, Railways, Health, and Fishery, Departments of Timber Industry, Forestry, Water Resources, the CDS, and the State Planning Committee (SPC) were due to be recalled in a couple of months. Concurrently, North Korea requested the remaining eight advisors working in Ministries of Metal Industry, Electrical Energy, Agriculture, and other higher educational institutions to continue their work.<sup>340</sup> Up to September 1958, the Soviet advisors’ institution in North Korea appeared to have functioned, when Kim Il-sung finally approved the return of all Soviet advisors and many Soviet experts, except for E.E. Lipaev, who was working as the official doctor for the North Korean leadership.<sup>341</sup>

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<sup>339</sup> “The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from October 30 to November 14, 1956 (November 2, 1956),” RGANI, f. 5, op. 28, d. 412, l. 364.

<sup>340</sup> “Meeting minutes with Nam Il, Minister of Foreign Affairs of the DPRK (January 4, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 6, ll. 48-50.

<sup>341</sup> “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from September



Experts from the socialist bloc continued to be the most promising source for North Korean workers to learn from to improve their own skills. These foreign experts' assistance was carried out in the form of additional works that included providing lectures at evening courses and consultation at production sites.<sup>342</sup> Soviet experts were in high demand throughout North Korean industry, as indicated by numerous North Korean requests to accelerate their dispatch to both production sites and relevant educational facilities.<sup>343</sup> Although the language barrier between foreign experts and North Korean workers proved to be an obstacle, especially with those who did not speak Russian,<sup>344</sup> they were resolved by cooperation between the foreign experts and North Korean counterparts.<sup>345</sup> In general, North Korea preferred Soviet

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7 to 11, 1958 (September 10, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 6, l. 199.

<sup>342</sup> “Meeting minutes with Kim Pyŏng-hŏn, the Chairman of the Sakchu-gun Party Committee in North Pyongan Province (January 17, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 6, l. 67.

<sup>343</sup> “Meeting minutes with comrade Cho Kŭm-song, the Director of Kim Ch’aek Pyongyang Polytechnic Institute (January 21, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 6, ll. 80-81 and Ro Sun-ch’ŏl, “Ssoryŏn ūi sŏnjin kwahak kisul ūl kyesok kwangbŏmhi yŏn’gu sŏpch’wi haja” in *Kodŭng mit kisul kyoyuk* [Higher and Technical Education] (August 1959), pp. 7-11.

<sup>344</sup> “Meeting minutes with comrade Yuzvyak, a second secretary of the Polish Embassy in the DPRK (January 23, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 6, ll. 86-87.

<sup>345</sup> “Meeting minutes with comrade Hyŏn Mu-kwang, the Chairman of the Party Committee of the WPK in South Hamgyong Province (September 24, 1957),” AVPRF, f. 0102, op. 17, p. 26, d. 5, ll. 120-122.

specialists to those who came from other bloc countries than the Soviet Union, although some Soviet Korean experts expressed strong discontent for their poor, material compensation.<sup>346</sup>

When asked about the quality of works completed through foreign experts by the supplier side in the second half of the 1950s, both the North Korean leadership and local workers consistently expressed gratitude, giving high marks without raising *any* concern. Despite some rude attitudes and suspicion of neo-colonialism, as seen among Eastern European specialists in the PRC in the 1950s,<sup>347</sup> foreign experts in North Korea seemed to have given good impressions to their North Korean counterparts. Most of the cases that were identified problematic by the Soviet representative among Soviet specialists were about their insufficient qualification in both specialized knowledge and working experience. For example, Kim Il-sung mentioned an example of one Soviet expert at Sŏngjin Steelworks. Although he came to North Korea to help his alumni, it turned out that his academic performance at a technical institute was much lower than his North Korean colleagues.<sup>348</sup> According to a Soviet report, there were two reported cases of Soviet experts returning home ahead of schedule in 1958: one was due to drunkenness and debauchery (at a Pyongyang textile factory) and another was due to the advisor's rude behavior (from the construction site of the Pyongyang thermal power plant). But because both the Soviet authorities in Moscow and the Soviet representative in Pyongyang

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<sup>346</sup> "Meeting minutes with Park Pyŏng-sŏp, the Vice Minister of Communication of the DPRK (January 11, 1957)," AVPRF, f. 0102, op. 17, p. 26, d. 5, ll. 28-29.

<sup>347</sup> Austin Jersild, *The Sino-Soviet Alliance: An International History* (Chapel Hill: The University of North Carolina Press, 2014).

<sup>348</sup> "Meeting minutes with comrade Yu Sŏng-hun, the President of Kim Il-sung University (February 7, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 6, ll. 100-102.

tried to reduce the number of advisors and experts coming to North Korea, the chances for conflict between foreign experts and local workers were low.<sup>349</sup>

Table 3-2: Soviet Experts in North Korea from 1959 to 1960

Date	Number	Breakdown
January 1959	116 (staying)	74 engineers, 5 technicians, 2 consultants, 20 specialists, 15 qualified workers
January 1960	67 (help provided)	48 engineers, 3 technicians, 5 masters, 4 doctors, 7 sports trainers

Source: “Politicheskii otchet za 1958 god,” RGANI f. 5, op. 49, d. 146, l. 117; “Politicheskii otchet za 1959 god,” RGANI f. 5, op. 49, d. 257, l. 139.

Furthermore, the wholesome expression created by foreign experts in North Korea presented a stark contrast against the North Korean understanding of Western specialists in U.S.-occupied South Korea. In the second half of the 1950s, the North Korean leadership viewed South Korea as a police state under total control of the Americans. The South Korean regime under President Syngman Rhee consistently had American advisors working with the Republic of Korea (ROK) military and the police. For example, the police headquarters in each South Korean province had American advisors, who worked for U.S. intelligence. From the viewpoint of North Koreans, even a slight discontent of the populace was to be immediately suppressed, which led North Korean officials to comment, “South Korean workers were considerably worse than the colonial people in Africa” in terms of political and economic

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<sup>349</sup> “Politicheskii otchet za 1958 god,” RGANI f. 5, op. 49, d. 146, ll. 117-118; “Politicheskii otchet za 1959 god,” RGANI f. 5, op. 49, d. 257, l. 139.

freedom.<sup>350</sup> North Koreans thought that the so-called “American assistance” was simply the opposite of genuine aid that was given by the socialist bloc. According to one North Korean evaluation in early 1957, 82.8% of American assistance to the ROK was to its military institution in the amount of 6,984 million dollars between 1945 and May 1956. The same evaluation reported that numerous advisors from the U.S. stayed in South Korea to “facilitate the making of national bourgeoisie” to make a basis of “permanent American rule.”<sup>351</sup>

As an important part of North Korea’s import-substitution of science and technology, sending international students for education to the socialist bloc also continued, though its size and scope largely decreased from 1957. The watershed moment in this change was again the Hungarian Uprising in the fall of 1956. Afraid of exposing its students abroad to “reactionary thoughts,” the North Korean leadership decided to repatriate them from Hungary first and other bloc countries in Eastern Europe shortly after. The total number of university students who returned from overseas was 460. However, for some of those returning students from Hungary, the North Korean state’s concerns became a reality as some were accused of “anti-party” activities. These included students expressing dissatisfaction of their return, treating domestic students in an arrogant manner, and being disruptive during their studies in domestic educational institutions (making noise, stomping their feet, and asking difficult questions

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<sup>350</sup> “Meeting minutes with Chang Sŏng-chin, the Deputy Chief of the Communication Department of the Central Committee of the WPK (January 14, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 6, l. 65.

<sup>351</sup> “Meeting minutes with Chang Sŏng-chin, the Deputy Chief of the South Korean Liaison Department of the Central Committee of the WPK (January 23, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 6, ll. 96-98.

during lectures).<sup>352</sup> By July 1957, it was estimated that 1,895 North Korean university students were studying in people's democracies (26% in Czechoslovakia, 23% in Poland, and 20% in East Germany). In addition, the number of students studying in technical institutes overseas were 580 in Czechoslovakia, 470 in East Germany, 400 in Poland, and 200 in the PRC. Many of these students were also war orphans, for example 210 of the 580 students in Czechoslovakia and all 470 in East Germany. The number of North Korean students in Eastern European countries would decrease, as the North Korean government planned to send university students and graduate students only to the Soviet Union starting from the academic year of 1957-1958.<sup>353</sup> As of January 1958, North Korean students were still studying at various institutes in the socialist bloc: production sites (642), technical institutes (652), universities (2,182), and graduate programs (131). Meanwhile, according to the same document, 895 university students, 138 graduate students, and 731 technical students graduated from institutions in the socialist bloc after liberation of 1945.<sup>354</sup> Given that the volume of educational expense for North Korean students in the Soviet Union for the first half of 1957 formed around 1% of the total

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<sup>352</sup> "Meeting minutes with comrade L. Karshai, an attaché of the Embassy of the People's Republic of Hungary in the DPRK (January 20, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 6, ll. 78-79; "Meeting minutes with comrade Song Kun-ch'an, the Course Rector of the Fundamentals of Marxism-Leninism in Kim Il-sung University (January 21, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 6, ll. 82-83.

<sup>353</sup> "Meeting minutes with comrade Kim Si-kuk, the Chief of the External Relation Department of the Ministry of Education of the DPRK (July 20, 1957)," AVPRF, f. 0102, op. 17, p. 26, d. 5, ll. 97-99.

<sup>354</sup> "Meeting minutes with Chang Ik-hwan, the Vice Minister of Education of the DPRK (January 22, 1958)," AVPRF, f. 0102, op. 14, p. 75, d. 8, ll. 104-106.

volume of the country's export in the same year,<sup>355</sup> the leadership's decision in early 1958 to send only a limited number of graduate students and researchers only to the Soviet Union was based on two reasons: the number of higher educational institutions that increased enough to teach more workers and the persistent need to save funds.<sup>356</sup>

While reducing the number of students studying abroad, the North Korean leadership “politically” trained students by making them mandatorily work in production sites and by providing tour opportunities to their home country in summer vacation. The country's

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<sup>355</sup> The educational expense was calculated at 5,173,086 rubles, the half of which was to be paid by the North Korean government. AVPRF, f. 0102, op. 17, p. 26, d. 4, l. 18. About the volume of North Korean exports in 1957 that were estimated at 398.1 million rubles, see V. Makarov, “Obzor ekonomicheskogo razvitiya KNDR za 1957 god I (February 1958),” AVPRF, no archival signature, NIKH, tp. MU0000000559, scp. 050600269, l. 106. I use these figures, primarily as they are shown in rubles. This gives at least two analytical benefits. First, a mechanical application of exchange rate of currency, which was decided by the involved parties in trade, can be avoided. Otherwise, North Korea's state budget that did not frankly talk about many important components such as defense expenditure must be inflated if converted in rubles. Second, the volume of North Korean exports in rubles are a useful indicator to estimate the country's purchasing power in relation to the Soviet Union. Involved parties in trade could not easily deceive each other and North Korea was no exception. For a critical remark in mechanical application of given exchange rates in studying North Korean history, see “Chõnhu Pukhan ũi sahojuũi ihaeng kwa ‘charyõkkaengsaeng’ kyõngje ũi hyõngsõng” [Jaryeokgaengsaeng Economy: North Korea's Socialist Transition and Its Formation in 1953-63] (in Korean) (PhD Diss., Kyung Hee University, 2018), pp. 190-191.

<sup>356</sup> “Meeting minutes with comrade Park Kil-ryong, the Chief of the First Department of the Ministry of Foreign Affairs of the DPRK (February 26, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 8, ll. 139-140.

educational plan by mid-1957 stated that 30% of university enrollment in North Korea would be fulfilled by the workers in production sites and that around 60% of those who finished middle schools would work for two to three years in enterprises or agricultural cooperatives before continuing their study. The plan also stated that the North Korean students who were already studying abroad would be invited back to North Korea during summer break to be familiarized with their developing mother country.<sup>357</sup>

North Korea's participation in the socialist networks of techno-science continued to expand. By the end of 1957, the North Korean state signed agreements of techno-scientific cooperation with the Soviet Union, the PRC, the GDR, Czechoslovakia, Poland, Hungary, Romania, Bulgaria, and Albania.<sup>358</sup> North Korea's main focus in these agreements was to access advanced techno-science in industrial production by exchanging technical documents (*kisul munhŏn*). For example, North Korea requested technical documents related to the production of chemicals from the GDR.<sup>359</sup> At this time, the Academies of Sciences of both North Korea and the Soviet Union reached an agreement of techno-scientific cooperation on October 11, 1957, which was to be reviewed annually.<sup>360</sup> No involved parties questioned or

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<sup>357</sup> "Meeting minutes with Chang Ik-hwan, the Vice Minister of Education of the DPRK (May 23, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 6, ll. 198-201.

<sup>358</sup> V. Makarov, "Obzor ekonomicheskogo razvitiya KNDR za 1957 god I (February 1958)," AVPRF, no archival signature, NIKH, tp. MU0000000559, scp. 050600269, l. 120.

<sup>359</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from November 26 to December 13, 1957 (December 2, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 5, ll. 63-64.

<sup>360</sup> *Chosŏn minjujuŭi inmin konghwaguk Kwahagwŏn hakpo* [The DPRK Academy of Sciences Bulletin] 4 (October - December 1957), pp. 3-5. For a bilateral review for the 1959 plan, see "The diary

criticized the unevenness in the number of technical documents that were exchanged in these bilateral agreements. In 1959, for example, the PRC offered technical documents in fifty-two topics, whereas North Korea sent theirs in only six topics.<sup>361</sup>

North Korea had high hopes in its request of technical documents and samples from the Soviet Union. As shown in the following table, the volume of North Korean requests of Soviet technical documents largely increased between 1958 and 1959. However, the Soviet Embassy evaluated in early 1960 that the use of such technical documents in North Korea was “still extremely limited,” as “various branches of the national economy” of the DPRK were in the stage of technical backwardness.<sup>362</sup> This frank evaluation made sense for some reasons. First, the North Korean users of such documents were supposed to invest more endeavors and resources in translating them into Korean. Second, the resulting Korean translation of those documents did not always lead to the smooth implementation of technology in domestic production sites. For most of the cases, Soviet specialists or North Korean experts with training experience in the Soviet Union were called upon to apply the contents of technical documents to North Korean factories and enterprises. Eventually, the lack of their availability resulted in the widespread non-use of technical documents.

Table 3-3: Exchanges of Technical Documents between North Korea and the Soviet Union

Technical Documents and Samples	

of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from July 3 to 30, 1959 (July 17, 1959),” AVPRF, f. 0102, op. 15, p. 81, d. 7, l. 173.

<sup>361</sup> “Politicheskii otchet za 1959 god,” RGANI f. 5, op. 49, d. 257, l. 159.

<sup>362</sup> “Politicheskii otchet za 1959 god,” RGANI f. 5, op. 49, d. 257, ll. 141-142



3rd (June 1957)	21	3
4th (December 1957)	45	1
5th (May 1958)	40	2
6th (October 1958)	81	2
7th (May 1959)	205	6
8th (February 1960)	255	6
9th (December 1960)	122	4
10th (May-June 1960)	n/a	n/a
11th (November-December 1961)	175	2

Source: V. Makarov, “Obzor ekonomicheskogo razvitiya KNDR za 1957 god I (February 1958),” AVPRF, no archival signature, NIKH, tp. MU0000000559, scp. 050600269, l. 120; “Politicheskii otchet za 1958 god,” RGANI f. 5, op. 49, d. 146, ll. 118-121; “Politicheskii otchet za 1959 god,” RGANI f. 5, op. 49, d. 257, ll. 140-142.

In their fervor to accomplish the import-substitution of advanced knowledge, North Korean media was eager to display the Soviet Union’s industrial success as a model. To North Korean readers’ dismay, however, newspaper articles and relevant materials regarding the Soviet “achievements,” which were supplied by the Soviet Information Bureau in North Korea, did not show the ways to achieve those displayed industrial “triumphs” or to overcome difficulties. On the contrary, those articles usually teemed with “difficult language and lots of scientific terminology” that caused the difficulties for North Korean readers.<sup>363</sup> Therefore, the North Korean Central Library by May 1960 was tasked to gather a variety of technical documents from the bloc countries. Until that moment, such documents were available only in individual factories or enterprises, preventing the workers at other sites from making use of

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<sup>363</sup> “Meeting minutes with comrade Kim To-myōng, the Chief editor of the newspaper *Minju Chosōn* (February 13, 1958),” AVPRF, f. 0102, op. 18, p. 28, d. 5, ll. 29-30.

them. Kim Il-sung also had already criticized this issue in the previous year.<sup>364</sup> According to the director of the Central Library, particularly in high demand were technical literatures, as indicated in the example of Kangsŏn Steelworks, in which the workers increased overall efficiency after applying the devices for both gripping and transporting hot steel billets in accordance with the experience written in Eastern German journals about metallurgy.<sup>365</sup>

Hence, North Korea's "first" homemade techno-scientific objects, albeit incomplete and often malfunctioning, encouraged the whole nation to remember such homegrown "achievements" as the milestone of the "era of a thousand-li horse" (*Ch'ŏllima sidae*). One of the few examples was the production of North Korean tractors by the fall of 1958, a symbol of mechanization of agriculture and thus "liberation" of the people from manual labor. It began with a North Korean request in December 1957 for technical documents regarding certain type of tractors (DT-14 and DT-24) from the Soviet Union. However, the authorities of both countries found the transfer of relevant technical documents ineffective as the manufacture of the requested tractors were to be discontinued.<sup>366</sup> Inspired by the completion of agricultural collectivization in September 1958, some North Korean workers in November were able to produce their own tractors, based on the sketches, drawings, and removed details of the Soviet VTZ-28 tractor and GAZ-51 truck. At the same time, North Korean planners requested the

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<sup>364</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from April 25 to May 19, 1959 (May 19, 1959)," AVPRF, f. 0102, op. 15, p. 81, d. 7, ll. 113-116.

<sup>365</sup> "Meeting minutes with comrade Park Ch'ang-sŏn, the Director of the Central Library (May 9, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 8, ll. 122-123.

<sup>366</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from November 26 to December 13, 1957 (December 12, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 5, ll. 46-50.

Czechoslovak government to provide 300 machine tools to Tökch'ön automobile parts factory that was reconstructed with the help of Czechoslovak specialists and 500-800 machine tools to Kiyang agricultural machine factory with a short-term credit for its expansion. However, this request was not accepted as the Czechoslovak government only wanted to offer such credit for the production of non-ferrous metals that were urgently necessary for Czechoslovakia.<sup>367</sup> In 1959, North Korea produced roughly 100 tractors and 120 trucks for a year, all of which had “considerable technical imperfection.” The Soviet Union not only offered technical documents for VTZ-28 and GAZ-51, but also delivered ball bearings, electric equipment, and fittings to the aforementioned North Korean automobile factories. By early 1960, the production speed in Tökch'ön factory increased in that 800 cars were assembled in June 1960, whereas only ninety-two trucks were produced in January.<sup>368</sup>

After Puzanov visited Kiyang agricultural machine factory in March 1960, where the leading workers had trained in Sverdlovsk Institute of the Soviet Union, he shared his opinion with Kim Il-sung on how to increase overall efficiency. From the perspective of the Soviet ambassador, issues to be addressed could be found in the production line. 2,000 hours was

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<sup>367</sup> “The diary of M.E. Kryukov, the Soviet Chargé d'affaires ad interim in the DPRK, for the period from November 10 to 21, 1958 (November 19, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 3, ll. 401-403. For a Soviet criticism of the Czechoslovak side's “incorrect” pursuit of the principle of mutual benefits in helping North Korea expand its car production capability, see “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from November 4 to December 8, 1958 (December 1, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 7, ll. 476-478.

<sup>368</sup> A. Surkov, “Izmeneniya v napravlenii razvitiya mashnostroitel'noi promyshlennosti KNDR (June 21, 1960),” AVPRF, f. 0102, op. 16, p. 87, d. 29, ll. 22-23.

required to assemble one truck, five times higher than that of the Soviet Union; and the delivery of necessary parts from twelve North Korean enterprises to Kiyang factory such as tires, plastic parts, and steel products always lagged behind the schedule. Furthermore, residential space and food rations for the workers were insufficient. Although the Soviet ambassador encouraged Kiyang workers that they could fulfill the planned quota of 3,000 tractors for the year of 1960, he did not fail to emphasize the importance of enhancing the quality of products and strengthening cost reduction.<sup>369</sup> Upon hearing Puzanov's remarks, Kim Il-sung answered with sheer optimism that the raised issues would be successfully addressed. The North Korean leader used the Kiyang tractors as an example, which were already in operation in the field for one and half months. Kim stated that now the goal was set at raising technical performance of the workers. In addition to 3,000 tractors that would be made in North Korea, he planned to bring one thousand tractors from the USSR and Romania and cutting-edge tractors from Japan to examine and study.<sup>370</sup> Given that the Soviet representative in June 1960 evaluated the overall quality of North Korean automobiles as "considerably inferior" than those of other countries, as indicated by the example of one North Korea car that had broken down after covering 100 kilometers,<sup>371</sup> the North Korean leader should have seriously taken Puzanov's advice. Before solving those technical issues, however, Kim continued to request technical

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<sup>369</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from February 16 to March 24, 1960 (March 11, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 6, ll. 99-103.

<sup>370</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from February 16 to March 24, 1960 (March 24, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 6, ll. 117-121.

<sup>371</sup> A. Surkov, "Izmeneniya v napravlenii razvitiya mashnostroitel'noi promyshlennosti KNDR (June 21, 1960)," AVPRF, f. 0102, op 16, p. 87, d. 29, l. 24.

documents for motorized agricultural vehicles such as DVSSh-16 and SSh-8G. From the Soviet perspective, handing over technical documents, drawings, and test results of such outdated machines incurred almost no cost. And at the North Korean leader's request, the Soviet Union promised to send all the requested documents, in addition to the drawing for new model T-16 that replaced DVSSh-16 in the Soviet Union.<sup>372</sup> Starting in 1961, North Korea completely stopped buying trucks, tractors, and other agricultural machines from the Soviet Union.<sup>373</sup>

By the early 1960, North Korean industry raced with the pace that was “not justified by scientific data and technical calculations” to Soviet observers. The Soviet representative in North Korea in early 1960 mentioned two factors that fueled North Korea's obsession with the speed of industrial development. First, the first two years in the FFYP allowed North Korean comrades to overestimate their own capability of further development. Second, North Korean planners were affected by Chinese influence of the Great Leap Forward, or the PRC's second FYP.<sup>374</sup> The North Korean leadership's conviction that the country was able to increase its industrial production became only robust.

One of the convenient ways for the North Korean leadership to demand its workers to follow the Party's slogan of technological revolution was to attribute undesirable phenomena such as low productivity to “old thoughts” (*nalgŭn sasang*). Through this strategy, North Korean planners promised a better future to the workers only when “old thoughts” were completely removed. Accordingly, a special decision was made in March 1960 that all leading

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<sup>372</sup> “The diary of comrade A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from September 12 to 30, 1960 (September 30, 1960),” AVPRF, f. 0102, op. 16, p. 85, d. 7, ll. 126-129.

<sup>373</sup> N. Shiryaev, “Spravka (June 11, 1964),” RGANI, f. 5, op. 49, d. 904, l. 43.

<sup>374</sup> “Politicheskii otchet za 1959 god,” RGANI f. 5, op. 49, d. 257, ll. 15-16.

cadres in the Central Committee must work for one month in enterprises as ordinary workers. During this month such cadres must live and eat together with the workers.<sup>375</sup> In the August Plenum, the North Korean authorities decided to initiate the deployment of technological progress campaigns. Technological innovation (*kisul hyŏksin*) was characterized as “technological revolution” since the result of these campaigns must liberate the people from technical backwardness and manual labor.<sup>376</sup> However, Puzanov recorded in his official diary in the following month that the chief workers of numerous North Korean factories and enterprises possessed “insufficient level of economic and technological knowledge” that was detrimental to enhanced productivity.<sup>377</sup> After touring some of the country’s production sites in late 1960, Puzanov wrote that some of the factories had machines and equipment in a disorganized manner, which lowered the quality of products, cost reduction, and the specialization of workers, as in Kaesŏng machine building factory.<sup>378</sup> Furthermore, Kiyang factory suffered constant delays in the delivery of machine tools, equipment, materials, and parts.<sup>379</sup> Tŏkch’ŏn automobile parts factory also met with similar logistical issues as Kiyang

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<sup>375</sup> “Meeting minutes with comrade Park Yong-guk, the Chief of the International Department of the Central Committee of the WPK (March 21, 1960),” AVPRF, f. 0102, op. 16, p. 85, d. 8, ll. 75-76.

<sup>376</sup> “Meeting minutes with comrade Park Yong-guk, the Chief of the International Department of the Central Committee of the WPK (August 13, 1960),” AVPRF, f. 0102, op. 16, p. 85, d. 8, ll. 178-182.

<sup>377</sup> “The diary of comrade A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from September 12 to 30, 1960 (September 28, 1960),” AVPRF, f. 0102, op. 16, p. 85, d. 7, ll. 119-120.

<sup>378</sup> “The diary of comrade A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from October 8 to 14, 1960 (October 12-14, 1960),” AVPRF, f. 0102, op. 16, p. 85, d. 7, ll. 144-150.

<sup>379</sup> “The diary of comrade A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from

factory.<sup>380</sup>

By the early 1960s, Kim Il-sung continued to demand the country's workers accelerate industrial production, while increasingly avoiding Soviet advice. One of the consequences was a new meaning that the term technological innovation acquired to imply both maintenance and the increased utilization of preexisting machines and equipment. Soviet advice for North Korean workers to slow down the pace of industrial production and to focus on the quality of products was only seldom taken by Kim Il-sung. In 1959, V.I. Makarov, the head of the Soviet economic representative in North Korea, offered his insight to Kim Il-sung on the North Korean economy. In a warm and friendly manner, Makarov advised that having some time to master machines and equipment and to educate cadres would increase the quality of products and that enterprise-run laboratories equipped with cutting-edge facilities and devices should be fully utilized. Makarov expressed to the North Korean leader the importance of having patience in managing the industrial economy. Agreeing with him, Kim Il-sung promised to take necessary measures.<sup>381</sup> However, Kim Il-sung's promises were more a brash manifestation of North Korea's capability to resolve such issues than his prudence to deal with the issues of balance in a planned economy. North Korea already took on a path to build communism at the speed of a thousand-li horse. The Soviet-led socialist bloc could not understand what it meant for North Korea to launch "its own Sputnik," which is discussed in the following section.

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October 19 to November 7, 1960 (October 21, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 7, l. 152.

<sup>380</sup> "The diary of comrade A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from October 19 to November 7, 1960 (October 28, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 7, ll.156-160.

<sup>381</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from April 25 to May 19, 1959 (May 19, 1959)," AVPRF, f. 0102, op. 15, p. 81, d. 7, ll. 113-116.

***“Our Korean Sputnik”: North Korea’s Industrial Surge and Conviction in the Soviet Eyes***

In the immediate aftermath of the Korean War, North Korea experienced a huge growth in terms of industrial production in the post-war 1950s. The annual gross output increased by 42% on average in five years from 1954 to 1958, culminating at a tremendous figure of 53% in 1959.<sup>382</sup> Reflecting this pace of the country’s industrial development, Kim Il-sung once mentioned that the operation of a blast furnace in Hwanghae Steelwork equaled to “our Korean Sputnik.”<sup>383</sup> Previous studies have pointed out that this high growth rate was essential for North Korean leadership to have self-confidence in its policy of development. However, the same works have limitations in interpreting this period as many presume that North Korea have ceased its engagement with the Soviet-led socialist bloc in the late 1950s.<sup>384</sup> This misrepresentation is problematic because North Koreans during this period understood the importation of machines, equipment, and services, and long-term loans brought to North Korea

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<sup>382</sup> I. Tugarinov, “Ekonomika KNDR /kratkaya spravka/ (June 11, 1960),” AVPRF, f. 0102, op 16, p. 87, d. 29, l. 6. However, the annual gross output increased by only 16% in 1960. A. Puzanov, “Ekonomicheskoe i politicheskoe polozhenie Koreiskoi Narodno-Demokraticeskoi Respubliki (August 4, 1961),” RGANI, f. 5, op. 49, d. 452, l. 98.

<sup>383</sup> “Meeting minutes with comrade Kim Ch’ang-man, a Vice Chairman of the Central Committee of the WPK (April 24, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 8, ll. 209-212.

<sup>384</sup> Kang Ho-che, *Pukhan kwahakkisul hyöngsöngsa I* (Seoul: Sönin, 2007); Cho Su-ryong, “Jaryeokgaengsaeng Economy”; Lee Se-young, “The Formation of ‘Socialist’ Workers and Changes in Production Sites in North Korea (1945-1960).”



at the expense of trade turnover as a form of assistance from the socialist bloc.<sup>385</sup> In order to unpack how North Korean planners strived to mobilize science and technology into industrial economy, this section looks into how North Koreans in the late 1950s came to have firm convictions that sustained growth would be repeated without socialist assistance.

Table 3-4: Volumes of Soviet Delivery to North Korea in 1949-1965

Unit: million rubles in export prices free on board

Year	Total Volume of Delivery	Breakdown	
		Export	Grant and Gift
1949	3.3	3.3	-
1950	0.1	0.1	-
1951	0.1	0.1	-
1952	0.8	0.8	-
1953	1.5	1.3	1.2
1954	15.3	2.4	12.9
1955	20.4	1.6	18.8
1956	23.0	4.0	19.0
1957	18.2	6.0	12.2
1958	14.2	2.5	11.7
1959	10.1	2.1	8.0
1960	1.0	0.8	0.2
1961	1.2	1.1	0.1
1962	8.8	8.8	-
1963	12.4	12.4	-
1964	16.9	16.9	-
1965	11.8	11.8	-

Source: P. Grigor'ev, "Osnovnye pokazateli (February 3, 1966)," RGANI, f. 5, op. 49, d. 891, l. 120.

<sup>385</sup> AVPRF, f. 0102, op. 18, p. 93, d. 4, ll. 1-279, partially translated in Park Chong-hyo, *Rōsia Yōnbang Oemusōng Taehanjōngch'aek Charyo* Vol. 2, pp. 216-217.

After the Third Party Congress in 1956, North Korean leaders prioritized constructing an economic base for socialism, with a specific focus on the development of heavy industry and machine-building. The First Party Conference (*Tang taep'yoja taehoe*) of the Workers' Party of Korea (WPK) in March 1958 officially approved the country's FFYP that confirmed the expansion of ferrous metal products as well as a variety of machines and equipment of small and medium sizes.<sup>386</sup> Both the Soviet Union (in 1955 and 1957 respectively) and the PRC (in 1957) reviewed North Korea's FFYP, and advised the need to slow down the pace of industrial development in order to improve the development of North Korea's agriculture.<sup>387</sup> North Korean leadership oddly read this message as an urgent need to be met in developing the machine-building industry because it would contribute to the rapid mechanization of agriculture. The acceleration of building socialism, appealed in a classified "Red Letter" sent to the country's workers in the September Plenum of 1958, was simply understood as immense speed in industrial production and the mechanization of agriculture. By late 1958, Kim Il-sung obsessively argued for the country's need to produce more metal and steel.<sup>388</sup> It was no

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<sup>386</sup> "The diary of comrade A.M. Puzanov, the Soviet Ambassador to the DPRK, for March 17, 1958," AVPRF, f. 0102, op. 14, p. 75, d. 6, ll. 237-243.

<sup>387</sup> For the Soviet Union's suggestions to the first FYP of North Korea, see A. Surkov, "Izmeneniya v napravlenii razvitiya mashnostroitel'noi promyshlennosti KNDR (June 21, 1960)," AVPRF, f. 0102, op. 16, p. 87, d. 29, ll. 20-21. For the PRC's suggestions, see "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from October 1 to 25, 1957 (October 23, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 5, l. 679.

<sup>388</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from September 13 to 28, 1958 (September 28, 1958)," AVPRF, f. 0102, op. 14, p. 75, d. 6, ll. 363-373.

coincidence that to Kim Il-sung's view in the late 1950s, the name of Iosif Stalin, a Soviet leader who transformed backward and agrarian Russia into an industrial superpower in the 1930s, was "linked inextricably with the North Korean people's love towards the Soviet Union."<sup>389</sup>

North Korean planners placed significant meaning in the country's steelworks. Kangsŏn and Hwanghae Steelworks are cases in point, as these plants were usually discussed as industrial "achievements" of North Korea, which were reconstructed solely by North Korean workers with domestic machines and equipment.<sup>390</sup> Meanwhile, most of the leading North Korean workers in Kangsŏn Steelworks spent time in Soviet plants such as Azovstal, Dneprostal, and Zaporizhstal and actively used relevant experience and Soviet technology to new rolling mills in North Korea,<sup>391</sup> which was never discussed previously. Kim Il-sung suggested to award a Soviet expert named Chumak with a medal for his assistance in reconstructing a coke battery at Hwanghae Steelworks. However, the blast furnace was planned and constructed by "Korean friends using their own power and materials," as recognized Soviet engineers. The masonry of a coke battery only took sixty-eight days.<sup>392</sup> Although the North

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<sup>389</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from April 5 to 12, 1957 (April 9, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 5, ll. 25-26.

<sup>390</sup> Kang Ho-che, *Pukhan kwahakkisul hyŏngsŏngsa I*; Lee Se-young, "The Formation of 'Socialist' Workers and Changes in Production Sites in North Korea (1945-1960)."

<sup>391</sup> "The diary of comrade A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from April 9 to 28, 1958 (April 11, 1958)," AVPRF, f. 0102, op. 14, p. 75, d. 6, ll. 104-106.

<sup>392</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from April 29 to May 12, 1958 (April 30, 1958)," AVPRF, f. 0102, op. 14, p. 75, d. 6, ll. 126-128.

Korean leadership propagandized the speedy reconstruction of Hwanghae Steelworks, the Soviet Union still supplied necessary equipment. For example, by the end of July 1958, a North Korean Vice Premier requested the acceleration of the shipment of a certain type of crane (*mul'do-zavalochnyi kran*) that was produced in Ural machine factory for an open-hearth workshop at Hwanghae Steelworks. According to a Soviet document, the North Korean official repeatedly emphasized its desperate need to receive the crane ahead of schedule. The pressing issue stemmed from the Japan-made cranes in use that were outdated and frequently suffered from malfunction that caused delay in the steelmaking workshops.<sup>393</sup>

Throughout the 1950s, North Korean industrial planners actively sought Soviet guidance in accomplishing massive tasks of industrial development based on advanced science and technology. In September 1958, one of the most skillful engineers in North Korea's ferrous metal industry expressed to a Soviet diplomat his wishes to receive assistance in installing industrial enterprises ahead of schedule through a list of requests. These included the supply of a variety of automation equipment and instrumentation for the second blast furnace at Kim Ch'aek Steelworks in Ch'ŏngjin; the timely delivery of mechanical and electrical equipment for rolling mills and I-beams to Sŏngjin Steelworks; and the dispatch of a group of six Soviet specialists to assemble an oxygen plant for Kangsŏn Steelworks. He continued that since the Soviet Union did not deliver resin separators on time, North Korean workers used temporarily resin separators from Sŏngjin Steelworks. Also, the untimely dispatch of one Soviet specialist from Chelyabinsk metal factory caused serious delays in learning how to deal with special steel

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<sup>393</sup> "Meeting minutes with comrade Chŏng Il-ryong, a Vice Premier of the Cabinet of the DPRK (July 31, 1958)," AVPRF, f. 0102, op. 14, p. 75, d. 8, l. 292.

at Hwanghae Steelworks.<sup>394</sup> Once these requests were accepted, there was a strong tendency to channel funds, materials, and human labor into other construction sites considered the precedence for North Korea. For example, around 40% of construction machines and automated transports brought from the GDR for the reconstruction of the city of Hamhŭng was sent to other places in North Korea.<sup>395</sup> In order to improve the operation of the new Madong cement factory, its leadership made a request of transfer of a Soviet engineer from Hŭngnam mineral fertilizer plant and asked to send additional sixteen Soviet specialists.<sup>396</sup> These North Korean practices of asking for Soviet help in industrial production, which were increasingly discouraged by Kim Il-sung, continued to the early 1960s, when factories and enterprises were completely equipped with machines and equipment that were brought from the socialist bloc.<sup>397</sup>

From the discussions between North Korean planners and Soviet diplomats in the late 1950s, low utilization of machine and equipment and low mechanization were frequently mentioned as the two biggest problems in almost every North Korean factory, plant, and enterprise. Fully aware of these issues, the North Korean authorities urged the workers in

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<sup>394</sup> “Meeting minutes with comrade Ch’oe Man-hyŏn, the Chief Engineer of the Ferrous Metallurgy Head Committee of the Ministry of Metal Industry of the DPRK (September 16, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 3, ll. 336-340.

<sup>395</sup> “Meeting minutes with E. Berens, a third secretary of the Embassy of the GDR in the DPRK (January 15, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 8, ll. 23-24.

<sup>396</sup> “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from April 29 to May 12, 1958 (May 8-9, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 6, ll. 132-136.

<sup>397</sup> “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from March 25 to April 11, 1960 (April 6, 1960),” AVPRF, f. 0102, op. 16, p. 85, d. 6, ll. 143-145.

production sites to follow the Party's guidance as a breakthrough. One of these instructions was to find untapped local resources that could be quickly used in the production process and would free the central authorities in Pyongyang to distribute valuable national resources to more needy and important production sites. Also, North Korean leaders knew that the improvement of utilization of machines and equipment would take time. By mid-1958, the North Korean leadership recognized that utilization in the country's light industry was estimated at around 45%. In their efforts to address pressing issues, North Korean workers who studied the decision of the May Plenum of the Soviet Communist Party suggested to build the devices to process profitable gases and other by-products that were created from burning coke.<sup>398</sup> Recognizing that using Chinese backyard furnaces was not suitable in North Korea due to its high need of labor power, the North Korean leadership tried to introduce ferro-coke in the furnaces at Hwanghae and Kim Ch'aek Steelworks to expand the production of high quality cast iron.<sup>399</sup> By early 1960, the workers in Haeju cement factory produced a substitute to chromomagnesite that was essential in producing firebrick but lacking in North Korea.<sup>400</sup>

The operation of furnaces and coke batteries—North Korea's "Sputnik"—along with

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<sup>398</sup> "Meeting minutes with comrade Ko Hi-man, the Chief of the Industry Department of the Central Committee of the WPK, and comrade Mun Man-ok, Minister of Light Industry of the DPRK (May 31, 1958)," AVPRF, f. 0102, op. 14, p. 75, d. 8, ll. 195-198.

<sup>399</sup> "Meeting minutes with comrade Ch'oe Man-hyŏn, the Chief Engineer of the Ferrous Metallurgy Head Committee of the Ministry of Metal Industry of the DPRK (September 16, 1958)," AVPRF, f. 0102, op. 14, p. 75, d. 3, ll. 336-340.

<sup>400</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from March 25 to April 11, 1960 (March 26, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 6, ll. 131-135.

other industrial enterprises raised production-related problems that would constantly plague the country's industrial economy. Puzanov had another tour to production sites in both Hamgyong and Kangwon Provinces in 1959, which enabled the Soviets to observe such issues. One of the most serious flaws in North Korea's production sites was a constant delay in the delivery of necessary materials. At Wönsan locomotive-wagon-repair plant, the lack of metals caused a setback in fulfilling their quota (only 180 wagons were released in five months, compared to the planned 400 wagons in the same period). At Hüngnam mineral fertilizer plant, more than half of the equipment did not operate due to the lack of electricity. At Sinp'o fish cannery, labels to be attached to products were in shortage, which delayed the shipment to the Soviet Union. Kim Ch'aek Steelworks, where the second blast furnace and coke battery were reconstructed in 1958, could not fulfil the planned quota due to the lack of ores and cokes (only 135,000 tons of cast iron were produced in five months, compared to the planned 165,000 tons).<sup>401</sup> By the end of 1959 at Kangsön Steelworks that had the sole automated workshop (albeit partially) to roll cast ingot into intermediary goods including bloom and slab, suffered a few production-related issues. According to Yun Shin-hwa, the Director of the plant who previously studied at Sverdlovsk technical institute in the Soviet Union, North Korean workers could not timely introduce advanced technology into production to increase productivity such as oxygen blast. Whereas the planned production was set in early 1959 at 170,000 tons of steel, the factory only produced 75,000 tons in nine months. In order to encourage the workers, Kim Il-sung visited the plant in mid-September to give an instruction to revise the production plan and the production of metals increased by 30-40% after the North Korean leader's on-site

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<sup>401</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from May 21 to June 19, 1959 (June 2-7, 1959)," AVPRF, f. 0102, op. 15, p. 81, d. 7, ll. 128-134.

guidance, a boost in production was only of a temporary nature.<sup>402</sup> In order to maintain the speed of industrial production that the North Korean leadership hoped for, Kim Il-sung needed to repeatedly visit various production sites in the country.<sup>403</sup>

Against all odds, North Korea strived to maintain the overall pace of industrial development, which impressed the Cuban delegation led by Che Guevara in December 1960. Commending North Korea's "talented nation with the wise leadership," Che Guevara admitted that North Korea was "moving forward with such speed" that Cuba could not keep up.<sup>404</sup> The Cubans wanted to purchase from North Korea chemical fertilizers, electrical equipment, steel, instruments, agricultural machines, and machine tools, at the expense of sugar, coffee, and tobacco. With the arrival of the Cuban delegation, North Korean planners increasingly

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<sup>402</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from October 6 to November 4, 1959 (October 20, 1959)," AVPRF, f. 0102, op. 15, p. 81, d. 7, ll. 236-238.

<sup>403</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from October 6 to November 4, 1959 (October 20, 1959)," AVPRF, f. 0102, op. 15, p. 81, d. 7, ll. 236-238. Later in 1961, Vasili P. Moskovskii, the future Soviet ambassador to the DPRK, visited North Korea for twenty days as a member of the Association of Soviet-North Korean Friendship. He reported to Moscow that there was "not a single factory in North Korea that Kim Il-sung had visited less than three times." Moskovskii "convinced himself" (*ubedilsya sam*) of this fact Kim Il-sung knew the state of affairs of the factories when Moskovskii shared his impression of those production sites with the North Korean leader. Interestingly, Moskovskii wrote that Kim Il-sung appeared to have borrowed such "methods" of his leadership from Nikita Khrushchev. V. Moskovskii, "The Central Committee of the CPSU (November 27, 1961)," RGANI, f. 5, op. 49, d. 450, l. 114.

<sup>404</sup> "Meeting minutes with Hong Tong-ch'ol, the Chief of the First Department of the Ministry of Foreign Affairs of the DPRK (December 10, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 8, ll. 224-227.



displayed the country's economic progress as if it was made by exclusively North Koreans. Indeed, diplomats from the bloc countries complained that whereas North Korean officials privately talked about the importance and need to receive assistance, the same topic was not mentioned in the country's media. Accordingly, these discontented diplomats characterized North Korea's attitude towards the issue of assistance as "twofold and inconsistent."<sup>405</sup> Hence, the North Korean leadership did not have any incentives to tell to the Cuban guests that it was assistance from the socialist bloc, especially from the Soviet Union, which laid the groundwork of North Korea's industrial infrastructure.<sup>406</sup>

### *North Korea's "Consumer" Approach to the Socialist Networks of Techno-Science*

Previous studies risk reproducing a nation-centric view that North Korea's development of science and technology was carried out starting from the late 1950s without meaningful engagement with the Soviet-led socialist bloc.<sup>407</sup> This is partially because North Korean media

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<sup>405</sup> "The diary of comrade A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from November 10 to December 28, 1960 (December 14, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 7, ll. 185-186. The Soviet representative characterized this North Korean "silence" (*zamalchivanie*) as incorrect about "economic and techno-scientific help of the USSR and other socialist countries." RGANI, f. 5, op. 49, d. 405, ll. 68-69.

<sup>406</sup> Evidence shows that at least 43 enterprises and industrial objects were put into operation, all of which were reconstructed or expanded with Soviet technical assistance, which included Sŏngjin Steelworks, Kim Ch'aek Steelworks, Namp'o non-ferrous metal plant, and Hwanghae Steelworks. "Spravka (November 5, 1964)," RGANI, f. 5, op. 49, d. 907, ll. 122-124.

<sup>407</sup> Kang Ho-che, *Pukhan kwahakkisul hyŏngsŏngsa I*; Byun Hak-moon, "Pukhan ūi kisul

began to keep silent from 1961 about the country's interactions with the socialist bloc. Concurrently, the North Korean leadership actively popularized the slogan of "self-reliance based on one's own strength" (*charyŏk kaengsaeng*; Ch. *zili gengsheng*) that emphasized the importance of a self-reliant economy. Subsequently, it is extremely hard for scholars to find accounts that show North Korea's interactions with the socialist bloc from solely North Korean sources, which has been the issue with previous historical research. Based on a limited range of newly declassified Soviet materials, this section explores how the current structure of North Korea's techno-scientific revolutions was shaped.

It is useful to remember that in the late 1950s diplomats from the bloc countries in Eastern Europe expressed curiosity on North Korea's economic development. These foreign diplomats were particularly interested in the actual meaning of "self-reliance" that North Korean leaders repeatedly emphasized in relation to the main goal of the country's industrial development. The widespread suspicion among those diplomats was that North Korea would build a closed economy without cooperation with other socialist countries. Interestingly, Soviet representatives in North Korea tried to resolve this "misunderstanding" by explaining what the North Korean leadership implied. From the Soviet perspective, North Korea's "self-reliant" economy simply meant that the country's further industrial development should rely upon "one's own resources and possibility," not dwindling free assistance from the socialist bloc.<sup>408</sup>

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hyŏngmyŏngnon: 1960-70nyŏndae sasang hyŏngmyŏng kwa kisul hyŏngmyŏng ūi pyŏnghaeng" [The Technical Revolution Theory of North Korea: Simultaneous Pursuit of the Ideological and Technical Revolutions in the 1960s and 1970s] (in Korean) (PhD Diss., Seoul National University, 2015).

<sup>408</sup> "Meeting minutes with V. Prusha, a second secretary of the Czechoslovak Embassy in the DPRK (January 11, 1958)," AVPRF, f. 0102, op. 14, p. 75, d. 8, ll. 27-28. For Kim Il-sung's report, see *Rodong*

However, North Korea's industrial economy by the late 1950s was not competent enough to build a "self-reliant" economy. Time and again, the North Korean government asked the Soviet Union to postpone the repayment of previously offered credits. In 1959, upon the request of the North Korean government, the Soviet Union decided to postpone the payment of 123 million rubles (rendered through the agreement as of March 31, 1955) to the period between 1965 and 1967. Kim Il, a high-profile official close to Kim Il-sung, characterized it as a truly "fraternal help" since North Korea would have two more years of 1966 and 1967 in addition to what was originally asked.<sup>409</sup> Simultaneously, North Korea lacked the capability to manage its international trade. In November 1959, North Korea's trade deficit with the Soviet Union turned out to be more than 50 million rubles, contrary to what the North Korean authorities initially expected (36 million rubles). To quickly make up for this gap, North Korea suggested to send more than 100 wagons of apple first, goods that could be sent immediately, per day everyday by train and by the sea.<sup>410</sup> North Korean planners attributed this gap between incomplete calculations and trade aspirations to "insufficient experience" of its own Foreign Trade Ministry.<sup>411</sup> North Korea's economic decision-making process was extremely slow. Discussing the central heating (*teplifikatsiya*) issue for Pyongyang with Puzanov, Chŏng Il-

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*Shinmun* December 06, 1957.

<sup>409</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from July 3 to 30, 1959 (July 24, 1959)," AVPRF, f. 0102, op. 15, p. 81, d. 7, ll. 176-179.

<sup>410</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from October 6 to November 4, 1959 (October 29, 1959)," AVPRF, f. 0102, op. 15, p. 81, d. 7, ll. 247-249.

<sup>411</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from October 6 to November 4, 1959 (November 3, 1959)," AVPRF, f. 0102, op. 15, p. 81, d. 7, ll. 254-256.

ryong, the Chairman of People's Committee of the capital city, had a great expectation on the future operation of the Pyongyang thermal power plant that was being built with Soviet technology and experts. To Chŏng's inquiry in sending more Soviet experts, the Soviet ambassador answered that "all the relevant issues depended upon North Korea's allocation of necessary products" in its international trade to acquire foreign currency. Starting from the initial agreement of May 1958, as Puzanov continued, the Soviet government prepared to provide all necessary equipment, some of which were provisioned from Western European firms. However, due to the delay caused by North Korea, all relevant contracts were withheld including the agreements with Western European firms and the works of Soviet construction organizations.<sup>412</sup>

Starting from late 1959, North Korean MFA tightened information control in relation to diplomats from bloc countries in Eastern Europe. Unlike the previous minister Nam Il, newly appointed Park Sŏng-ch'ŏl was said to have shown "neither attention nor tact" to these ambassadors.<sup>413</sup> The Soviet representative in Pyongyang began to have difficulties in collecting information. For example, upon the request of information by the Soviet Embassy for the summary of North Korea's 1959 trade with socialist countries and the planned trade for 1960, North Korean Foreign Trade Minister refused to provide such information, only referring to the "decision of the [North Korean] cabinet."<sup>414</sup> Some foreign diplomats tried to understand

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<sup>412</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from December 8 to 18, 1959 (December 14, 1959)," AVPRF, f. 0102, op. 15, p. 81, d. 7, ll. 312; 316-317.

<sup>413</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from February 1 to 15, 1960 (February 6, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 6, ll. 38-40.

<sup>414</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from February 16

this action, taking the country's poor economic situation and problematic cult of personality into account.<sup>415</sup> However, the country's insistence to its own slogan of "self-reliance based on one's own strength" only increased to the extent which denied the opinions of foreign experts in North Korean production sites and dismissed the trade needs of Eastern European countries.<sup>416</sup> On the other hand, North Korea's relationship with the PRC became closer through the Sino-North Korean agreement signed in June 1959. This agreement offered North Korea free 300 million rubles in five years as well as 110 MIG-19 fighters and five military vessels (70-300 tons).<sup>417</sup> North Korea's request to Moscow for the same package of free 300 million rubles with armaments was refused.<sup>418</sup> However, North Korea up until late 1962 still maintained its official position to support the cohesion of the socialist bloc under the leadership

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to March 24, 1960 (February 16, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 6, ll. 73-74.

<sup>415</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from January 8 to 29, 1960 (January 27, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 6, ll. 20-22.

<sup>416</sup> For a dismissal of Hungarian expertise, see "Meeting minutes with comrade Kish, the Leader of Hungarian Specialists' Group working for the construction of Pon'gung Dyeing Factory (March 14, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 8, ll. 53-57. For North Korea's foot-dragging in its talk with Czechoslovakia for North Korean copper, see "The diary of N.E. Torbenkov, the Soviet Chargé d'affaires ad interim in the DPRK, for the period from June 15 to 17, 1960 (June 15, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 8, ll. 141-142.

<sup>417</sup> "Politicheskii otchet za 1959 god," RGANI f. 5, op. 49, d. 257, l. 154.

<sup>418</sup> "Meeting minutes with comrade Nam Il, Minister of Foreign Affairs of the DPRK (August 22, 1959)," RGANI, f. 5, op. 49, d. 256, l. 137; "Meeting minutes with comrade Nam Il, Minister of Foreign Affairs of the DPRK (September 16, 1959)," RGANI, f. 5, op. 49, d. 256, l. 140.

of the Soviet Union, while distancing from affirmative engagement in Sino-Soviet conflicts.<sup>419</sup>

In the early 1960s, North Korean planners took measures to accelerate technological innovation as the country's seemingly lackluster results in science and technology pressed the leadership to present visible outcome in the shortest period of time.<sup>420</sup> The State Committee of Science and Technology (*Kukka kwahak kisul wiwŏnhoe*) was established in July 1962 to manage the matters of science and technology in the country. By late 1962, the Taean

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<sup>419</sup> "Meeting minutes with comrade Park Yong-guk, the Chief of the International Department of the Central Committee of the WPK (August 13, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 8, ll. 182-185. For Kim Il-sung's support of the Soviet leadership in the Cuban Missile Crisis, see AVPRF, f. 0102, op. 18, p. 94, d. 11, ll. 1-55, partially translated in Park Chong-hyo, *Rōsia Yōnbang Oemusōng Taehanjōngch'aek Charyo* Vol. 2, p. 232. For Kim Il-sung's request of free 100 million rubles to create 14 more rocket units from the Soviet Union in November 14, 1962, see AVPRF, f. 0102, op. 18, p. 93, d. 5, ll. 1-189, partially translated in Park Chong-hyo, *Rōsia Yōnbang Oemusōng Taehanjōngch'aek Charyo* Vol. 2, p. 243. For the Soviet refusal of North Korea's purchase of military equipment and weaponry on credit in December 1962, see Balázs Szalontai, *Kim Il Sung in the Khrushchev Era: Soviet-DPRK Relations and the Roots of North Korean Despotism, 1953-1964* (Stanford: Stanford University Press), pp. 192-193.

<sup>420</sup> Some of the achievements included synthetic fiber and resins including vinalon, gasification using anthracite coals, new "North Korean" machines and equipment such as tractors, automobiles, large-sized presses, electronic calculators, and two blast furnaces in Hwanghae Steelworks. Ri Sang-chun and Chŏn pyōng-sik eds., *Chosŏn hyōngmyōng suhaeng esŏ Kim Il-sōng tongji e ūihan maksŭ-reninjuūi ūi ch'angjojōk chōgyong* (Pyongyang: Kwahagwŏn Ch'ulp'ansa, 1962), p. 437. Meanwhile, North Korea's rediscovery in the early 1960s of its own "outstanding" (*usuhan*) techno-scientific tradition from the past lies beyond the scope of this chapter.

Management System (TMS, *Tae'an ūi saōp ch'egye*), a system of industrial management created after Kim Il-sung's visit in December 1961 to Taean electrical factory, was introduced to all the production sites in North Korea.<sup>421</sup> In the following year, the implementation of the technical development plan (*kisul paljōn kyehoek*) became mandatory by a state law for every factory and industrial enterprise in North Korea. However, despite cases where these newly introduced institutions contributed to technological innovation,<sup>422</sup> the reality depicted in Soviet documents looked quite different. According to one Romanian expert working at Kangsōn Steelworks, the issue originated from the factory party committee that comprised different people "who did not understand anything about technology." Subsequently, the factory party committee occasionally made decisions without taking into account technological standards and economic feasibility. His observation that the factory party committee more often than not dismissed North Korean engineers' opinion hints at the fact that North Korea's industrial production under the TMS was not efficient.<sup>423</sup> However, the North Korean leadership reinforced its efforts to propagandize the TMS, with a focus on giving political education to the workers, as stated in May and September Plenums of 1963. Meanwhile, North Korea mainly channeled its limited resources to defense from the early 1960s, which resulted in the creation of the National Defense Academy (*Kukpang kwahagwōn*) in June 1964. As historian Byun Hak-moon summarizes, North Korea's scientific community throughout the 1960s could

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<sup>421</sup> Hyungsub Choi, "Rationalizing the Guerilla State: North Korean Factory Management Reform, 1953–61," *History and Technology* 20, no. 1 (2004), pp. 53-74.

<sup>422</sup> Byun Hak-moon, "The Technical Revolution Theory of North Korea," pp. 53-57.

<sup>423</sup> B. Pimenov, "O khode vypolneniya resheniy dekabr'skogo /1962 g./ plenuma TSK Trudovoi Partii Korei (July 10, 1963)," *RGANI*, f. 5, op. 49, d. 640, l. 294.

not meet hopes and expectations that Kim Il-sung placed on his technological revolution.<sup>424</sup>

North Korea's cooperation with the socialist bloc in science and technology continued with the basic principle of "maximizing frugality in exchanging delegations including researchers and scientists" until the end of 1962.<sup>425</sup> Visible changes occurred starting from early 1963. Due to lack of funding as was the case for numerous occasions, the North Korean government in April 1963 abruptly cancelled to receive Soviet technical help in building three industrial objects. Also, some of the construction projects that were being carried out under Soviet supervision ceased to be resumed after 1967, while the delivery of Soviet equipment for other facilities were postponed. The total amount of Soviet technological help in North Korea's first Seven-Year Plan reduced to 100 million rubles, compared to the original amount of 300 million rubles. Simultaneously, North Korea strived to expand bilateral economic relationships with socialist countries such as the GDR, Czechoslovakia, and Hungary. The Sino-North Korean relationship, especially that of a military nature, was reinforced, which was displayed by the Chinese delegation's unofficial visit to Pyongyang in March and April 1963.<sup>426</sup> Throughout 1963 and 1964, *Rodong Shinmun* constantly published articles that justified the consolidation of "self-reliant economy" and openly supported the leadership of the PRC in a

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<sup>424</sup> Byun Hak-moon, "The Technical Revolution Theory of North Korea," pp. 99-110.

<sup>425</sup> "Meeting minutes with comrade Park Yong-guk, the Chief of the International Department of the Central Committee of the WPK (August 13, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 8, ll. 182-185. Later, it turned out that North Korea's top trade partner in 1962 changed to the PRC from the Soviet Union. N. Shiryaev, "Spravka (June 11, 1964)," RGANI, f. 5, op. 49, d. 904, l. 40.

<sup>426</sup> B. Pimenov, "O khode vypolneniya resheniy dekabr'skogo /1962 g./ plenuma TSK Trudovoi Partii Korei (July 10, 1963)," RGANI, f. 5, op. 49, d. 640, ll. 291-292; 299; 302-303; 306.



global struggle against imperialism and intra-bloc revisionism.

North Korean planners continued to search for a solution to carry out technological revolution only from demanding its workers to follow the Party's guidance. The Second National Convention of Scientists and Engineers, held in March 20-22, 1963, was a good example that shows how Kim Il-sung viewed the country's science and technology. According to a Soviet document, not only Kim Il-sung, but also Kang Yŏng-ch'ang, the President of the AS of the DPRK, sharply criticized the country's economic, engineering, and scientific leaderships. Kang pointed out that the country's labor productivity considerably lagged behind from that of many countries by referring it in terms of labor productivity in construction that still stagnated at the level of 1958. The vinalon factory that consumed much resources for its construction in May 1961 only produced 6,000 tons of vinalon per year, compared to the planned 30,000 tons per year.<sup>427</sup> Kim recognized that the development of science and technology was not only lagged behind, but was also one-sided. He warned the country's researchers and engineers, stating that their achievements that were lauded by media "contradicted the reality."<sup>428</sup> Allowing the nation to read foreign books and journals regarding science and technology, he requested the pursuit of technology at a higher pace, with the goal of catching up Japan's machine-building industry in 10-15 years. To the Soviet view, it was "characteristic" that the North Korean officials did not fail to request from the Soviet representative the drawings and technical documents regarding a variety of Soviet lathes

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<sup>427</sup> B. Pimenov, "O khode vypolneniya resheniy dekabrskogo /1962 g./ plenuma TSK Trudovoi Partii Korei (July 10, 1963)," RGANI, f. 5, op. 49, d. 640, ll. 292-293; 295.

<sup>428</sup> "Meeting minutes (April 16, 1963)," RGANI, f. 5, op. 49, d. 640, ll. 246-247.

(*unikal'naya stanka*) after the Convention.<sup>429</sup>

The North Korean leadership's criticism was repeated in the first half of the 1960s. Chŏng Chun-t'aek, the Chairman of the SPC, in the September Plenum of 1963, attributed the low quality of the country's products to the failure to fully implement the TMS as well as the Ch'ŏnsalli methods, a system of economic management created after Kim Il-sung's visit in February 1960 to Ch'ŏngsan agricultural cooperative. Also, he continued that the country's economic officials failed to eliminate stationary work style (*ch'aeksangjuŭi*, literally meaning desk-ism) as well as formalism (*hyŏngsikchuŭi*), a passive and inactive attitude to implementing the Party's guidance in one's work. Indeed, Chŏng reported that the country's focus in economic development was placed on heavy industry that was to be enhanced by the increase of labor productivity and technological progress campaigns. Unfortunately, the Soviet representative that made an evaluation that the primary reason for difficulties in North Korea's economic development lied in its policy itself did not have any meaningful channels to deliver its opinions to North Korean planners.<sup>430</sup>

North Korea's limited discussion with the Soviet Union for exchanging delegations in 1963 shows that the country's turn away from the Soviet-led socialist bloc. In March 1963, the Soviet representative was surprised at the North Korean proposal to decrease the volume of exchange of experts and researchers by three times that of the previous year. Also, it took almost three months for the North Korean proposal to be submitted, which caused the Soviet

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<sup>429</sup> E. Titorenko, "Kul'turnaya zhizn' Pkhen'yana v marte 1963 goda /Spravka/ (April 5, 1963)," RGANI, f. 5, op. 49, d. 641, ll. 28-29.

<sup>430</sup> Yu. Ognev, "O sentyabr'skom plenumе TsK Trudovoi Partii Korei 1963 goda /Spravka/ (September 17, 1963)," RGANI, f. 5, op. 49, d. 640, ll. 335-337.

representative to become suspicious. However, the North Korean official simply stated that the country was concentrating their resources into the preparation for the 1964 Olympics Games in Tokyo.<sup>431</sup> Given that North Korea suggested a similarly considerable reduction of cultural exchanges to Czechoslovakia, East Germany, Poland, Hungary, and Romania and that the Sino-North Korean agreement was rapidly reached in March 1963,<sup>432</sup> the Soviet representative began to seriously consider how to expand pro-Soviet propaganda in North Korea.<sup>433</sup>

The North Korea-Soviet agreement of cultural and scientific cooperation was reached in May 13, 1963, in which the Soviet authorities in Pyongyang were able to observe North Korea's changed attitude toward Soviet techno-science. Compared to the 1962 plan, the total volume of exchange of experts decreased (78 Soviet experts and 86 Korean experts, compared to 189 and 246 respectively in 1962). North Korea only agreed to receive additional Soviet experts that were necessary for the completion of a survey in Tuman River and the compilation of a Russo-Korean dictionary. While North Korea would send its experts to the Soviet Union to familiarize themselves with laboratory works, automation, and computers, all which were novel, the joint history research project of the Great October Revolution was cancelled. According a Soviet document, North Koreans in negotiations strived to demonstrate their "disinterestedness" about the achievements of Soviet techno-science, while persistently emphasizing that "socialism in North Korea had been built self-reliantly."<sup>434</sup> The Soviet

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<sup>431</sup> "Meeting minutes (March 11, 1963)," RGANI, f. 5, op. 49, d. 641, ll. 17-18.

<sup>432</sup> E. Titorenko, "Kul'turnaya zhizn' Pkhen'yana v marte 1963 goda /Spravka/ (April 5, 1963)," RGANI, f. 5, op. 49, d. 641, ll. 35-36.

<sup>433</sup> RGANI, f. 5, op. 49, d. 641, ll. 41-42.

<sup>434</sup> RGANI, f. 5, op. 49, d. 641, ll. 43-47.

ambassador characterized this North Korean leadership's approach as "consumer's character" because it only revealed its "desire to get more, without giving anything in return" without explaining the official reason for the reduced volume of exchanges. This observation made sense, as indicated by the East German representative's opinion about the North Korean-GDR agreement of cooperation: "Apparently, we will sign these days, although the Korean comrades managed to insist on excluding from the plan everything that made it worth signing the plan."<sup>435</sup>

Previous studies characterize the early 1960s as the beginning of North Korea's turn to the PRC and the broader Third World.<sup>436</sup> However, it fails to realize that the North Korean leadership in the period were deeply concerned about negative effects on the country's trade relations with socialist countries. From the North Korean authorities's perspective, China also had "superpower chauvinism," a rude and imperialistic attitude towards smaller bloc countries, as much as the Soviet Union. Also, the "Albanian method," which implied a direct confrontation against the Soviet Union inside the socialist bloc,<sup>437</sup> was something that North Korea did not pursue.<sup>438</sup> The reason was simple that North Korean planners clearly recognized that the PRC could not provide efficient help as much as the Soviet Union and other bloc

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<sup>435</sup> RGANI, f. 5, op. 49, d. 641, ll. 50-57.

<sup>436</sup> Ok Chang Joon, "Naengjŏn'gi pukhan ūi sangsang chiri wa 'p'yŏngyang sŏnŏn'" [Pyongyang Declarations : Imaginative Geography of North Korea during the Cold War] (in Korean), *T'ongil kwa p'yŏnghwa* [Unification and Peace] 12:1 (2020), pp. 5-45.

<sup>437</sup> Elidor Mēhilli, *From Stalin to Mao: Albania and the Socialist World* (Ithaca: Cornell University Press, 2017).

<sup>438</sup> "Kritika revizionistskoi teorii Khrushcheva o "edinoi ekonomike" (December, 1962)," RGANI, f. 5, op. 49, d. 640, ll. 22-23 [summarized in Russian].

countries in Eastern Europe.<sup>439</sup>

Although it is extremely hard to reconstruct how ordinary North Koreans lived in the early 1960s due to a lack of reliable source materials, declassified Soviet archival documents can provide a glimpse into how North Korean society reacted to the North Korean leadership. Indeed, there were a number of signs that ordinary people in North Korea were tired to live only “in faith” without adequate material compensation. One North Korean journalist told a Soviet correspondent that the current propaganda described that the food situation of North Korea was better than that of both the Soviet Union and Czechoslovakia. However, the North Korean journalist continued, these were the contents of official propaganda that was created only “to calm the people.” This reality drove some North Koreans to privately express uselessness and nonsense of such propaganda. Meanwhile, military service was popular and attractive for the country’s youth, as the Korean People’s Army was seen as beneficial in terms of material and cultural conditions.<sup>440</sup> By the end of 1963, the Soviet ambassador evaluated that the high price of North Korea’s propaganda about “great success” and “abundance” was paid by “work-loving Koreans.” Out of exhaustion (*ot istoshcheniya*), the ambassador continued, the North Korean people seemed to “too often quit their works and rest.” Furthermore, to a few Soviet visitors to North Korea in late December 1963, the poverty that plagued the country was striking.<sup>441</sup>

By the mid-1960s, the Soviet representative in North Korea assessed some of the

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<sup>439</sup> B. Pimenov, “O khode vypolneniya resheniy dekabr'skogo /1962 g./ plenuma TSK Trudovoi Partii Korei (July 10, 1963),” RGANI, f. 5, op. 49, d. 640, l. 298.

<sup>440</sup> “Meeting minutes (January 23, 1963),” RGANI, f. 5, op. 49, d. 640, ll. 37-38.

<sup>441</sup> “Some data (April 9, 1964),” RGANI, f. 5, op. 49, d. 904, ll. 32; 36.

important features in the country's economy, which always caused a failure to meet the originally planned target of industrial production. From the Soviet perspective, North Korea's inefficiency primarily stemmed from the Chinese-type principle of "self-reliance based on one's own strength" that already turned out to be "bankrupt."<sup>442</sup> In addition to North Korea's limited engagement with the Soviet-led socialist bloc, outdated equipment, some of which were built in the 1930s, weak mechanization (in mining and fuel industries), and the absence of automation (in machine-building, chemical, and metal industries) altogether contributed to an economic stalemate. Indeed, based on numerous technical documents (more than about 1,500 topics), given by the Soviet Union, North Korea by the end of 1965 was able to produce its own automobile, mining equipment, pump, compressors, electrical equipment, diesel engines, ships, and machine tools. However, the country's desire to produce "unique and special equipment" using single samples (*edinichnye ekzemplary*) of imported equipment resulted in irrational use of productive power as well as a lot of spending of labor. For example, in the machine-building industry, although Kiyang, Tokch'on, Ryongsong factories in 1965 produced

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<sup>442</sup> Those features included considerable spending on defense (more than 30% of the national budget), insufficient use of economic help from socialist countries, overstatement of the plan and non-supply of necessary materials, economic policies that exclusively relied upon both revolutionism (*revolyutsionnost'*) and enthusiasm of the people without the combination of material stimulations, excessive centralization of the production leadership (meaning the factory party committee) while ignoring one-man management in enterprises; technological backwardness in all fields of economy, which held the growth of labor productivity, and the lack of raw materials (steel, coke, oil, cotton, rubber, wood, and electricity). "Obzor razvitiya ekonomiki KNDR za 1965 god (March 1966)," RGANI, f. 5, op. 49, d. 886, ll. 5-7.

a variety of machine-tools and presses, those machines turned out to be low quality since the workers used preexisting samples without complete technical documents.<sup>443</sup>

To North Korean planners after late 1962, more economic integration in the socialist bloc was interpreted as more consolidation of the country's neo-colonial status, which explains North Korea's maintaining its ideological-centric policy in science and technology. The North Korean leadership in the second half of 1962 understood as extremely negative Nikita Khrushchev's reform proposals of the Council for Mutual Economic Assistance (CMEA),<sup>444</sup> an organization created in 1949 to coordinate the socialist bloc's economic activities. Khrushchev's "theory of unified economy" that argued for the efficient division of labor among the member countries of the CMEA was simply an imperialistic attempt to leave North Korea as the technologically-backward country from the North Korean perspective.<sup>445</sup> From this theory, the only purpose of North Korea was to become the supplier of a variety of ores and metals to the other bloc countries. As such, North Korea in the early 1960s did not invest in the development of mining industry because its leadership did not want to turn the country into a raw material appendage (*pridatok*) of other countries. However, once the decision was made in the September Plenum of 1963 to develop mining industry given that it had tremendous

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<sup>443</sup> "Obzor razvitiya ekonomiki KNDR za 1965 god (March 1966)," RGANI, f. 5, op. 49, d. 886, ll. 11-12; 30-31.

<sup>444</sup> Robert S. Jaster, "The defeat of Khrushchev's plan to integrate Eastern Europe," *The World Today* 19:12 (December 1963), pp. 514-522.

<sup>445</sup> "Kritika revizionistskoi teorii Khrushcheva o "edinoi ekonomike" (December, 1962)," RGANI, f. 5, op. 49, d. 640, ll. 17-23.

export potentials,<sup>446</sup> North Korea turned to the world market, in which those ores and metal products would bring more income above a “friendship price” of the socialist bloc (See Table 3-5).<sup>447</sup>

Table 3-5: Estimations of North Korea’s Export of Non-Ferrous Metal Products in 1965

Unit: thousand tons.

Products	Planned Exports	USSR	Non-Soviet Bloc Countries*	Capitalist Countries
Electrolytic Zinc	59	6.5	7.9	36
Black and Electrolytic Lead	33	16	8.5	8.4
Cadmium	210	36.5	21	129

Source: “Obzor razvitiya ekonomiki KNDR za 1965 god (March 1966),” RGANI, f. 5, op. 49, d. 886, l. 25.

Remarks: \* Here, non-Soviet bloc countries include the GDR, Czechoslovakia, Hungary, Poland, Romania, Vietnam, Cuba, and the PRC.

Simultaneously, throughout the first half of the 1960s, North Korea decreased its exports of non-ferrous metals to the Soviet Union. Few Soviet attempts to increase the volume of the trade turnover with North Korea did not give any favorable results to the Soviet Union.<sup>448</sup> North Korea also expanded its trade networks with capitalist countries such as Japan, West Germany, Holland, Austria, UAE, Morocco, and Iran. Yet, North Korea remained dependent

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<sup>446</sup> Yu. Ognev, “O sentyabr'skom plenumе TsK Trudovoi Partii Korei 1963 goda /Spravka/ (September 17, 1963),” RGANI, f. 5, op. 49, d. 640, l. 338.

<sup>447</sup> N. Shiryaev, “Spravka (June 11, 1964),” RGANI, f. 5, op. 49, d. 904, l. 51.

<sup>448</sup> M. Kuz'min, “Spravka (June 3, 1963),” RGANI, f. 5, op. 49, d. 897, ll. 228-229.



on the Soviet Union in obtaining oil products, ferroalloys, cable products, cotton, yarn, tires, and spare parts for automobiles. The late historian Natalia Bazhanova pointed out that North Korea's trade in the early 1960s negatively affected the socialist market as a whole, as the country prioritized selling high quality products to "advanced" Western countries.<sup>449</sup> However, she failed to notice the extent to which the North Korean leadership wanted to build a national economy that was strong and "self-reliant."

The North Korean leadership in the mid-1960s was fully aware of how difficult it was to maintain balance between continuing its heavy industry-focused development strategy and expanding the country's integration to the socialist market for more income. However, North Korea chose the former drawing upon the historical "triumph" in the era of a thousand-li horse. After Nikita Khrushchev's power waned in late 1964, North Korean planners resumed the dispatch of experts and specialists to the Soviet Union. But it did not mean that North Korea was ready to return to its previous engagement with the Soviet-led socialist bloc.

At the same time, Kim Il-sung continued to demand accelerating techno-scientific innovation by removing "old thought" under the Party's guidance. This North Korean structure of revolutions in science and technology suppressed any suggestions that argued for the country's more integration into the Second World, or a neo-colonial future for North Korea. This structure of techno-scientific revolutions was created with the North Korean leadership's understanding that the import-substitution of advanced knowledge through technical documents had caused additional issues, which again required cost-incurring measures to be taken. Also, as I will discuss in the following Chapters, Kim Il-sung had good reasons to believe

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<sup>449</sup> Natalia Bazhanova, *Vneshne-ekonomicheskie svyazi KNDR*, pp. 57-58.

that his workers had high capability in the techno-scientific fields such as agriculture, medicine, and nuclear power generation. Thus, by optimistically overestimating that the people's capability to increase industrial production would be exploited in the future, North Korean planners in the early 1960s enacted the cheapest and most rational way to innovate science and technology—ideological engineering. Meanwhile, the history of socialist assistance that was offered to North Korea in the post-war period was erased in the country's national memory.

In this context, it was of no coincidence that Kim Il-sung argued for the need to revolutionize (*hyŏngmyŏnghwa*) North Korean intelligentsia including researchers at the July Plenum of 1965. Soon, the country's communities of experts would face the storm of another “revolution” for two years, which would culminate in the 1967 purge of some of the Kim Il-sung's old guards, who allegedly prioritized the improvement of people's living standards over the development of heavy industry.<sup>450</sup>

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<sup>450</sup> RGASPI, f. 495, op. 228, d. 1486, ll. 9-11.

## Chapter Four: The Prehistory of Green Revolution in North Korean Soils

This chapter examines what assistance from the Soviet Union in the field of agriculture was given to North Korea in the 1950s and how this contributed to the creation of the socialist cooperative management (*sahoejuũijŏk hyŏptong kyŏngni*) of agricultural production in North Korea,<sup>451</sup> the country's primary system to not only produce food, but also distribute wealth between cities and rural communities. This chapter discusses how a project of agricultural collectivization, a Soviet design that merged traditional farming villages into a collective farm (*kolkhoz*) to integrate agriculture into a planned economy, was implemented in North Korea. The collectivization was to assure the supply of food and materials to an industrializing state, a response by the Soviet authorities to manage food crises between 1927 and 1929,<sup>452</sup> which

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<sup>451</sup> Kim Il-sung, *Uri nara esŏ sahoejuũijŏk nongŏp hyŏptonghwa ũi sũngni wa nongch'on kyŏngni ũi kũmhu paljŏn e taehayŏ* [On the Victory of Socialist Agricultural Cooperativization in Our Country and the Future Development of Agricultural Economy] (Pyongyang: Chosŏn Rodongdang Ch'ulp'ansa, 1959).

<sup>452</sup> Robert.W. Davies, *The Socialist Offensive: The Collectivisation of Soviet Agriculture, 1929-1930* (London: The Macmillan Press, 1980); *The Soviet Collective Farm, 1929-1930* (Cambridge: Harvard University Press, 1980); Robert. W. Davies and Stephen G. Wheatcroft, *The Years of Hunger: Soviet Agriculture, 1931-1933* (London: Palgrave Macmillan, 2004); Robert. W. Davies, Oleg Khlevniuk, and Stephen G. Wheatcroft, *The Years of Progress: The Soviet Economy, 1934-1936* (Basingstoke: Palgrave Macmillan, 2014); Mark B. Tauger, "Commune to Kolkhoz: Soviet collectivization and the transformation of communal peasant farming, 1930-1941" (PhD Diss., University of California, Los Angeles, 1991).

was adopted in the socialist bloc after World War II. This chapter also investigates the hitherto-unexplored role of agrarian experts, from both North Korea and the Soviet Union, in North Korea's agricultural collectivization. This chapter argues that socialist assistance in agriculture mostly boosted the morale of North Korean agrarian experts and producers, which in turn gave their leadership a strong justification in the late 1950s to actively pursue "self-reliance" in the management of collectivized agriculture, rather than to continue interactions with the Soviet-led socialist bloc over agricultural technologies. From the perspective of the North Korean leadership, the completion of agricultural collectivization in September 1958 and a gradual growth in national grain production afterwards were important indicators that enabled the country's agriculture to engage less with the outside world.

Previous studies have examined North Korea's agricultural collectivization in detail,<sup>453</sup> though the same works risk reproducing the official propaganda about the country's agrarian development, due to the lack of archival sources that can verify North Korean claims. However, scholars do not discuss the issues such as how North Korea began to implement agricultural collectivization in the form of a state-owned farm, or a state farm, how agricultural experts participated in the collectivization process, and how the North Korean leadership strived to improve collectivized agriculture in the early 1960s, all of which are important topics to better

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<sup>453</sup> Kim Sŏng-bo, *Nam-Pukhan kyŏngje kujo ūi kiwŏn kwa chŏn'gae: Pukhan nongŏp ch'eje ūi hyŏngsŏng ūl chungsim ūro* (Seoul: Yŏksa Pip'yŏngsa, 2000); Sŏ Tong-man, *Puk Chosŏn sahoejuŭi ch'eje sŏngnipſa, 1945-1961* (Seoul: Sŏnin, 2005); Cho Su-ryong, "Chŏnhu Pukhan ūi sahoejuŭi ihaeng kwa 'charyŏkkaengsaeng' kyŏngje ūi hyŏngsŏng" [Jaryeokgaengsaeng Economy: North Korea's Socialist Transition and Its Formation in 1953-63] (in Korean) (PhD Diss., Kyung Hee University, 2018).

understand the country's agrarian history during the Cold War period. Unfortunately, social scientists examine North Korea's collectivized agriculture only to focus on its inefficiency and unsustainability.<sup>454</sup> Building on these works, and based on the newly declassified archival documents from Russia, this chapter investigates the prehistory of North Korea's "self-reliant" agricultural management, which culminated in the publication of Kim Il-sung's "Thesis on Socialist Agricultural Problems" in 1964.<sup>455</sup> Given that the current North Korean regime regards Kim Il-sung's Thesis as the most important program for agrarian development, revisiting how assistance from the Soviet Union contributed to shaping this North Korean platform is tremendously significant.

It is also important to take into account that three overarching contexts in which the agricultural policy in the 1950s was made. First, Kim Il-sung channeled the majority of available resources to the country's rapid industrialization,<sup>456</sup> which was perceived as the most urgent task to be done to make a material basis for further development. Although Kim Il-sung saw it as no less important to bridge the gap between cities and rural areas, his project to transform agricultural producers into workers and thus to build authentic "socialist farming

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<sup>454</sup> Nam Sung-wook, "Chronic Food Shortages and the Collective Farm System in North Korea," *Journal of East Asian Studies* 7:1 (April 2007), pp. 93-123; Chong-Ae Yu, "The Rise and Demise of *Juche* Agriculture in North Korea" in Jae-Jung Suh ed., *Origins of North Korea's Juche: Colonialism, War, and Development* (Plymouth: Lexington Books, 2013), pp. 119-144.

<sup>455</sup> Kim Il-sung, *Uri nara sahoejuüi nongch'on munje e kwan han t'eje* [A Thesis on Socialist Agricultural Problems of Our Country] (Pyongyang: Chosön Rodongdang Ch'ulp'ansa, 1964).

<sup>456</sup> Kim Yön-ch'öl, *Pukhan üi sanöphwa wa kyöngje chöngch'aek* (Seoul: Yöksa Pip'yöngsa, 2001).

villages” in North Korea was overshadowed by other priorities such as industry and defense.<sup>457</sup> Second, the North Korean leadership’s assumption that creating a superior socialist system compared to its southern counterpart would bring the peaceful unification justified the country’s industrialization, resulting in excessive unbalance between industry and agriculture. In the post-Korean War 1950s, Kim Il-sung saw socialist transformation of agriculture as a priority to facilitate the unification. Third, the Party’s decision, especially in the late 1950s and early 1960s, was largely affected by the presence of the United States (U.S.) forces in the Republic of Korea (South Korea), which deepened North Korea’s national spending in defense and machine-building industry. Eventually, the country’s agricultural sector suffered tremendously. That is, North Korea’s agriculture became an “appendage” of the state in terms of supplying food, raw materials, and labor force.<sup>458</sup>

Historical accounts of agricultural collectivization in different socialist regimes enable us to situate North Korea’s quest for more agricultural production in the broader contexts of the socialist bloc and of the pursuit of large-scale farming.<sup>459</sup> Post-war socialist countries

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<sup>457</sup> Kim Il-sung, *Sahoejuŭi nongch'on t'eje ūi shirhyŏn ūl wihayŏ* Vol. 2 (Pyongyang: Chosŏn Rodongdang Ch'ulp'ansa, 1994).

<sup>458</sup> In December 1959, Kim Il-sung acknowledged that the only source to supply labor force (*roryŏk*, literally meaning efforts) to industry was agriculture. Kim Il-sung, “Sahoejuŭi kyŏngje kŏnsŏl esŏ chegi toenŭn tangmyŏnhan myŏt kaji kwaŏptŭl e taehayŏ” [On Some Imminent Tasks Raised in the Construction of Socialist Economy], *Kim Il-sung Sŏnjip* [Selected Works of Kim Il-sung] 2 (Pyongyang: Chosŏn Rodongdang Ch'ulp'ansa, 1960), pp. 460-461.

<sup>459</sup> Benedict J. Tria Kerkvliet, *The Power of Everyday Politics: How Vietnamese Peasants Transformed National Policy* (Ithaca: Cornell University Press, 2005); Gail Kligman and Katherine Verdery,

adopted agricultural collectivization as a promising way to manage agriculture for their industrialized economies, which was completed in Eastern Europe by 1962.<sup>460</sup> The collectivization process entailed the reorganization of traditional farming societies, which was usually carried out with coercion and violence. Also, agricultural collectivization offered not only the training ground for loyal political cadres that were tasked to implement the Party's order in rural areas, but also chances for new generations to take leadership in local places.<sup>461</sup> As such, the management of collectivized agriculture continued until the late 1970s, or the period of reform and opening that was initiated by the People's Republic of China (PRC). While North Korea's agricultural collectivization shared many in common with the aforementioned historical particularities, scholars have overlooked these points, with a specific focus on how the country's agriculture was managed solely by North Korean leadership.

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*Peasants under Siege. The Collectivization of Romanian Agriculture, 1949-1962* (Princeton: Princeton University Press, 2011); Arnd Bauerkamper and Constantin Iordachi eds., *The Collectivization of Agriculture in Communist Eastern Europe: Comparison and Entanglements* (Budapest: Central European University Press, 2014); Sigrid Schmalzer, *Red Revolution, Green Revolution: Scientific Farming in Socialist China* (Chicago: University of Chicago Press, 2016); Joshua Eisenman, *Red China's Green Revolution: Technological Innovation, Institutional Change, and Economic Development Under the Commune* (New York: Columbia University Press, 2018).

<sup>460</sup> John Connelly, *From Peoples into Nations: A History of Eastern Europe* (Princeton: Princeton University Press, 2020), pp. 555-556.

<sup>461</sup> Lynne Viola, *The Best Sons of the Fatherland: Workers in the Vanguard of Soviet Collectivization* (New York: Oxford University Press, 1989).

### *Vulnerable Vanguard of Agricultural Modernity: State Farms*

Previous studies that traced agricultural collectivization in the post-Korean War period omitted one of the important ways that North Korea pursued modern, large-scale agriculture: state-owned farms including state-owned ranches and rental stations of agricultural machine and draft animal. Officially, agricultural collectivization in North Korea began in the August Plenum of 1953.<sup>462</sup> However, by that time, the North Korean state had already been managing state-run agricultural facilities for a number of years.

Having placed independent farming households under loose state control, the land reform of 1946 served as a foundation for North Korea to conduct scientific farming. Yi Sun-gŭn, the officer in charge of North Korean agriculture between 1946 and 1948, reported to the Second Party Congress in March 1948 what the agrarian reforms achieved: the size of arable lands expanded, the grain yield improved, and a number of new houses with electricity built. Given that harvesting a sufficient amount of grains for the North Korean people was a distant goal in 1946, the magnitude of change in North Korean agriculture by early 1948, especially compared to the time under colonial rule, was tremendous.<sup>463</sup> However, it was still difficult to implement scientific farming to boost food production in North Korea. In early 1950, Kim Il-

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<sup>462</sup> The official North Korean name for collectivization movement is *Nongŏp hyŏptonghwa undong* that literally means “agricultural cooperativization movement.” However, I use the term collectivization for the two following reasons: the contemporary North Koreans understood the movement as collectivizing labor, farming tools, draught animals, and arable lands; other scholarly works on agricultural collectivization employ the same term.

<sup>463</sup> Yi Sun-gŭn, “Pukchosŏn nongŏp palchŏn ūl wihan chemunje,” *Inmin* [People] Vol.1 no.1 (November 1946), reprinted in *SBNK* 13, pp. 61-103.



sung criticized that the country's leading cadres lacked zeal to introduce "advanced science" of the Soviet Union in agriculture.<sup>464</sup>

In the late 1940s, North Korean leaders tried to show beneficial qualities of "socialist agriculture" by building model farms across the country. Like other planners in the decolonizing world, Kim Il-sung understood the political importance of food self-sufficiency. In February 1948, when grain production in North Korea marked the highest in history, Kim Il-sung stated in the North Korean People's Committee that organizing large-scale collective labor was *not yet* necessary and that the practice of labor exchange among small-scale individual farmers should be encouraged instead.<sup>465</sup> This clearly shows that although the North Korean leadership moved towards the building of socialism, the speed of such a transformation in agriculture was expected to be gradual. It was in this context that state farms were established in order to supply the nation with meat and fruit: as early as 1947, eleven state ranches were built that raised dairy cattle, pigs, horses, and chickens.<sup>466</sup> Some of these state farms were established based on state-run agricultural stations.<sup>467</sup> From the onset, state farms were to

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<sup>464</sup> Kim Il-sung, "Nongch'on kyōngni wa rimōp susanōp ūl tōuk paljōn sik'igi wihayō" [For Further Development of Agricultural Economy, Forestry, and Fishery], *Kim Il-sung Sōnjip* [Selected Works of Kim Il-sung] 2 (Pyongyang: Chosōn Rodongdang Ch'ulp'ansa, 1954), p. 505.

<sup>465</sup> Kim Sōng-bo, *Nam-Pukhan kyōngje kujo*, p. 226.

<sup>466</sup> "Ob itogakh raboty Ypravleniia Sovetskoi Grazhdanskoi Administratsii v Severnoi Koree za tri goda (Avgust 1945 g. – noyabr' 1948 g.) Tom II. Ekonomicheskaiia chast'," AVPRF, f. 0480, op. 4, p. 14, d. 47, l. 114

<sup>467</sup> There were twenty-four state-run agricultural stations in North Korea by late 1946. Yi Sun-gūn, "Pukchosōn nongōppalchōn ūl wihan chemunje," *People* Vol.1 no.1 (November 1946), reprinted in

serve as a model (*mobõm*) that would influence peasants with modern, large-scale, and mechanized agricultural methods.<sup>468</sup> North Korean planners regarded state farms as a local interpretation of state-owned farms in the Soviet Union (*sovkhos*), which were to play a role of the vanguard of agricultural modernity by introducing advanced agronomy and providing high-quality livestock, grain, industrial crop, and fruits.<sup>469</sup>

In April 1950, Kim Il-sung kept his gradual approach towards collectivized agriculture. He was not sure if the time was ripe for collectivizing agriculture in North Korea by early 1950. In a meeting with Stalin, Kim Il-sung stated that the living standard of North Korean farmers had been considerably improved to the extent that some farming households could turn into (*prevratit'sya*) collective farms, or *kolkhozy*. However, Kim continued, the existing division of the Korean Peninsula prevented North Korean planners from raising this issue of organizing collective farms. To Kim's request of "instructions" on the same issue, Stalin urged the need to prevent from rushing into the matter, repeatedly pointing out that North Korea had the very small size of arable lands. During their short discussion, Stalin advised his North Korean guest patience in collectivizing farms and emphasized to expand first the size of arable lands in North Korea, preferably by reclaiming marshy lands near the sea. Then, Stalin recommended to develop state farms and promised to offer Kim Il-sung Soviet tractors. Kim Il-sung fully took

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*SBNK* 13, p. 99.

<sup>468</sup> Yi Su-tae, "1948nyõndo inmin'gyõngje puhõngbaljõn sirhaeng e issõsõ õi sae kyõnghõm kwa sae kwaõp," *People* Vol.3 no.4 (September 1948), reprinted in *SBNK* 14, p. 342.

<sup>469</sup> The Ministry of Agriculture and Forestry Regulation no. 28 (December 13, 1949), reprinted in *SBNK* 22, pp. 348-359.

Stalin's advice regarding a moderate approach to socialist transformation of agriculture.<sup>470</sup>

Table 4-1: The Number of North Korea's State Farms, 1949-1956

Main direction	1949	1950	1951	1952	1953	1954	1956
Animal husbandry	8	8	7	10	12	12	19
Grains (dry field)	-	-	2	5	7	9	
Grains (irrigated field)	1	1	1	3	3	6	
Seeds improvement	-	-	-	-	47*	10	9
Horticulture	7	7	7	16	16	36**	20
Total	16	16	17	34	85	73***	n/a

Source: Yu. I. Komarov, "Sel'skoe khozyaistvo KNDR /Spravka/ (September 1954)," AVPRF, f. 0102, op. 10, p. 58, d. 50, l. 241; V. Makarov, "Obzor ekonomiki KNDR za 1956 god," AVPRF, no archival signature, NIKH, tp. MU0000000907, scp. 050600449, l. 164.

Remarks: \* The number of state farms (seeds improvement) decreased as a result of the expansion of some of them as well as transfer the smallest of them to other types of state farms and agricultural cooperatives.

\*\* The number of state farms (horticulture) increased at the expense of the disaggregation of the existing ones.

\*\*\* In total, 114 state farms including 41 state farms (sericulture) existed in 1954.

Despite the official North Korean account that the newly built state farms during the

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<sup>470</sup> I was able to examine the copy of the original meeting minutes at the National Institute of Korean History, with the help of Cho Su-ryong. For the Chinese translation of the original materials, see Shen Zihua ed., *Chaoxian zhan zheng: Eguo dang an guan de jie mi wen jian* Vol. 1 (Taipei: Zhong yang yan jiu yuan jin dai shi yan jiu suo, 2003), pp. 332-335.

Korean War played a crucial role in not only accommodating war refugees as labor force, but also meeting the needs of the Korean People's Army (KPA) at the frontlines,<sup>471</sup> the reality was much harsher than the leadership's initial expectation. By early 1950, Kim Il-sung demanded state farms improve their performance, as they did not result in something that North Korean farmers could understand as a model.<sup>472</sup> By early 1951, U.S. bombardment and war activities decreased the number of cattle (60% of the pre-war level), pigs (30% of the pre-war level), and chickens and ducks ("state of extinction"), which drove North Korean planners from 1951 to 1953 to take measures including the establishment of ranches at various administrative levels,<sup>473</sup> and the intensification of both ideological education and anti-embezzlement campaigns among state farm workers.<sup>474</sup> The number of Machine Rental Station (MRS) that was first built in 1950 increased during the war from five in 1950 to fourteen in 1953.<sup>475</sup> Also, North Korea imported a couple of hundred tractors from the Soviet-led socialist bloc to assign

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<sup>471</sup> Kim Han-ju, *Chosŏn minjujuŭi inmin kong hwagugesŏ ŭi nongŏp hyŏptong hwa undong ŭi sŏngni* (Pyongyang: Chosŏn Rodongdang Ch'ulp'ansa, 1959), p. 12.

<sup>472</sup> *Selected Works of Kim Il-sung* Vol. 2 (Pyongyang: Chosŏn Rodongdang Ch'ulp'ansa, 1954), p. 508.

<sup>473</sup> The DPRK Cabinet Decision no. 295 (June 14, 1951), reprinted in *SBNK* 24, pp. 219-221.

<sup>474</sup> The 128th Political Committee of the Central Committee of the WPK Resolution (August 3, 1952), reprinted in *SBNK* 29, pp. 217-221; The 152nd Political Committee of the Central Committee of the WPK Resolution (June 4, 1953), reprinted in *SBNK* 29, pp. 268-273.

<sup>475</sup> The DPRK Cabinet Decision no. 36 (February 8, 1950), reprinted in *SBNK* 23, pp. 65-67. The first North Korean MRSs were built in Anju-*kun* (South Pyongan Province), Chŏngju-*kun* and Yongch'ŏn-*kun* (North Pyongan Province), Chaeryŏng-*kun* (Hwanghae Province), and Hamju-*kun* (Hamgyong Province). The *kun* is a mid-level administrative unit that equals to county, or *uezd*, in Russia.

them in the country's MRS and state farms.<sup>476</sup> From the spring of 1954, horse rental stations with 4,000 horses were established to help farmers sow seeds.<sup>477</sup>

The unorganized administration in state farms, which was often referred as “weak organization” by North Korean planners, usually led to lower results in production than the original plan. For example, Soviet experts evaluated that considerable spending and the increased prime cost occurred in State Farm No. 5, the country's largest state farm during the

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<sup>476</sup> While most of the tractors in the first half of 1950s were produced in the Soviet Union including DT-54, Belarus, Universal-2, KD-35, and ATZ-NATI, a few tractors were imported from Czechoslovakia (*Cheko*) and East Germany (*Pioner*). Meanwhile, Soviet experts pointed out that this use of “multi-brand” machines “extremely complicates” the country's agricultural policy, as North Korea was fully dependent upon foreign countries in terms of fuel, lubricant products, and repair parts. The following table shows the gradual increase of the number of MRS in the country:

	1950	1951	1952	1953	1954	1955	1956	1957
No. of MRS	5	5	9	14	16	45	48	50
No. of Tractors (15hp)	149	116	249	629	516	1,956	2,197	2,584
No. of Tractors	70	55	133	267	244	1,168	1,493	1,541
Conducted Works (ha)	6,583	15,041	53,336	96,146	161,868	305,689	264,000	265,000

Source: RGAE, f. 365, op. 2, d. 1458, l. 132; RGAE, f. 365, op. 2, d. 1469, l. 58.

<sup>477</sup> Yu. I. Komarov, “Sel'skoe khozyaistvo KNDR /Spravka/ (September 1954),” AVPRF, f. 0102, op. 10, p. 58, d. 50, ll. 231-232.

Korean War, due to the current day-rate system, in which workers received daily monetary compensation, instead of the contract work system, in which workers could expect the more stable flow of income than the day-rate system.<sup>478</sup> According to a Soviet document, animal husbandry was the “most lagging field” in North Korea’s state farms. Whereas around 585 tons of meat was collected in 1952 as agricultural tax in kind from the country’s ranchers, all of the state farms including provincial breeding farms simply produced 530 tons in the same year. Furthermore, Soviet experts pointed out that inattention and bad care for livestock (horned animals, horses, and sheep) that were sent from Mongolia as part of assistance were the main reasons for the lower rate in production in state farms. In 1953, the grain yield from all of the state farms took up 0.3% (7,600 tons) of the country’s total grain yield (2,113,765 tons). Hence, Soviet experts characterized the share of state farms in North Korea’s agricultural production as at best “insignificant.”<sup>479</sup>

In the first half of the 1950s, a number of cadres, who were assigned to manage state farms in provinces partly used their farms to gain private profits; however, the North Korean state was not capable of addressing them in a timely manner. In May 1953, Park Ch’ang-ok, North Korea’s second-in-command, criticized that “peasant psychology” was prevalent among most of the leading workers in the party organization in provinces, which made them fail to meet the plan in industrial and agricultural production. To his Soviet interlocutor, Park stated that state farms were “completely unprofitable” in terms of state revenue and could not serve

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<sup>478</sup> Yu. Komarov, “Itogi vesennego seva v KNDR /spravka/ (June 30, 1953),” AVPRF f. 0102, op. 9, p. 49, d. 57, l. 18.

<sup>479</sup> Yu. Komarov, “Prodovol'stvennoye polozheniye KNDR /Spravka/ (December 1953),” AVPRF f. 0102, op. 9, p. 49, d. 57, ll. 147-149; 157; 167.

as a model for the country's farmers. Among state farms, he continued, the discipline in labor was very slack. Moreover, there were numerous cases of embezzlement of state farm assets.<sup>480</sup> Indeed, post-war North Korea suffered widespread embezzlement and the lack of disciplined workers.<sup>481</sup> However, the North Korean state's fight against extensive embezzlement could not be decisive since most of the embezzlement cases were made during the Korean War. "No one would [be left to] work," the North Korean official explained, if all of those who were involved in embezzlement—North Koreans and Soviet Koreans altogether—were to be legally punished. Therefore, the North Korean leadership decided to strictly hold accountable only those who perpetrated misappropriation in the post-war period.<sup>482</sup>

The case of Pyotr I. Ogai shows how embezzlement was done in state farms. As a Soviet Korean expert, who was dispatched to North Korea in 1945, Ogai took up the post of the director at Yonggang State Farm. Later, it turned out that Ogai misappropriated a huge amount of money (1.2 million won) and took the margin from selling radish at forty-five won per kilogram, while putting down thirty won per kilogram in the accounting book during the war. Ogai was reported to have used 33% of the embezzled money for his personal needs and the rest to treat KPA and Chinese soldiers, who were visiting his state farm. Although he denied the accusation, the North Korean Ministry of Internal Affairs evaluated that the amount of his

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<sup>480</sup> The Diary of S.P. Suzdalev, the Soviet Chargé d'affaires ad interim in the DPRK, for the period from May 13 to 31, 1953 (May 28, 1953), AVPRF, f. 0102, op. 9, p. 44, d. 9, ll. 42-43.

<sup>481</sup> "The diary of S.P. Suzdalev, the Soviet Ambassador to the DPRK, from January 1 to 31, 1954 (January 8, 1954)," AVPRF, f. 0102, op. 10, p. 52, d. 8, ll. 20-21.

<sup>482</sup> The diary of S.P. Lazarev, Soviet Chargé d'affaires ad interim in the DPRK, for the period from April 1 to 24, 1954 (April 24, 1954), AVPRF, f. 0102, op. 10, p. 52, d. 8, l. 81.

misappropriation was nine million won, more than seven times higher the initial accusation.<sup>483</sup> Between April and May 1954, his case became clearer. Ogai appeared to have sold the vegetables as an additional source of revenue, which he privately planted in ten hectares of land, ignoring the planned quota. Then, he sold these vegetables not only to earn private gains, but also to purchase necessary items for his state farm such as vegetable seeds, spare parts for tractors and trucks, and oil products from local markets. Although Ogai argued that he had obtained oral permissions from Agricultural Minister, the Minister refused to confirm such allegations.<sup>484</sup> By May 20, another investigation found out that Ogai's illegal spending reached at twenty million won, around sixteen times higher than the originally questioned amount. Ultimately, he was arrested two days later.<sup>485</sup> Although we do not have clear evidence to show how representative Ogai's case was at that time, it is safe to say that it took several years for North Korean planners to address this issue of embezzlement.<sup>486</sup>

Interestingly, North Korea's state farms also served as a venue for a battle of expertise among Soviet agrarian specialists in the DPRK. A dispute in 1953 between P. I. Fedorov, the Soviet advisor to North Korean Vice Minister of Agriculture, and N. N. Nikolaev, the Soviet

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<sup>483</sup> The diary of S.P. Lazarev, Soviet Chargé d'affaires ad interim in the DPRK, for the period from April 1 to 24, 1954 (April 24, 1954), AVPRF, f. 0102, op. 10, p. 52, d. 8, l. 80.

<sup>484</sup> The diary of S.P. Lazarev, Soviet Chargé d'affaires ad interim in the DPRK, for the period from April 30 to May 28, 1954 (May 3, 1954), AVPRF, f. 0102, op. 10, p. 52, d. 8, ll. 87-88.

<sup>485</sup> The diary of S.P. Lazarev, Soviet Chargé d'affaires ad interim in the DPRK, for the period from April 30 to May 28, 1954 (May 20, 1954), AVPRF, f. 0102, op. 10, p. 52, d. 8, l. 91.

<sup>486</sup> The April Plenum of the Central Committee of the WPK Resolution (April 4, 1955), reprinted in *SBNK* 30, pp. 630-635.



advisor to North Korean Agricultural Minister is a case in point. During the war, the North Korean leadership strived to address flaws in state farm works through a series of cabinet decisions and party meetings. Accordingly, in early March 1953, the Soviet ambassador instructed both the advisors, Nikolaev and Fedorov, to prepare for the suggestions for improvement. After having a tour to Chagang and Hamgyong Provinces from March 22 for one month, Fedorov compiled his report that contained expressions that could be interpreted as rude and arrogant by North Korean leaders. Meanwhile, according to the report written by Nikolaev, Fedorov failed to assist his North Korean counterparts in drawing up the suggestions, which was instead carried out with the help of Nikolaev. When Fedorov handed to the Soviet Embassy his first version of the report in May 25, the Soviet representative characterized it as “seditious” since his report only reproached various measures taken by North Korean planners. In the eyes of the Soviet ambassador, Fedorov’s report “implied their [the North Korean leadership’s] resignation.”<sup>487</sup> Hence, Fedorov’s report was not given to Kim Il-sung. After Nikolaev wrote a critical note on Fedorov’s report in late July, the Soviet Embassy requested in August the corresponding Ministries of the Soviet Union to review the documents written by Fedorov and Nikolaev respectively. The Soviet Embassy in Pyongyang expressed its support for Nikolaev, as his note correctly pointed out how erroneous Fedorov’s report was and commended the North Korean authorities’ agricultural policy. Subsequently, the Soviet Ministry of Agriculture endorsed in early October the decision of the Soviet Embassy, which

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<sup>487</sup> N.N. Nikolaev, “Zaklyuchenie (July 25, 1953),” AVPRF f. 0102, op. 9, p. 49, d. 57, ll. 61-63. For Fedorov’s report, see P.I. Fedorov, “Razvitie gosudarstvennykh sel’skokhozyaistvennykh predpriyatii v KNDR /spravka/ (June 1953),” AVPRF f. 0102, op. 9, p. 49, d. 57, ll. 25-59.

led to the recall of Fedorov to the Soviet Union.<sup>488</sup> Nikolaev, who won the day with the support of the Embassy, fulfilled his duty as a ministerial advisor until the summer of 1954.<sup>489</sup>

Although Fedorov was a seasoned expert in the field of the sovkhoz system with the experience of more than twenty years, Nikolaev characterized Fedorov's works in North Korea in general, and a summary report of Fedorov's one-month-long tour to countryside in particular, as full of "generalization, superficial inspection, and serious failure to take into account the actual condition of the country." One of the crucial points Fedorov made was North Korea's "failure" to keep fertile lands to establish state farms. From his perspective, state farms should have possessed productive soils in order to become a model for individual farmers. The North Korean leadership, to Fedorov's view, built state farms and ranches in the mountains, which Syngman Rhee, South Korean President, had accused Kim Il-sung of "locking up people until their death by hunger." However, according to Nikolaev, it was a superficial observation that ignored the historical context why the state farm system had begun in North Korea. Nikolaev pointed out the ignorance of Fedorov that the land reform of 1946 was "historically necessary" and that the main task of state farms afterwards was to manage new lands in order to expand sown areas, increase the grain yield, and develop animal husbandry. That is, Fedorov could not understand why North Korean leaders built state farms in the mountains, not in fertile lands that had been already distributed to farmers. Also, Nikolaev wrote in his note that Fedorov had a "liquidationist propensity," an inclination to remove everything that existed before a new start. Indeed, Fedorov suggested to eliminate around ten state farms that were being built, and to

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<sup>488</sup> AVPRF f. 0102, op. 9, p. 49, d. 57, ll. 128-130.

<sup>489</sup> "Meeting minutes with Kim Il, Minister of Agriculture of the DPRK (June 22, 1954)," AVPRF, f. 0102, op. 10, p. 52, d. 9, l. 58.

slaughter all Mongolian sheep for meat resources. Instead of coming up with constructive suggestions that would bolster the preexisting state farm policy, Fedorov sought to dissolve what was being constructed and risked violating his duty as an advisor. Nikolaev criticized Fedorov in a comradely manner by detailing his erroneous use of factual data, his refusal to correct his arrogant attitude towards North Korean counterparts, and his neglect to fulfill his job. From the perspective of the Soviet Embassy, Fedorov's "unreasonable criticism" against the policy of the hosting country, which stemmed from misunderstanding North Korea's "specific conditions," was politically undesirable and thus unacceptable.<sup>490</sup>

To the North Korean leadership in the first half of the 1950s, the improvement of state farms was one of the most difficult tasks. One of the hardest issues was how to increase fodder, an indicator that showed the country's ability to manage agricultural resources. Although North Korea in the early 1950s chose to cultivate corn in state farms for the purpose of ensilage, or feed storage, Soviet experts assessed the scale of this practice as "extremely small." Throughout the country, farmers were inexperienced in general and the lack of construction materials to build silages was acute. Issues related to state farms abounded. According to one Soviet document, North Korean state farms almost did not engage with breeding draft animals such as purebred cattle and focused only on pigs and poultry, which drove farmers to buy young animals in the market at higher prices. Although experiments were undertaken to crossbreed Korean cattle with East Friesian cattle, the offspring turned out to be very weak in terms of positive properties of a Korean breed such as immunity to diseases and work capacity in harsh

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<sup>490</sup> A. Ledovskii, "To Comrade Gromyko A.A (October 8, 1953)," AVPRF f. 0102, op. 9, p. 49, d. 57, l. 129.

environments.<sup>491</sup> According to a high-profile North Korean agronomist, state farms by mid-1956 continued to suffer the insufficient amount of fodder and fail to meet the country's need for pigs, chickens, and ducks.<sup>492</sup> At the end of the same year, the ratio of the grain yield produced from state farms only took up 5% of the total 2,807,000 tons, compared to 56% that was produced by agricultural cooperatives. Meanwhile, state farms produced more than 50% of the country's total fruit production (41,100 tons, with apple amounting to 33,500 tons).<sup>493</sup>

Retrospectively, North Korea's state farms that were built to serve a model for individual farmers could not meet the expectation of the leadership. In the second half of the 1950s, state farms simply remained as nominal agricultural institutions that were not much different from agricultural cooperatives. However, North Korean planners assigned a role of a pioneer onto state farms once again, when Kim Il-sung in early March 1960 took another crucial measure to increase overall productivity by introducing the "system that treated favorably smaller working-units" (*chagöppan udaeje*) and the bonus system, a reform of the socialist cooperative management to beef up the agricultural production. Unlike agricultural cooperatives and MRSs, state farms introduced the independent accounting system (*tongnip ch'aesanje*) of smaller working units, which gave limited autonomy to each state farm in its

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<sup>491</sup> Yu. Komarov, "Sostoyanie zhivotnovodstva v KNDR /Spravka/ (June 2, 1956)," AVPRF, no archival signature, NIKH, tp. MU0000000904, scp. 050600428, ll. 364-365; 367-368.

<sup>492</sup> "Meeting minutes with Kim Chong-hŭi, a correspondent member of and the Director of the Academy of Agricultural Sciences of the DPRK (May 21, 1956)," AVPRF, f. 0102, op. 16, p. 24, d. 6, ll. 44-46.

<sup>493</sup> V. Makarov, "Obzor ekonomiki KNDR za 1956 god," AVPRF, no archival signature, NIKH, tp. MU0000000907, scp. 050600449, ll. 137; 143; 154; 165.

management.<sup>494</sup> In search of increased agricultural productivity, North Korea in the early 1960s turned to state farms as a pioneering model, as it did in the late 1940s.

### ***Learning and Indigenizing Soviet Farming Techniques***

In the first half of the 1950s, North Korean planners strived to popularize and introduce Soviet farming methods “on a much larger scale” in North Korean soils. One of the ways to do so was to send to the Soviet Union North Korean farmers, who were working in state farms, agricultural cooperatives, or individual households, to learn the ways how “advanced” Soviet agriculture operated and how peasants actually worked in sovkhoz and kolkhoz. Sending agrarian experts started after the Korean War. One of the first such requests was made in February 1954 by the North Korean leadership; a group of twenty-five agricultural workers was selected to visit the Soviet Union for three months.<sup>495</sup> The Soviet authorities in mid-April accepted it and instructed V.V. Matskevich, Soviet Vice Minister of Agriculture, to draw up the plan.<sup>496</sup> According to the submitted plan by Matskevich, the North Korean delegation was to attend four lectures, visit seven kolkhozes, four sovkhozes, two MTS, twelve agricultural institutes and experimental stations, and three industrial enterprises, in addition to a tour to the Krasnodar region and Uzbekistan.<sup>497</sup>

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<sup>494</sup> Hong Tal-sŏn, *Uri nara nongch'on kyŏngni pumun esŏ muljiljŏk kwansim ūi wŏnch'ik ūi ch'angjojŏk chŏgyong* (Pyongyang: Kwahagwŏn Ch'ulp'ansa, 1963).

<sup>495</sup> “The diary of S.P. Suzdalev, the Soviet Ambassador to the DPRK, from January 1 to 31, 1954 (February 13, 1954),” AVPRF, f. 0102, op. 10, p. 52, d. 8, ll. 37-39.

<sup>496</sup> “Plan (May 12, 1954),” RGANI, f. 5, op. 28, d. 189, ll. 5-7.

<sup>497</sup> “To the Central Committee of the CPSU (May 18, 1954),” RGANI, f. 5, op. 28, d. 189, l. 8.

Previous studies simply assumed that the purpose of this tour was to demonstrate to the Soviet Union North Korea's intention of carrying out all-out agricultural collectivization, in addition to gaining experience in managing collectivized agriculture.<sup>498</sup> Although this interpretation makes sense in a larger context, North Korean leadership's goals were more humble than what historian Cho Su-ryong argues: Kim Il, North Korean Minister of Agriculture, expressed his gratitude to the Soviet approval of this request, commenting the tour "will make a big contribution to the reconstruction and development of our agriculture that was destroyed by the war."<sup>499</sup> It was more a tour to get a glimpse of how Soviet agriculture was managed than a display of North Korea's will to rapidly implement agricultural collectivization. In addition, given that North Korea was then occupied with rebuilding industrial infrastructure, sending a delegation for field-trip (*kyŏnhak*) was to primarily boost the morale of a few agrarian experts of the country.<sup>500</sup> By April 1954 when the Soviet Union approved this request, agricultural collectivization was completed at 2% of the total farming households of North Korea; by October, the rate of completion did not exceed 11%.<sup>501</sup> Hence, the primary goal of this tour was to inspire North Korean farming workers by allowing them to see Soviet

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<sup>498</sup> Cho Su-ryong, "Jaryeokgaengsaeng Economy," p. 90.

<sup>499</sup> RGAE, f. 7486, op. 22, d. 28, l. 2

<sup>500</sup> Ch'oe Myŏng-ik, "Roryŏk yŏngung An Tal-su" [Labor Here An Tal-su] in Chosŏn rodongdang chungang wiwŏnhoe nongŏp hyŏptong chohap kyŏnghŏmjip p'yŏnjip wiwŏnhoe ed., *Nongŏp hyŏptonghwa undong ūi sŭngni* [The Victory of Agricultural Cooperativization Movement] Vol. 5. *Sae saenghwal ūi sŏndu e sŏsŏ* [Standing at the Head of New Life] (Pyongyang: Chosŏn Rodongdang Ch'ulp'ansa, 1959), pp. 63-65.

<sup>501</sup> Sŏ Tong-man, *Puk Chosŏn sahoejuŭi ch'eje sŏngnipſa, 1945-1961*, p. 716.

agriculture that was modern, large-scale, and mechanized.

Led by Park Mun-kyu, Vice Minister of Agriculture of North Korea and who served as the first Minister of Agriculture until March 1954, the delegation was cordially received by the leadership of the Soviet Ministry of Agriculture in June 6, 1954. From the following day, the delegation participated in a variety of receptions, meetings (the delegation had a meeting with Trofim. D. Lysenko, then the most famed agronomist in the Soviet Union), field trips to agricultural institutes, and excursions for sightseeing in and around Moscow, which included Lenin Museum, the mausolea for Lenin and Stalin, and the Bolshoi Theater. Before moving to Uzbekistan on June 19, the delegation expressed much admiration at what they saw and heard in Moscow. Then, the delegation spent a couple of weeks, in Uzbekistan (up to July 17) and in the Krasnodar region (to August 11) respectively, before returning to Moscow for a ten-day-long program. The delegation was scheduled to visit exemplary kolkhozes, sovkhoses, Machine Tractor Station, and agricultural research institutes. However, the Soviet Union provided only one translator for the whole group during the trip, which seriously narrowed the scope of communication between the delegation and the Soviets. This communication issue could be clearly seen from the delegation's visit to Kolkhoz "Polar Star" (*Pukküksöng*; Rus. *Polarnaya Zvezda*), a collective farm that was managed exclusively by Soviet Koreans. Kim Pyöng-hwa, legendary leader of this kolkhoz, received the delegation and shared his experience in Korean. Some indicators of material affluence including a club equipped with radio and telephones, a big two-story nursery, and a kolkhoz-run school gave a good impression to the delegation. The delegation appeared to have been convinced of the beneficial qualities to run collective farms by "essentially clarifying all the accounts they had heard [through incomplete translation] earlier" when visiting kolkhozes. A Soviet report acknowledged that the "answers

in their native language were apparently clearer and more convincing.”<sup>502</sup>

The last schedule for the North Korean farmer’s delegation was to visit the All-Union Agricultural Exhibition (VSKhV) in Moscow on August 27, 1954, one day before returning home.<sup>503</sup> The VSKhV was on the top of the list of places that the Soviet leadership invited foreign visitors to show them economic achievements, which were all staged to display the superiority of the Soviet management of collectivized agriculture. Opened in 1939, the VSKhV closed due to the German invasion of 1941 that led to the devastation of buildings and evacuation of exhibition materials. The reconstruction was carried out from 1950 to 1954 under the supervision of Ivan A. Venediktov, the primary architect of the same exhibition and the Soviet Minister of Agriculture. In the preparation for the celebration of the grand opening, Venediktov at some time before June 1954 invited Kim Il, North Korean Minister of Agriculture, to the exhibition.<sup>504</sup> With Kim Il as the leader, the North Korean delegation included important figures in the country’s agricultural policy-making such as Park Kyŏng-su (Chief of the Agricultural Department of the Party) and Chang Yŏng-chin (Vice Chairman of the State Planning Committee). The delegation stated that they were interested in “agro-techniques (rice, cotton, and beets), irrigation methods, labor organization in both collective and state farms, breeding and keeping highly productive livestock, and agro-machines such as tillage machines and horse-drawn harvesters.” According to a Soviet document, after

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<sup>502</sup> RGAE, f. 7486, op. 22, d. 28, ll. 11-12; 18; 47; 50; 56; 97.

<sup>503</sup> RGAE, f. 7486, op. 22, d. 28, l. 132.

<sup>504</sup> RGAE, f. 7486, op. 22, d. 28, l. 165. The invitation was again handed to the North Korean leadership in mid-July. The diary of S.P. Lazarev, Soviet Chargé d'affaires ad interim in the DPRK, for the period from June 26 to July 22, 1954 (July 15, 1954), AVPRF, f. 0102, op. 10, p. 52, d. 8, l. 116.



participating in the opening ceremony of the exhibition in August 1, the delegation visited the VSKhV for one and half weeks on a daily basis to study the issues that they were interested in. In the exhibition, North Korean guests expressed a great degree of admiration toward animal husbandry, crop cultivation, use of fertilizers, and sophisticated farming machines, all of which displayed the superiority of socialist agriculture.<sup>505</sup> Kim Il summarized that the “exhibition was a school of advanced experience,” fully reflecting what Kim Il-sung strived to do: “we [North Koreans] must strenuously learn and adopt the Soviet experience in agriculture.”<sup>506</sup> However, the delegation might not have noticed that all of the seven varieties of rice that were grown in North Korea and presented to their host as a token of gratitude for an invitation were “dismissed” to be further processed by Soviet agronomists because of grain smut (*Tilletia horrida*), or a fungal rice disease that did not exist in the Soviet Union.<sup>507</sup>

From September 15 to October 2, 1955, another North Korean agricultural delegation

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<sup>505</sup> RGAE, f. 7486, op. 22, d. 28, ll. 134-138.

<sup>506</sup> RGAE, f. 7486, op. 22, d. 28, ll. 140-143. For an account of impression that was received by a North Korean delegation member, see Yu Kūm-tōk, “Sahoejuūijōk nongōp ūi ch'allanhan sōnggwa rŭl siwi hanūn Ssoryōn nongōp chōllamhoe rŭl pogosō” [After Watching the Soviet Agricultural Exhibition which Demonstrates Brilliant Achievements of Socialist Agriculture], *Sōnjin nongōp* [Advanced Agriculture] 5 (November 1954), pp. 74-81; “Sahoejuūijōk nongōp ūi ch'allanhan sōnggwa rŭl siwi hanūn Ssoryōn nongōp chōllamhoe rŭl pogosō,” *Advanced Agriculture* 6 (December 1954), pp. 96-103.

<sup>507</sup> RGAE, f. 7486, op. 22, d. 28, ll. 163-166. Seven North Korean rice varieties included Aeguk no. 20, Yugu no. 132, P'yōngbuk no. 4, Chungsaengūnbangju, Ŭn'gu no. 5, Chōksillyōk, and Suwōn no. 1. For their properties, RGAE, f. 7486, op. 22, d. 28, ll. 168-172. For the property analysis of the presented samples of North Korean soils, RGAE, f. 7486, op. 22, d. 63, ll. 1-37.

visited the Soviet Union, which was led by Ri Yong-sök, a Soviet Korean and a Vice Minister of Agriculture.<sup>508</sup> This group wanted to drop by Moscow on its way back home from Hungary after inspecting Hungarian agriculture.<sup>509</sup> This tour was marked by a minor debate between Ri Yong-sök, a fluent Russian speaker, and Trofim Lysenko. At one point during the trip, Lysenko offered a three-hour-long lecture to the delegation, in which he explained the inconsistency of the “so-called Decreasing Soil Fertility theory.” This theory that argued that each additional investment of capital and labor in the land would give a smaller yield compared to the previous investment was regarded as a reactionary, Malthusian theory in the Soviet Union. Throughout the lecture, Ri Yong-sök, who was in favor of this theory, tried to refute Lysenko’s arguments. However, at the end of the lecture, Ri admitted that his own understanding was “incorrect.” According to a Soviet document, the delegation repeatedly expressed their desire to receive a “small library” on crop production, farming techniques, and experimental methods from the Soviet Ministry of Agriculture. However, the delegation only obtained some brochures from the VSKhV. A few weeks earlier, another group of eighteen Korean agricultural workers, led by Kim Ch’ang-man, visited the Soviet Union from September 3 to 19, mainly to look around the VSKhV and agricultural production places in and around Moscow.<sup>510</sup> This type of “familiarization tour” abroad, which was either requested by the North Korean government, or invited by the bloc countries, continued to the second half of the 1950s.<sup>511</sup>

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<sup>508</sup> RGAE, f. 7486, op. 22, d. 100, ll. 117-119.

<sup>509</sup> “Meeting minutes with Park Tök-hwan, a counselor in the Embassy of the DPRK in the USSR (September 5, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 6, ll. 40-41.

<sup>510</sup> RGAE, f. 7486, op. 22, d. 100, ll. 120-121.

<sup>511</sup> RGAE, f. 365, op. 2, d. 1444, l. 71.

In addition to the dispatch of agricultural delegations, North Korea also sent its agricultural experts to the Soviet Union for the improvement of their qualifications and the study of specific problems in boosting food production. What did these North Korean experts want to learn? Soviet documents about a group of thirty-one North Korean experts, who spent the time in the Soviet Union from February 1953 to January 1954, show what specific methods and experience North Korean agriculture wanted to acquire. It seems that at some point around mid-1952 North Korean planners made a request to dispatch its agricultural experts, which was approved by the Soviet authorities. Accordingly, the Soviet Ministry of Agriculture issued a decree in September 16, 1952 to make preparation to host North Korean experts. Subsequently, the group of North Korean experts arrived at Moscow in February 5, 1953, and then moved to different places with accompanying Soviet guides.

Table 4-2: 31 North Korean Agricultural Experts Training in the Soviet Union in 1953-1954

Name	Year of Birth (of Work)	Specialization	Place of Training
Son Sök-ch'an	1927 (3)	Technician (irrigation)	Ivanovskaya (Krasnodar Territory); Kuban irrigation system (Stavropol Territory); Stavropol system
Ko Kwang-il	n/a	Technician (irrigation)	
Ri Chöng-kün	1919 (8)	Engineer (irrigation)	
Kim Chöng-hwal	n/a	Engineer (irrigation)	
Sin T'ae-yong	1923 (5)	Technician (mechanization)	Medvedovskaya MTS; Interdistrict overhaul workshop, repair plant (Krasnodar Territory)
Park Söng-hak	1924 (2)	Technician (mechanization)	
Hwan Hong-yöl	1920 (3)	Engineer (mechanization)	
Kim Söng-to	n/a	Agronomist (sericulture)	Central Asian Institute of Sericulture (Uzbek SSR); Central station of the oak silkworm (Kharkiv region)
Chang Kwang-hak	n/a	Agronomist (sericulture)	
Kim Chae-chun	1929 (3)	Agronomist (pomiculture)	Michurinsk Research Institute of Fruit Growing (Tambov)
Ko Chae-hyöng	1917 (5)	Agronomist (pomiculture)	

			Region)
Kim Yu-chae	1925 (3)	Agronomist (breeder)	T.D. Lysenko All-Union Selection and Genetic Institute at Odessa
Park Pok-chun	1920 (3)	Agronomist (afforestation)	Kuibyshev Experimental Agroforestry Reclamation Station of the Forestry Department (Kuibyshev Region)
Kim Ch'un-söp	1919 (15)	Agronomist (afforestation)	
Oh Ki-wan*	1928 (3)	Agronomist (plant protection)	Pest Control Department of the Ministry of Agriculture (Kazakhstan SSR)
Han Yong-chun	1918 (10)	Agronomist (plant protection)	
Chi Pyöng-hwal	1925 (4)	Agronomist (plant protection)	
Ri Söng-ho	1925	Veterinarian	All-Union Institute of Experimental Veterinary Medicine
Ri Yöng-po	1924 (8)	Veterinarian	
Park Mun-il	1924 (7)	Veterinarian	
Se Ki-uk	1925 (8)	Veterinarian	
Sin Hui-tam	1923 (10)	Veterinarian	
Hong Sök-chun	1919 (5)	livestock specialist	Ukrainian Research Institute of Animal Husbandry (Kharkiv region)
Ch'oe Tong-kyu	1920 (12)	livestock specialist	
Ch'oe Il-sön	n/a	livestock specialist	
Ch'oe Söng-kyu	1929 (9)	livestock specialist	
T'ae Ch'ang-lok	n/a	livestock specialist	
Mun Yön-hong	1923 (8)	livestock specialist	
Min Kyu-sik	1923 (8)	livestock specialist	
Kim Söng-söl	n/a	Poultry specialist	Research Institute of Poultry; Research Institute of Rabbit Breeding (Moscow region)
Sin T'ae-yong	n/a	Poultry specialist	

Source: RGAE, f. 7486, op. 9, d. 1386, ll. 29-30; 47; 49-64; 70-76; 79; f. 7486, op. 22, d. 37, l. 108.

Remarks: \* Oh Ki-wan defected from North Korea by the mid-1960s. Later, he co-authored an article of North Korean history in collaboration with the late historian Chong-Sik Lee. See Chong-Sik Lee and Ki-Wan Oh, "The Russian Faction in North Korea," *Asian Survey* 8:4 (April 1968), pp. 270-288.

Although not much is known about the selection process of these experts, a ten-month-long training gave North Korean experts an invaluable chance in terms of not only improving qualifications, but also living in a peaceful place that was far from their own country under constant U.S. bombardment. While learning Russian (a 300-hours program was designed by the Soviet authorities for all North Korean experts), these experts attended regular courses and lectures hosted by the visiting and nearby institutes, trained in the field and experimental stations, and made excursions to surrounding the natural environment, in addition to fulfilling the duty to learn from Soviet agriculture. Host institutions were tasked to provide to these experts appropriate residential places, diversified nutritional sources, and ordinary clothing, all of which were very difficult to find in wartime North Korea. These experts seemed to have fully enjoyed their training: outside regular curricula, they often visited Soviet experts to make personal connections, attended numerous study sessions, and frequented libraries, state universities, and theaters. They also were eager to purchase a variety of latest publications that were then only available in the Soviet Union, to meet their own technical interests. By the end of the tour in late 1953 and early 1954, these experts took oral interviews to sum up their study, receiving, in most of the cases, “outstanding” and “good” marks. After finishing their program, these experts returned to Moscow by January 21, 1954, and spent some free time before flying back home on February 3.<sup>512</sup> V.V. Matskevich, the Soviet officer in charge of this group, made a request in January 1954 to the Soviet cabinet to disburse 50,000 rubles to buy gifts for North Korean experts.<sup>513</sup> As a souvenir, Matskevich wanted to present the radiogram “Minsk” and a

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<sup>512</sup> RGAE, f. 7486, op. 22, d. 37, ll. 40-132.

<sup>513</sup> RGAE, f. 7486, op. 22, d. 37, ll. 21-23.

set of thirty records to each expert. The suggested amount was not small given that the total cost for a year-long sojourn for the group was around 275,000 rubles.<sup>514</sup>

It is not hard to understand some difficulties this group of North Korean agrarian experts faced during their training in the Soviet Union. First and foremost, the language barrier was not easy to overcome in the short period time. Since their schedule included attending regular courses, consulting Soviet specialists, and working in the field, all of which were conducted in Russian language, North Korean experts had to invest much of their time to learn the language. It also burdened the North Korean government since the language education and stipend were two of the most expensive components of the program that was to be paid by North Korea. Regardless of the education level, few experts had a good command of Russian. Out of twenty-three experts, whose profiles were stored in the archive, only three were more or less able to communicate in Russian. For the three experts, who were sent to Kazakhstan, one Soviet Korean specialist working in the Pest Control Department was tasked to serve as a translator during the first month. However, this type of support was very rare due to the extremely limited availability of Korean speakers among Soviet specialists in the relevant field. The North Korean experts might have had hard time to adjust the knowledge that they obtained from the Japanese system and practiced in Korean language, to that of the Soviet system. Such experts included Ri Chǒng-kūn, who graduated from the prestigious Harbin Institute of Technology in Manchuria during the colonial period.<sup>515</sup> Lastly, some of the experts got sick, suffering infectious diseases including tuberculosis by the end of their stay in the Soviet

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<sup>514</sup> RGAE, f. 7486, op. 9, d. 1386, l. 91.

<sup>515</sup> RGAE, f. 7486, op. 9, d. 1386, ll. 49-64; 70-76.

Union.<sup>516</sup>

Throughout the 1950s, North Korea sent its agricultural experts to the Soviet Union. The initial dispatches of North Koreans in the first half of the 1950s not only set the pattern for the subsequent dispatch, but also were comparatively extensive: according to a Soviet document, the Soviet Ministry of Agriculture hosted fifty-two experts from North Korea, fourteen from Mongolia, and three from Bulgaria by the mid-1950s.<sup>517</sup> In May 1954, the North Korean government made a request to dispatch a group of sixty-five experts for eight months, which was approved by Moscow in the following month.<sup>518</sup> Showing his gratitude to the Soviet representative in North Korea, Kim Il promised that his Ministry would try to select more prepared experts for candidates, taking into account “mistakes in the past” and “needs of the country.”<sup>519</sup> Eventually, fifty-three experts, who specialized in irrigation, mechanization, reclamation, and construction, were sent to the Soviet Union in late September, who were then sent to the Krasnodar region (nine persons), the Stavropol region (twenty persons), and Uzbekistan (twenty-four persons). Unlike the previous group, however, the time allotted for learning Russian language decreased almost by half (180 hours in two months), which reflected

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<sup>516</sup> Those experts who were sick included Se Ki-uk, Ch'oe Il-sōng, and Sin T'ae-yong. RGAE, f. 7486, op. 9, d. 1386, l. 79.

<sup>517</sup> RGAE, f. 7486, op. 22, d. 113, l. 71.

<sup>518</sup> The diary of S.P. Lazarev, Soviet Chargé d'affaires ad interim in the DPRK, for the period from June 6 to 21, 1954 (June 21, 1954), AVPRF, f. 0102, op. 10, p. 52, d. 8, l. 103.

<sup>519</sup> “Meeting minutes with Kim Il, Minister of Agriculture of the DPRK (June 22, 1954),” AVPRF, f. 0102, op. 10, p. 52, d. 9, l. 59.

North Korean planners' desire to save funds.<sup>520</sup> After spending eight months, these experts followed suit of the previous group of thirty-one experts: they returned home after taking oral interviews in May 1955.<sup>521</sup>

It is important to understand that some of the dispatched North Korean experts made individual requests of the extension of the period to prolong their stay or transfer to another place, which shows how these agrarian experts perceived the program and their roles in it. A group of eight North Korean agricultural experts, who visited the Soviet Union from September 1954 to May 1955 for their training in sovkhozes, offers a good example.<sup>522</sup> In November 21, 1954, three experts, who were assigned to Sovkhoz "Ventsy-Zarya," co-wrote an appeal to the sovkhoz leadership to explain that they were tasked to learn sheep breeding and request a training opportunity from February 1955 until the end of their program in a sovkhoz that specialized in sheep breeding.<sup>523</sup> In December 7, 1954, two experts repeated the same request.<sup>524</sup> However, the permission from the sovkhoz leadership was only made in January

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<sup>520</sup> RGAE, f. 7486, op. 22, d. 38, ll. 43-44; 93-94.

<sup>521</sup> RGAE, f. 7486, op. 22, d. 113, ll. 79-80. However, the number of returnees from this group was 52 because of the death of one person, who practiced in Uzbekistan. His cause of death was reported to be asphyxia as a result of intoxication developed with intestinal ascariasis. RGAE, f. 7486, op. 22, d. 38, l. 148.

<sup>522</sup> RGAE, f. 7803, op. 4, d. 849, ll. 5; 36-39; 82; 93. The names of the three were An Kong-ch'un (34 years old), Ch'oe Tong-han (23 years old), and Cho Pyŏng-ch'il (35 years old). According to the profile, they were not able to communicate in Russian when they started training in September 1954.

<sup>523</sup> RGAE, f. 7803, op. 4, d. 849, l. 92.

<sup>524</sup> RGAE, f. 7803, op. 4, d. 849, l. 67.



19, 1955, with a one-month period of training in nearby Sovkhoz “Sovruno.”<sup>525</sup> Another example is Ch’oe Tong-han, although no archival material clearly shows whether his request was accepted. In December 9, 1954, Ch’oe made a request to provide more accounting courses that were necessary for him. Since his training plan that was drawn up by the Soviet Ministry of Sovkhoz only allocated seventy hours for accounting in sovkhov, he wanted to extend this sub-program to 220 hours and learn also accounting in kolkhoz (150 hours) as well as “central accounting” (fifty hours). Referring to his responsibility to introduce advanced Soviet agricultural accounting system to North Korean agriculture, he also requested a two-month extension of his program to July 1955. However, it seems that his request was not approved.<sup>526</sup> This means that although some North Korean experts wanted to make the best of their program by appealing for changes in the plan, their individual requests that would go beyond the boundaries of initial plans were seldom approved by the Soviet authorities.

The training program in the Soviet Union boosted the morale of North Korean agrarian experts. In addition to acquire experience of what was understood as “advanced socialist agriculture,” North Korean experts were able to form a valuable human network with their Soviet counterparts. For example, Park Pok-chun, who trained in afforestation as a member of the group of thirty-one in 1953-1954, wrote a letter to his “dear friends” in the Soviet Union

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<sup>525</sup> RGAE, f. 7803, op. 4, d. 849, l. 59.

<sup>526</sup> RGAE, f. 7803, op. 4, d. 849, ll. 53-53; 55; 62; 64-66. Given that the North Korean representative in the Soviet Union denied another extension request that was made by one of these group members of eight (Han Chu-paek), Ch’oe’s request was to be hardly acceptable. “Meeting minutes with Park Tök-hwan, a counselor in the Embassy of the DPRK in the USSR (April 22, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 6, l. 28.

after he returned home in Wŏnsan. Sharing his joy for the tenth anniversary of North Korea's liberation with his colleagues in the Soviet Union, his letter expressed how the North Korean people had learned "advanced technology" from the Soviet Union. Thanks to his staying abroad, Park's letter continued, he was about to finish his graduate program in North Korea by October 1957. Park concluded his letter with the wish to "exchange achievements in science, culture, and arts," while praising the "unity and immortal friendship" between the Soviet and North Korean peoples.<sup>527</sup> As his letter stated, North Korean agriculture had been learning "advanced" science and technology of the Soviet Union for a decade by 1955, through Soviet agrarian specialists working in North Korea, which will be discussed in the following section.

### ***Soviet Agricultural Mission in North Korea***

Almost nothing has been studied regarding how Soviet agrarian specialists contributed to the development of North Korean agriculture in the 1950s. To make matters worse, North Korean publications simply narrate that the socialist transformation of the country's agricultural landscape was achieved solely by its own people.<sup>528</sup> However, this dominant narrative does not do justice to the roles and significance of assistance from the Soviet Union in developing North Korean agriculture in the same period. For a more balanced picture, this section explores the activities of the Soviet agricultural mission in North Korea.

As I discuss earlier in this chapter, there were a number of Soviet advisors, who were

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<sup>527</sup> RGAE, f. 7486, op. 22, d. 113, l. 139.

<sup>528</sup> Ri Sang-chun and Chŏn pyŏng-sik eds., *Chosŏn hyŏngmyŏng suhaeng esŏ Kim Il-sŏng tongji e ūihan maksŭ-reninjuŭi ūi ch'angjojŏk chŏgyong* (Pyongyang: Kwahagwŏn Ch'ulp'ansa, 1962), pp. 178-182.

working for North Korean Ministries, institutes, and higher educational facilities such as Kim Il-sung University and Kim Ch'aek Polytechnic University. Veniamin P. Petrov was one such Soviet advisor, who was sent to wartime North Korea to give assistance at the State Institute of Agricultural Sciences (SIAS, *Kungnip nongsan kwahak yŏn'guwŏn*; Director: Kim Sang-ryŏn). Before coming to North Korea in September 1952, Petrov served as the director in an experimental farm in Stalingrad for several years.<sup>529</sup> According to Petrov's report, the SIAS conducted experiments "in a clear violation of the elementary requirements" for such tests, which was repeated in the country's eight experimental farms. Drawing up the reform plan for the SIAS, Petrov made several recommendations in 1952 including the use of tilling and sowing machines as well as studying partially-automated sowing methods of winter wheat. His main role as an advisor included offering lectures, seminars, and advice to his North Korean colleagues to help them prepare nationwide meetings, introducing Soviet methods in organizing experiments, and finding high-yield varieties. For example, his advice that was offered in October 1952 was taken by his North Korean colleagues, who later laid the groundwork for the country's experimental farm works in 1953. In the summer of 1953, Petrov provided a series of lectures about the inspection method of field crops, which were held for the first time in North Korea. Petrov's suggestions including the use of corns for silage and the early harrowing of the land for winter crops resulted in the dramatic increase of the grain yield at the SIAS: the Institute was able to produce 26.5 tons of food grain in 1953, which was more than four times the amount of the previous year (5.6 tons).<sup>530</sup> Consequently, Petrov convinced

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<sup>529</sup> *Rodong Shinmun* February 28, 1954.

<sup>530</sup> The yield per hectare increased as follows:

the SIAS of advantageous qualities of agricultural techniques such as cross-sowing of grain, seed vernalization, and the square-nest method of planting potatoes. Experts in the SIAS proudly reported the results of applying Petrov’s advanced methods in the 1954 farmers’ congress,<sup>531</sup> which were widely circulated across the country through media.<sup>532</sup>

The suggestion of Soviet advisors, especially those who were working at ministerial levels, was supposed to support the North Korean leadership’s general policy direction, as seen in a Nikolaev-Fedorov dispute in 1953 over state farms. This was mainly because the Soviet representative strived to prevent from giving the image of neo-imperialism by meddling with the country’s domestic affairs. In other words, the Soviets thought that their assistance to North

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Unit: 100kg per ha

	1952	1953
Rice	40	59
Winter Wheat	8.7	25
Barley	5.5	10
Sorghum	8.0	16
Soybean	-	15
Potato	-	150

Source: V. Petrov, “Otchet,” RGAE, f. 7486, op. 22, d. 19, l. 4.

<sup>531</sup> The summarization of these methods for high yield were circulated as a state-endorsed task at the National Congress of High-Yield Farmers-Activists that was held in February 15-17, 1954. *Rodong Shinmun* February 24 and 28, 1954.

<sup>532</sup> V. Petrov, “Otchet,” RGAE, f. 7486, op. 22, d. 19, ll. 1-5.

Korea was supposed to be purely technical and apolitical. It narrowed the boundaries of Soviet advisors' activities inside the North Korean agricultural leadership. More often than not, Soviet advisors formulated advice and suggestions that were regarded as repetitive and less meaningful by their North Korean counterparts. Two brief Soviet reports that were compiled in 1954 by two Soviet advisors working in a row for Kim Il, then Minister of Agriculture, clearly show this point.<sup>533</sup> The target audience of these reports was Moscow, not Pyongyang, which allowed these advisors to state in a more frank and detailed manner. The reports constantly pointed out that North Korean planners should pay a proper attention in developing the country's agriculture, expand the size of arable lands, diversify the source of nutritional resources, and replace manual works with mechanized ones. Although these points were correct, the North Korean authorities by November 1954 saw collectivization—the socialist transformation of agriculture—as a priority; the improvement of agricultural productivity that could be achieved through the aforementioned measures, Kim Il-sung argued, would come *after* collectivization. From the perspective of the North Korean leadership, utilizing market mechanism was capitalistic and thus unacceptable, which made Soviet advisors' numerous recommendations invalid. Moreover, Soviet advisors advised their North Korean counterparts only on technical—thus apolitical—problems such as the beneficial quality of introducing more machines and applying Soviet farming methods to increase productivity. However, these proposals might have caused uncomfortable feelings among North Korean planners, as they reflected the country's destitute situations in which those suggested measures were not able to

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<sup>533</sup> N. Nikolaev, "Spravka (April 4, 1954)," RGAE, f. 7486, op. 22, d. 97, 106-114; A. Solov'ev, "O polozhenii sel'skogo khozyaystva KNDR i rekomendatsiyakh sovetnikov rukovoditelyam Ministerstva zemledeliya (1954)," RGAE, f. 7486, op. 22, d. 97, 115-122.

be realized due to a lack of funds. Some “advanced” methods including deep tillage and dense planting with few seedling were discussed by North Korean officials as early as 1947.<sup>534</sup>

The report of Pirog, who began his tenure in October 1954 as Soviet agricultural advisor in North Korea, clearly demonstrates the technical nature of the Soviet advisors’ institution in foreign countries, which was created by Moscow in the late 1940s to coordinate intra-bloc relations in the socialist bloc.<sup>535</sup> From March 15 to 17, 1955, a conference of Soviet agricultural advisors working in people’s democracies was held in Moscow, in which most of the attention was paid to agricultural situations in the People’s Republic of China (PRC) and East Germany. Pirog presented about North Korea’s situations in the first day of the conference. He explained the country’s “agro-technical” status as well as land use before pointing out the rapidity of North Korea’s collectivization.<sup>536</sup> According to Pirog, a number of North Korean

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<sup>534</sup> Yi Yong-sŏk, “Chuyo nongjangmul e taehan myŏt kaji munje” [A Few Problems regarding Primary Agricultural Produces] *People* Vol.2 no.4 (May 1947), reprinted in *SBNK* 13, pp. 541-558. The author of this article seems to be the same person as Ri Yong-sŏk, a Soviet Korean who was sent to North Korea to work in agricultural matters.

<sup>535</sup> RGAE, f. 7486, op. 22, d. 96, ll. 12-28.

<sup>536</sup> According to Pirog, the number of agricultural cooperatives increased as follows:

Time of Survey	No. of Agricultural Cooperatives
October 1, 1954	1,445
November 1, 1954	7,100
January 1, 1955	10,098 (32%)

cadres, who were in charge of agricultural collectivization in local areas, saw the speed as the “success” without careful assessment. Although Soviet agricultural advisors repeatedly recommended not to “push” (*podtalkivat*) the collectivization process, he continued, some of the “individual leaders” in provincial people’s committees wanted to quickly accomplish the task with a “spirit of arrogance and conceit.” It was also these “individual leaders,” the same report went on, who accelerated the collectivization process by promising that the poor farmers would be provided machines, seeds, fertilizers, and loans from the state, which in turn caused the “dependent mood” among the farmers. Pirog’s presentation concluded that all of the errors and mistakes occurred in the initial stage of collectivization were perpetrated by local cadres. However, his report merely repeated Kim Il-sung’s view on the food crisis in early 1955 that the insufficient “class education” on local cadres, who caused “distortions” in implementing the Party’s policy in local areas on state purchase of grains.<sup>537</sup> Tellingly, Pirog kept silent about the main reasons of the ongoing food crisis: forced state purchase of grains based on the overestimated plan and a ban on free trade of rice. His silence about the most crucial event in North Korea’s agriculture shows that Soviet advisors were obliged to be exclusively technical and apolitical. In other words, Kim Il-sung was virtually free from any blames for the result of its misinformed agricultural policy; North Korean planners including himself simply chose to rebuke cadres in provinces.<sup>538</sup> Kim’s frank acknowledgement that was revealed at the

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Source: RGAE, f. 7486, op. 22, d. 96, l. 17.

<sup>537</sup> “The diary of the Soviet Chargé d'affaires ad interim in North Korea for the period from January 26 to February 16, 1955 (February 2, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 8, ll. 67-69.

<sup>538</sup> “The diary of the Soviet Chargé d'affaires ad interim in North Korea for the period from January 26 to February 16, 1955 (February 5, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 8, l. 70.

extended Presidium meeting held in February 1-3, 1955, that “we [the leadership] are politically defeated” was never known to the rest of the country.<sup>539</sup>

Soviet assistance to boost agricultural production was mostly given through Soviet experts that were sent to North Korea throughout the 1950s. From October 5 to December 3, 1956, two Soviet professors on agronomy including Panteleimon. E. Ladan stayed in North Korea to assist North Korean agricultural scientists. From the border city of Kaesŏng to Mountain Baekdu, the Ladan group visited around twenty-nine agricultural cooperatives, state farms, experimental farms, and relevant educational facilities, while offering detailed consultation on animal husbandry and plant protection. At the request of the North Korean Party, this group worked on to transform Pyongyang state farm into a model pig farm and suggested Koreans to build semi-open pigsties as well as to use devices such as universal feed mixer, electric fence, and tractor-based feed distributors. Kim Il-sung approved all of these suggestions when he was giving a speech there in November 24, 1956.<sup>540</sup> Also, Ladan’s suggestions for the development of animal husbandry in North Korea, which was approved both by the Soviet representative and the North Korean authorities, was published in *Rodong Shinmun*.<sup>541</sup> Another group of six Soviet agrarian experts, led by V. V. Tolov, worked with

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<sup>539</sup> “Meeting minutes with Park Yŏng-pin, a member of the Political Committee of the Central Party of the WPK (February 4, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 8, ll. 88-89.

<sup>540</sup> RGAE, f. 7486, op. 22, d. 183, ll. 4-18.

<sup>541</sup> *Rodong Shinmun* November 30, 1956. The Soviet representative in North Korea had a meeting from November 16 to 17, 1956, to discuss the summary report of the country’s harvest (made by D. S. Lesik, a Soviet counselor to Agricultural Minister) and Ladan’s measures for North Korean animal husbandry. RGAE, f. 7486, op. 22, d. 183, ll. 34-44.



their North Korean counterparts from November 2 to December 26 in North Korea to develop measures to increase agricultural products. Like the Ladan group, the Tolov group also had a one-month-long tour in the country. The suggested measures by the Tolov group were not far from the visions of the future Green Revolution that included the further use of high-yield varieties, the more introduction of fertilizers, the expansion of arable lands through reclamation, and the increased use of machine. All of these suggestions were reviewed in detail and approved by North Korean leaders at the Presidium meeting in December 24.<sup>542</sup> Praising the country's increased grain yield in 1956, which slightly exceeded the highest record of the pre-war years, Kim Il-sung discussed issues about uplifting agricultural economy at a farmers' meeting held in January 1957. In addition to expanding irrigation systems and consolidating cooperatives, he demanded the farmers adopt advanced farming methods "as much as possible,"<sup>543</sup> without revealing the Soviet involvement with those methods. However, the Soviet representative did not fail to report that Kim's speech was based on Soviet advice regarding how to increase food production.<sup>544</sup>

The period for Soviet agricultural experts' stay in North Korea varied from two months to two years, which implied the degree of importance that North Korean planners placed on specific fields of agriculture such as irrigation, animal husbandry, and operation of farming machine. Given that foreign experts usually stayed in North Korea for less than a year, the case of two irrigation specialists, A. N. Kruglov and M. P. Belikov, who helped the North Korean

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<sup>542</sup> RGAE, f. 365, op. 2, d. 1459, ll. 10-14.

<sup>543</sup> *Selected Works of Kim Il-sung* Vol. 5 (Pyongyang: Chosŏn Nodongdang Ch'ulp'ansa, 1960), pp. 1-34.

<sup>544</sup> RGAE, f. 365, op. 2, d. 1469, l. 168.

Ministry of Agriculture in water resource management from 1955 to 1957, offers a new understanding of how the Soviet agricultural mission served in the hosting country. Both specialists were invited to help complete the reconstruction of Anju irrigation system (AIS), or South Pyongan irrigation system that watered the field of 30,000 hectares in the region. As the largest irrigation system in North Korea, AIS was first conceived by Japanese colonial planners in 1919, though less than 20% of the whole system was built before 1945. The North Korean government's efforts to complete it came to naught by the devastating Korean War. The first stage of the reconstruction of AIS was done between September 1954 and May 1955, which dug up the seventy-km main canal (the total length of all the branches was 560 km), installed nine pump stations with Soviet equipment, and built a reservoir of 154 million cubic meters. These figures increased in the subsequent stage: the main canal (130 km) and branch canals (more than 780 km) grew in length. According to a Soviet document, North Korean planners mobilized more than 25,000 people in the reconstruction of AIS, including farmers, soldiers, students, office workers, public servants, and Chinese soldiers. The same report did not forget to mention that most of the works were done manually.<sup>545</sup>

These two Soviet hydraulic engineers Kruglov and Belikov assisted their North Korean counterparts by not only introducing advanced techniques, but also providing education opportunities. First, they made changes in the initial North Korean plans to economize resources. For example, Belikov suggested changes in both the tunnel construction and the concrete use that resulted in the reduction of thirty-four million won as well as the conservation

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<sup>545</sup> R. Karev, "Spravka (April 13, 1956)," RGAE, f. 365, op. 2, d. 1444, ll. 62-68. For a brief history of AIS, "the diary of comrade A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from September 12 to 30, 1960 (September 15-16, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 7, ll. 107-109.

of 150 tons of cement. By applying screens and diaphragms that were made of calcined clay, Belikov was also able to considerably decrease the spending of scarce materials such as cement. Second, these Soviet engineers helped North Korean workers accelerate the construction process. Belikov implemented small-scale mechanization to “liberate” workers’ hands. These on-site suggestions were implemented in coordination with geoengineering surveys that were carried by Kruglov. By January of 1956, Kruglov had a number of tours to AIS, while gathering specific information to draw up measures and recommendations for the chief North Korean engineer. Despite the lack of construction materials and qualified cadres to conduct geoengineering surveys, these Soviet experts took a role of the educator for North Korean specialists by introducing safety measures, organizing more efficient use of labor, and offering on-site seminars. Both Soviet experts also visited a number of relevant irrigation facilities, dams, and reservoirs across the country. While on tours, these experts gave practical consultation and offered seminars, sometimes without remuneration, to improve the qualification of North Korean hydraulic engineers. At the initiative of Kruglov, the Geology Department was first created in the Ministry of Agriculture in February 1956, which offered specialized courses in geology, hydrogeology, soil science, and methods for geoengineering research, not only in classrooms, but also in actual sites such as Ŏjidon irrigation system (Söhŭng Lake) in North Hwanghae Province and Kiyang irrigation system (Taesöng Lake) in South Pyongan Province. Occasionally, their lectures and seminars were translated into Korean for further use as the guidelines in the field.<sup>546</sup>

Thus, it is safe to say that throughout the 1950s the Soviet agricultural mission

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<sup>546</sup> Kruglov, “Otchet (October 24, 1957),” RGAE, f. 365, op. 2, d. 1469, ll. 79-97; Belikov, “Otchet,” RGAE, f. 365, op. 2, d. 1469, ll. 192-199.

provided practical advice that assisted the country's quest for increased agricultural production. Although the general influx of Soviet agrarian experts into North Korea gradually decreased starting in 1957, some important fields such as animal husbandry, bee farming, industrial crops (cotton and linen), and tractor repairs were largely helped by visiting Soviet experts until the very end of the 1950s. Unfortunately, it might be impossible to gauge, or quantify, such assistance. Rather, as I discuss in the section to follow, it would be more productive to trace how a Soviet scheme of collectivization was managed by the North Korean leadership after the completion of agricultural collectivization in the fall of 1958, which gives us a chance to critically examine the place of collectivized agriculture in the gradual rise of *Juche* as a long-lasting mode of development.

### ***Unfulfilled Dreams of White Rice with Beef Soup: Collectivized Agriculture in Perspective***

On September 3, 1958, *Rodong Shinmun* declared the victory of agricultural collectivization in North Korea. Han Chŏn-chong, North Korean Minister of Agriculture, proudly enumerated achievements the country made in the course of integrating a vast area of arable lands into a planned economy. Han emphasized that the victory was only possible, as the Party had provided both “scientific worldview” and advanced technology since the land reform of 1946. It was in this context, around the time of the completion of collectivization, that the catchphrase of “white rice with beef soup” that envisioned the affluent future of the country was allegedly stated by Kim Il-sung.<sup>547</sup> Although this North Korean dream did not come true, the history of

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<sup>547</sup> Kim Il-sung, *On the Victory of Socialist Agricultural Cooperativization in Our Country and the Future Development of Agricultural Economy*, p. 46; Sŏ Tong-man, *Puk Chosŏn sahoejuüi ch'eje sŏngnipsa, 1945-1961*, p. 709.

post-1958 agricultural situations in North Korea provides a new perspective on the place of collectivized agriculture inside the framework of the country’s development policy.

Table 4-3: National Trend of Agricultural Collectivization in North Korea

Date	No. of Cooperatives	Farming Households Collectivized (per cent)	Arable Lands Collectivized (per cent)
December 1953	806	1.2	0.6
December 1954	10,098	31.8	30.9
December 1955	12,132	49.0	48.6
December 1956	15,825	80.9	77.9
December 1957	16,032	95.6	93.7
September 3, 1958	10,309	98.6	99.1
October 31, 1958	3,843*	100	100

Source: Sō Tong-man, *Puk Chosŏn sahoejuŭi ch’uje sŏngnipsa, 1945-1961* (Seoul: Sŏnin, 2005), pp. 705-716; Cho Su-ryong, “Jaryeokgaengsaeng Economy,” p. 202.

Remarks: \* This figure reflects the merger of cooperatives into *li*-based administrative units, which was carried out in October 11-31, 1958.

Previous studies argued that after a series of higher-level party meetings, held in December 1955 and where the “Soviet faction” was criticized for the failure of agricultural policy, Kim Il-Sung’s pursuit of rapid collectivization faced no significant obstacles.<sup>548</sup> However, as I show earlier in this chapter through the examination of help provided by Soviet advisors in the first half of the 1950s, there were no meaningful forces that held in check Kim Il-sung’s collectivization project inside the North Korean leadership. Even amid the food crisis in early 1955, North Korean planners took measures to consolidate collectivized cooperatives

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<sup>548</sup> Cho Su-ryong, “Jaryeokgaengsaeng Economy,” pp. 159-164.

by increased ideological education, while propagandizing a determined vision that only collectivized agriculture could “guarantee the swift uplift of the country’s economy.”<sup>549</sup> Indeed, diplomatic representatives from people’s democracies were more or less shy of discussing hardships and difficulties that North Korea faced with the North Korean authorities.<sup>550</sup> The Soviet Embassy in Pyongyang was never able to make interventions in the country’s industrialization that was largely based on agricultural collectivization.<sup>551</sup>

Table 4-4: National Grain Production of North Korea in 1953-1965

Unit: 10,000 tons

Year	Compiled by Sō Tong-man	Compiled by the UN FAO*	Compiled by the author	
1953	232.7	n/a	n/a	
1954	223.0		n/a	
1955	234.0		234.3	
1956	287.3		287.0	
1957	320.1		320.0	
1958	370.0		343.7	
1959	340.0		340.0	
1960	380.3		380.3	
1961	483.0		358.3	370.0
1962	500.0		372.5	Less than 400.0

<sup>549</sup> The 3rd Meeting of the Political Committee Resolution (February 5, 1955), reprinted in *SBNK* 30, pp. 673-683.

<sup>550</sup> For example, the Polish ambassador was received by Kim Il-sung only once for his year-long service and the Hungarian ambassador was not able to talk about “mistakes” that North Korean leaders had perpetrated. “The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from July 25 to August 25, 1955 (July 29, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 7, ll. 42-43.

<sup>551</sup> “The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from July 25 to August 25, 1955 (July 30, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 7, ll. 43-45.

1963	500.0	405.4	Same as 1961
1964	That of 1963	421.2	
1965	n/a	370.7	

Source: Sō Tong-man, *Puk Chosōn sahoejuūi ch'eje sōngnipsa, 1945-1961* (Seoul: Sōnin, 2005), p. 745; Nam Sōng-uk, *Hyōndae pukhan ūi singnyangnan kwa hyōptongnongjang kaehyōk* (Paju: Hanul, 2016), p. 45; V. Makarov, “Obzor ekonomiki KNDR za 1956 god,” AVPRF, no archival signature, NIKH, tp. MU0000000907, scp. 050600449, l. 143; V. Makarov, “Obzor ekonomicheskogo razvitiya KNDR za 1957 god I (February 1958),” AVPRF, no archival signature, NIKH, tp. MU0000000559, scp. 050600269, l. 45; “Politicheskii otchet za 1959 god,” RGANI f. 5, op. 49, d. 257, l. 31; A. Puzanov, “Ekonomicheskoe i politicheskoe polozhenie Koreiskoi Narodno-Demokraticheskoi Respubliki (August 4, 1961),” RGANI, f. 5, op. 49, d. 452, l. 102; B. Pimenov, “O khode vypolneniya resheniy dekabr'skogo /1962 g./ plenuma TSK Trudovoy Partii Korei (July 10, 1963),” RGANI, f. 5, op. 49, d. 640, l. 296; “Obzor razvitiya ekonomiki KNDR za 1965 god (March 1966),” RGANI, f. 5, op. 49, d. 886, ll. 38-39.

Remarks: \* Securing membership in United Nations Food and Agricultural Organization (FAO) in 1977, the North Korean government presented the data to the FAO.

Overlapping with the early success of the country’s first Five-Year Plan (1957-1959), subsequent measures after the completion of agricultural collectivization in 1958-1959 show that North Korea’s agricultural development headed for the Green Revolution: based on the introduction of modern agricultural machine (*hyōndaejōk nonggigye*) and cutting-edge science

and technology (*ch'oesin kwahak kisul*) into agriculture,<sup>552</sup> Kim Il-sung set the important tasks to be carried out in the order of irrigation, mechanization,<sup>553</sup> electrification, and extensive use of chemicals (*hwahakhwa*).<sup>554</sup> In the September Plenum of 1958, follow-up measures to enlarge rice fields and irrigate dry fields were taken, which resulted in the building of 6,578 irrigation facilities in just five months, with the capacity to water 350,000 hectares. By the time of spring sowing in 1959, North Korea almost doubled the size of irrigated lands (800,000 hectares), compared to the previous year, which was three times more than the total size of lands irrigated during the 36 years of colonial rule. Subsequently, the area of sown lands increased.<sup>555</sup> The North Korean government also strived to increase the grain yield. A variety

<sup>552</sup> Ri Sang-chun and Chŏn pyŏng-sik eds., *Chosŏn hyŏngmyŏng suhaeng esŏ Kim Il-sŏng tongji e ũihan maksŭ-reninjuŭi ũi ch'angjojŏk chŏgyong*, p. 236.

<sup>553</sup> Hong Tal-sŏn and Shin Chae-ho, *Uri naraesŏ ũi nongch'on kyŏngni ũi kigyehwa* (Pyongyang: Kwahagwŏn Ch'ulp'ansa, 1961).

<sup>554</sup> Otherwise indicated, the source of this paragraph comes from the following Soviet reports. "Politicheskii otchet za 1958 god," RGANI f. 5, op. 49, d. 146, ll. 25-38; "Politicheskii otchet za 1959 god," RGANI f. 5, op. 49, d. 257, ll. 28-40.

<sup>555</sup> The following tables show the size of the total sown land as well as its distribution for different staples.

Unit: 1,000 hectares

	1949	1957	1958	1959	1964	1965
Total Lands Sown	2,386	2,556	2,746	2,429	-	-
Grains	2,112	2,255	2,264	1,656	2,400	2,350



of high-yield agricultural techniques including cold-bed seedlings and deep tillage were applied to half of all rice fields in 1958, compared to the 10% in the previous year. With the number of the MRS growing from fifty to seventy (in 1958) and eighty-four (in 1959),<sup>556</sup> North Korean

Industrial crops	106.9	54.6	131	260	185	186
Vegetables	45.6	76.5	80	119	185	210
Potatoes and Sweet Potatoes	119.8	158.7	214	144	165	165

Source: “Politicheskii otchet za 1958 god,” RGANI f. 5, op. 49, d. 146, l. 27; “Politicheskii otchet za 1959 god,” RGANI f. 5, op. 49, d. 257, ll. 29-30; “Obzor razvitiya ekonomiki KNDR za 1965 god (March 1966),” RGANI, f. 5, op. 49, d. 886, ll. 35-36.

Unit: 1,000 hectares

	1949	1957	1958	1959	1960	1961	1964	1965
Rice	382	501	504	480	500	520	685(45)	700(50)
Corns	282	759	826	478	780	930	910	880
Beans	322	391	449	300	-	500	615	570

Source: “Politicheskii otchet za 1958 god,” RGANI f. 5, op. 49, d. 146, l. 27; “Politicheskii otchet za 1959 god,” RGANI f. 5, op. 49, d. 257, ll. 29-30; A. Puzanov, “Ekonomicheskoe i politicheskoe polozhenie Koreiskoi Narodno-Demokraticheskoi Respubliki (August 4, 1961),” RGANI, f. 5, op. 49, d. 452, l. 103; “Obzor razvitiya ekonomiki KNDR za 1965 god (March 1966),” RGANI, f. 5, op. 49, d. 886, ll. 35-36.

<sup>556</sup> There were around 8,000 tractors (15 hp) that were imported from the Soviet Union, Poland, and

planners prepared to sell tractors and other farming machines to cooperatives that were economically strong. Consequently, the December Plenum of 1959 declared the phased mechanization of the country’s agriculture. Earlier that year, the June Plenum took measures to develop animal husbandry by repeated cultivation of corns, barley, and beans for fodder.<sup>557</sup> The production and consumption of mineral fertilizers also increased, along with the use of local, or organic, fertilizers.<sup>558</sup> Although these measures were conducive to the agricultural development, however, they alone were not sustainable enough to maintain the increased agricultural productivity.

Table 4-5: North Korea’s Wheat Import from the Soviet Union in 1959-1964

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Romania. “Politicheskii otchet za 1959 god,” RGANI f. 5, op. 49, d. 257, l. 36.

<sup>557</sup> “Meeting minutes with Nam Il, Minister of Foreign Affairs of the DPRK (July 1, 1959),” RGANI, f. 5, op. 49, d. 255, ll. 164-165.

<sup>558</sup> North Korea’s production of mineral fertilizers was as follows:

Unit: 1,000 tons

	1958	1959	1960	1962	1963	1964	1965
Mineral Fertilizers	456.9	391	561	779	853	750	712

Source: “Politicheskii otchet za 1958 god,” RGANI f. 5, op. 49, d. 146, l. 10; “Politicheskii otchet za 1959 god,” RGANI f. 5, op. 49, d. 257, l. 12; Yu. Ognev, “O sentyabr'skom plenum TsK Trudovoi Partii Korei 1963 goda /Spravka/ (September 17, 1963),” RGANI, f. 5, op. 49, d. 640, l. 339; “Obzor razvitiya ekonomiki KNDR za 1965 god (March 1966),” RGANI, f. 5, op. 49, d. 886, l. 26.

Unit: 1,000 tons

	1959	1960	1961	1962	1963	1964
Wheat	40.2	59.7	240	50	50.1	-

Source: N. Shiryayev, "Spravka (June 11, 1964)," RGANI, f. 5, op. 49, d. 904, ll. 44; 48.

Remarks: The volume of wheat exports for 1962 and 1963 respectively was suggested by the Soviet Union. In 1964, the Soviet Union had no wheat reserves to be exported, which resulted in the subsequent removal of three tons of gold from North Korea's trade with the Soviet Union.

In the post-collectivization 1950s, North Korea chronically suffered some economic issues that damaged the country's agriculture. First of all, weak economic planning capabilities hit the agricultural sector hardest. Inaccurate and excessively optimistic planning caused the 1959 food crisis, although its consequence was less acute than the 1955 food crisis. The sharp increase of 40% in the number of industrial workers in 1959, from 1.078 million to 1.514 million, was actually based on overestimated grain yields that were hardly possible to be achieved by decreased agricultural manpower. Also, the planned decrease in the size of sown fields was not offset by the expected increase of grain yields per hectare. In order to supply city dwellers with the food ration, North Korean planners had no choice but to import more than 300,000 tons of grains until May 1960.<sup>559</sup> Simultaneously, exploitative laws against agriculture were institutionalized that deprived its farmers of the incentive to work harder. In 1958, North Korea lowered the domestic price of food purchase, while continuing its ban on

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<sup>559</sup> 70% (210,000 tons) was from the Soviet Union. A. Puzanov, "Ob itogakh dekabr'skogo (1959 g.) plenuma TsK TPK (December 18, 1959)," RGANI f. 5, op. 49, d. 255, ll. 247-253; "Politicheskii otchet za 1959 god," RGANI f. 5, op. 49, d. 257, ll. 29-31; 38.

free trade of food from December 1957.<sup>560</sup> This meant the decreased income for agricultural producers. The Temporary Draft Statute of Agricultural Cooperatives that was published in *Rodong Shinmun* in November 28, 1958, decreased North Korean farmers' private gains by abolishing the private ownership of lands and expanding the ratio of communal funds that individual cooperative members could not access.<sup>561</sup> This Statute was approved by the Congress of Agricultural Cooperatives in January 1959, in which the implementation of technological and cultural revolutions in rural areas was announced. Still, North Korean farmers had to pay to the state various taxes, including tax-in-kind (grains, vegetables, potatoes, fruits, and industrial crops), payment-in-kind to use local MRSs, water, and fertilizers. Although Kim Il-sung promised that the ban on free trade of grains would be lifted after the monetary reform of 1959,<sup>562</sup> North Korean farmers were supposed to sell their grains only to their government at a lower price. Although the North Korean authorities lowered tax-in-kind

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<sup>560</sup> On average, the 1958 price for purchasing rice per kg was set at 56 won (66.7 won in 1957) and corn at 29 won (34.6 won in 1957). "Politicheskii otchet za 1958 god," RGANI f. 5, op. 49, d. 146, l. 32. The 1959 price for purchasing rice per 100 kg was set at 42 won. "Politicheskii otchet za 1959 god," RGANI f. 5, op. 49, d. 257, l. 37. Evidence suggests that the farmer's market was banned until September 1963. While we do not know the exact time when such markets were created in rural areas, grains were excluded in the list of allowed items to be transacted. Yu. Ognev, "O sentyabr'skom plenumе TsK Trudovoi Partii Korei 1963 goda /Spravka/ (September 17, 1963)," RGANI, f. 5, op. 49, d. 640, l. 341.

<sup>561</sup> "Politicheskii otchet za 1958 god," RGANI f. 5, op. 49, d. 146, ll. 37-38.

<sup>562</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from September 29 to October 17, 1958 (October 15, 1958)," AVPRF, f. 0102, op. 14, p. 75, d. 7, l. 65.

for agricultural cooperatives in early 1959, no confirming data on the increased income of the members of such cooperatives were given to the Soviet Embassy.<sup>563</sup>

Whereas previous studies pointed out the Chinese influence in the post-collectivization reorganization of the agricultural sector in North Korea,<sup>564</sup> the Soviet representative had an alternative view on such reforms carried out in the early 1960s. In the summer of 1961, the Soviet ambassador interpreted those reforms, including the creation of industrial committees and provincial economic committees and abolishing industrial Ministries, as the “successful application of Soviet experience”; known as Sovnarkhoz reforms, an attempt by Nikita Khrushchev to decentralize economic decision-making of the Soviet Union. The Ch’öngsalli methods, a system of economic management announced after Kim Il-sung visited Ch’öngsan agricultural cooperative in February 1960, were easy to understand by Soviet diplomats as an effective measure to link the Party with each local cooperative. Khrushchev also made similar visits to numerous production sites in the Soviet Union.<sup>565</sup> As North Korea did not organize “people’s communes” like in the PRC, but only integrated small, individual farming households into around 4,000 agricultural cooperatives, the Soviet ambassador concluded that

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<sup>563</sup> “Politicheskii otchet za 1959 god,” RGANI f. 5, op. 49, d. 257, ll. 36-38; 47.

<sup>564</sup> Sö Tong-man, *Puk Chosön sahoejuüi ch’eye söngnipisa, 1945-1961*, pp. 710-716; Cho Su-ryong, “Jaryeokgaengsaeng Economy,” pp. 202-209.

<sup>565</sup> In late 1961, Vasili P. Moskovskii, the future Soviet ambassador to the DPRK, visited North Korea for twenty days as a member of the Association of Soviet-North Korean Friendship. As for Kim Il-sung’s visit to numerous production places of the country, he wrote that Kim Il-sung appeared to have borrowed such “methods” of his leadership from Nikita Khrushchev. V. Moskovskii, “The Central Committee of the CPSU (November 27, 1961),” RGANI, f. 5, op. 49, d. 450, l. 114.

North Korea “successfully adopted advanced experience” of the Soviet Union and other fraternal countries.<sup>566</sup> Asking whether North Korea’s agricultural transformation was a brainchild of either the PRC or the Soviet Union is not productive. Rather, it is more productive to assume that North Korean planners strived to justify Kim Il-sung’s development strategy in the name of the “creative application of Marxism-Leninism.” That is, North Korea repeated the particularly Soviet—Stalinist—scheme of exploiting collectivized agriculture as the main source to supply an industrializing state.<sup>567</sup>

Reconstructing how North Korean farmers lived in the period of consolidating the socialist cooperative management after 1958 is extremely difficult, mainly due to the lack of reliable source materials. For example, North Korean media ceased to report any act of resistance of North Korean farmers against collectivization after May 1957.<sup>568</sup> But, it does not mean that North Korean farmers only conformed to the state. Rather, as fragmented Soviet documents show, it seems that the North Korean state in the early 1960s took a moderate approach to encourage farmers to work harder. According to the Soviet ambassador in late 1963, complaints about the country’s destitute situations often appeared in media from rural areas, which showed that “ideological indoctrination” was only poorly carried out among peasants.<sup>569</sup> It implies that North Korea in the early 1960s could not efficiently project its will

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<sup>566</sup> A. Puzanov, “Ekonomicheskoe i politicheskoe polozhenie Koreiskoi Narodno-Demokraticheskoi Respubliki (August 4, 1961),” RGANI, f. 5, op. 49, d. 452, ll. 112-113; 129.

<sup>567</sup> Ri Sang-chun and Chŏn pyŏng-sik eds., *Chosŏn hyŏngmyŏng suhaeng esŏ Kim Il-sŏng tongji e ūihan maksŭ-reninjuŭi ūi ch'angjojŏk chŏgyong* (Pyongyang: Kwahagwŏn Ch’ulp’ansa, 1962), p. 235.

<sup>568</sup> Sŏ Tong-man, *Puk Chosŏn sahoejuŭi ch’eje sŏngnipsa, 1945-1961*, pp. 700-705

<sup>569</sup> RGANI, f. 5, op. 49, d. 904, l. 32.

to its farmers. Moreover, it would be closer to the truth that ordinary North Koreans might have felt fatigue at the circumstances that simply contradicted ongoing propaganda, regardless of the authorities' constant emphasis on the importance of ideological transformation and an austere lifestyle.<sup>570</sup> The Soviet Embassy in North Korea estimated the living standards of North Korean workers in 1963 as extremely low, though slightly higher than those in the PRC and North Vietnam.<sup>571</sup> Meanwhile, the food situation for North Korean farmers in the first half of 1960s might have been better, compared to the country's industrial and office workers, because they had direct access to agricultural produces. North Korean leadership constantly demanded farmers follow the Party's guidance without having enough material resources to offer to them as material incentives. Hence, it was a very difficult task for Kim Il-sung to increase the grain yield beyond the planned quota to sustain his ambitious project of building a "self-reliant" and strong planned economy.

However, Kim Il-sung chose to propagandize collectivism in the agricultural sector not by putting more resources, but by prioritizing ideological struggles against "old, capitalist thoughts." In early 1963, the Soviet Embassy characterized such an ideology-centric measure as "convulsions that periodically lead to a slowdown and adversely affect the planned

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<sup>570</sup> "Meeting minutes (January 23, 1963)," RGANI, f. 5, op. 49, d. 640, l. 36.

<sup>571</sup> The ration card system was maintained for grains and cotton fabrics. B. Pimenov, "O khode vpolneniya resheniy dekabr'skogo /1962 g./ plenuma TSK Trudovoy Partii Korei (July 10, 1963)," RGANI, f. 5, op. 49, d. 640, l. 295. The annual production of nutritional products per capita in 1963 was as follows: meat (11 kg), vegetable oil (3 kg), and soy sauce and bean paste (25 kg). Animal fat and milk were extremely insufficient. Yu. Ognev, "O sentyabr'skom plenum TsK Trudovoi Partii Korei 1963 goda /Spravka/ (September 17, 1963)," RGANI, f. 5, op. 49, d. 640, l. 341.

development of socialist production.”<sup>572</sup> Later that year, from the perspective of the Soviet representative, North Korean leaders’ “nationalistic and leftist errors” already slowed down the pace of socialist construction.<sup>573</sup> However, North Korean planners continued to articulate strategies to develop agriculture based on ideological engineering. In February 1964, Kim Il-sung published his own thesis on socialist agricultural problems,<sup>574</sup> which was followed in the following month by legal measures to write off tax-in-kind among agricultural cooperatives for the period from 1964 to 1966.<sup>575</sup> In June, the Korean Agricultural Workers’ Union (KAWU) was created in order to strengthen mobilization campaigns to help farm works. By late February 1965, the KAWU had more than 2.8 million members, including farmers, laborers, agrarian experts, and office workers.<sup>576</sup> The short-term result of frequent mobilization campaigns that were carried out by city dwellers to provide assistance to rural areas was satisfactory: one-million-strong helpers contributed to the rapid completion of the spring sowing by late June in

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<sup>572</sup> N. Shubnikov, O dekabr’skom plenum TsK Trudovoi Partii Korei /Spravka/ (January 25, 1963) RGANI, f. 5, op. 49, d. 640, l. 112.

<sup>573</sup> Yu. Ognev, “O sentyabr’skom plenum TsK Trudovoi Partii Korei 1963 goda /Spravka/ (September 17, 1963),” RGANI, f. 5, op. 49, d. 640, l. 342.

<sup>574</sup> Kim Il-sung, *Uri nara sahoejuüi nongch’on munje e kwan han t’eje* [A Thesis on Socialist Agricultural Problems of Our Country] (Pyongyang: Chosön Rodongdang Ch’ulp’ansa, 1964).

<sup>575</sup> Marina E. Trigubenko, *Selo’skoe khozyaistvo KNDR: put’ sotsialisticheskogo rasvitiya* (Moscow: Nauka, 1973), pp. 83-85.

<sup>576</sup> According to a Soviet source, the Korean Agricultural Workers’ Union played an important role in North Korea’s agriculture, having around five million relevant workers as members by February 1972. Marina E. Trigubenko, *Selo’skoe khozyaistvo KNDR*, p. 88.



1965. These campaigners worked for the total of 16.5 million man-days, which caused the distraction for these workers from conducting their primary tasks. As historian Byun Hak-moon rightly points out, these campaigns that were designed to boost production turned out to be detrimental to the stable operation of many production sites, which plagued North Korea throughout the 1960s.<sup>577</sup> Meanwhile, the “technological revolution” in the agricultural sector continued: the size of irrigated lands, the number of MRSs (173 in 1965) and tractors (21,800 in 15 hp), the volume of nitrogen-based mineral fertilizers, and the area of electrified agricultural households (81% of the total farming households) increased, if gradually.<sup>578</sup>

By adhering to the principle of “self-reliance” in the agricultural sector to carry out its own Green Revolution, North Korean planners created a specific mechanism to develop agriculture, which was praised by the country’s media as a “creative application” of the Soviet collectivization scheme to North Korean soils. In this developmentalist scheme, uplifting agriculture was seen as a matter of ideological education more than material investment, or engagement with the Second World, both of which were very much costly. From Kim Il-sung’s perspective in the 1960s, North Korean farmers should be transformed into industrial workers, who could truly understand their roles and importance to build communism in North Korea. In reality, however, various issues remained that stagnated agricultural production in times to

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<sup>577</sup> Byun Hak-moon, “Pukhan ūi kisul hyŏngmyŏngnon: 1960-70nyŏndae sasang hyŏngmyŏng kwa kisul hyŏngmyŏng ūi pyŏnghaeng” [The Technical Revolution Theory of North Korea: Simultaneous Pursuit of the Ideological and Technical Revolutions in the 1960s and 1970s] (in Korean) (PhD Diss., Seoul National University, 2015), pp. 78-84.

<sup>578</sup> “Obzor razvitiya ekonomiki KNDR za 1965 god (March 1966),” RGANI, f. 5, op. 49, d. 886, ll. 34-35; 37-38; 42-43.

come, which, in turn, drove the North Korean leadership to find the reasons from the lack of ideological education.

## Chapter Five: Making Healthy Socialism by Exploiting Cooperation

This chapter examines various interactions between the Democratic People's Republic of Korea (DPRK, North Korea) and the socialist bloc in the 1950s with a focus on the fields of medicine, health, and hygiene, and how those previously underexplored engagements contributed to the creation of North Korea's preventive medicine (*yebang ūihak*) and infection prevention system (*pangyŏk ch'egye*), both of which became crucial parts of what would later be termed *Juche* medicine in the early 1980s. This chapter discusses North Korea's shift of focus in the 1950s towards the creation of the self-reliant system of medicine and health from the previous case of expanding the country's participation in international medical activities. By analyzing medical, health, and hygienic circumstances of North Korea in the 1950s, I argue that the country's economic inability drove its leadership to reduce the scale of medical exchanges with the bloc countries, especially the Soviet Union. North Korea's weak economy also played a significant role in making North Korean planners to find alternatives in the fields of health and medicine. One of these manifestations was the rise of the Ponghan School in the early 1960s,<sup>579</sup> which was supported by Kim Il-sung's urge in the second half of the 1950s to

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<sup>579</sup> Following the name of its creator, Kim Pong-han (1916-1966?), biologist, the Ponghan School is a theory that proposes the presence of a system of pathways which form a basis for acupuncture points and meridians. Although an examination of the history of the Ponghan School lies beyond the scope of this chapter, it was popularized in the early 1960s as the most outstanding achievement of North Korea's science and technology. However, the discussion of this Ponghan School became completely muted in North Korean media in 1966. Kim Geun Bae, "Kwahak kwa ideollogi ūi saiesŏ: puk'an 'ponghanhaksŏl' ūi puch'im" [Between Science and Ideology: The Rise and Fall of Bong Han Theory in 1960s North

rediscover “outstanding achievements” from its past, or traditional Korean medicine.

Compared to a growing body of scholarship on the history of medicine and health of modern China,<sup>580</sup> modern Korea’s medical past has been studied only partially in the English-language academy.<sup>581</sup> In general, not much has been studied about the history of medicine and health of North Korea. Meanwhile, South Korean researchers examine medical history of North Korea in the 1940s and 1950, drawing mostly upon North Korean publications.<sup>582</sup> However,

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Korea] (in Korean), *Han'guk kwahaksa hakhoeji* [The Korean Journal for the History of Science] 21:2 (1999), pp. 194-220; Shin Dong-won, “1960nyōndae ihu puk'an hanūihak ūi pyōnch'ōn kwa sōnggyōk” [Evolution of Traditional Medicine in North Korea Since 1960] (in Korean), *The Korean Journal for the History of Science* 25:1 (2003), pp. 1-20. Meanwhile, the debate on whether this theory was valid, or simply another type of pseudo-science supported by the North Korean regime, is still ongoing.

<sup>580</sup> Ruth Rogaski, *Hygienic Modernity: Meanings of Health and Disease in Treaty-Port China* (Berkeley and Los Angeles: University of California Press, 2004); Mary A. Brazelton, *Mass Vaccination: Citizens' Bodies and State Power in Modern China* (Ithaca: Cornell University Press, 2019); Wayne Soon, *Global Medicine in China: A Diasporic History* (Stanford: Stanford University Press, 2020); Xiaoping Fang, *China and the Cholera Pandemic: Restructuring Society Under Mao* (Pittsburgh: University of Pittsburgh Press, 2021).

<sup>581</sup> John DiMoia, *Reconstructing Bodies: Biomedicine, Health, and Nation-Building in South Korea Since 1945* (Stanford: Stanford University Press, 2013); Soyoung Suh, *Naming the Local: Medicine, Language, and Identity in Korea since the Fifteenth Century* (Cambridge: Harvard University Press, 2017). Also, see Chapter Eight of Kyung Moon Hwang, *Rationalizing Korea: The Rise of the Modern State, 1894–1945* (Oakland: University of California Press, 2016).

<sup>582</sup> Jin-hyouk Kim, “Puk'an chōnyōmbyōngsa yōn'gu(1945-2000)” [History of Epidemics in North Korea, 1945-2000] (in Korean), *Yōnse ūisahak* [Yonsei Journal of Medical History] 20:2 (2017), pp.

their works seem to risk reproducing the very same information that North Korean publications hoped to present to the broader audience, due to a lack of source materials that can verify those North Korean claims. This trend of relying solely upon North Korean sources to study the country's medical and hygienic past appears to be continuing.

Moving away this practice, I analyze a wide range of Soviet archival sources to reconstruct North Korean realities in medicine, health, and hygiene in the 1950s. From the liberation of 1945, North Korean planners aimed to build the health system on the model of that of the Soviet Union. During and after the Korean War, North Korean leaders saw it important to obtain advanced medical science and technology from the Soviet Union.<sup>583</sup> At the same time, the volume of free medical aid decreased, while the price to be paid by North Korea to participate in the socialist networks of techno-science as well as to purchase medications soared. This crucial episode of North Korea's history of medicine and health has

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65-87; Sang-ik Hwang, *1950nyŏndae sahoejuŭi kŏnsŏlgi ŭi pukhan pogŏnŭiryŏ* [North Korean Health Care in the Construction Period of Socialism in the 1950s] (Seoul: Seoul National University Press, 2006).

<sup>583</sup> Ri Ho-rim, "Haebang hu 10nyŏn kan ŭi Ssobet'ŭ ŭihak toip esŏ ŭi sŏnggwa wa Konghwaguk ŭihak haksul saŏp ŭi paljŏn" [The Achievement of Introducing Soviet Medicine and the Progress of the Republic's Medical Science in the Post-Liberation Decade], *Chosŏn Ŭihak* [Korean Medicine] 8 (August 1955), pp. 14-21; Chŏn Shi-ŭn, "Sŏnjin ŭihak kisul ŭl toip hamyŏ uri ŭi sŏnggwa wa kyŏnghŏm ŭl pogŭp ch'egyehwa hayŏ ŭihak kwahak yŏn'gu saŏp ŭl kaesŏn kanghwa haja" [Let Us Improve and Strengthen Research Works of Medical Science by Distributing and Systematizing Our Achievement and Experience while Introducing Advanced Medical Technology], *Korean Medicine* 4 (July 1959), pp. 1-4.

remained unexplored. In what contexts did North Korea choose to be “self-reliant” to build medical infrastructure, train medical experts, and make healthy citizens, all of which were essential for building North Korean socialism?

Before getting into the details, it is necessary to note the issue of numbers and figures in North Korean publications. On the topic on medicine and health, North Korea in 1962 first published the *actual* numbers of medical assets, including doctors, hospitals, and beds in *Korean Central Yearbook* (KCY, *Chosŏn Chungang Nyŏn’gam*), the country’s most informative almanac.<sup>584</sup> Before 1962, relevant information appeared almost only in a relative term, or percentage terms, in order to give an image of rapid growth of such assets compared to the past. To make matters worse, there is no way to tell the exact number of certain categories, which was contained in the aforementioned *KCY*; for example, there is only the combined number of doctors (*ũisa*) and paramedics (*chunũi*; Rus. *fel'dsher*), which makes it hard for scholars to figure out how many doctors and paramedics North Korea had in a certain year.

As the table below shows, however, I was able to figure out the number of North Korean doctors, hospitals, and beds for inpatients in the period from 1949 to 1959, based on Soviet archival sources. These figures that were reported to Soviet diplomatic and medical missions by the North Korean medical authorities seem to be reliable since the main target audience for those figures was Moscow that was expected to use the information in making its aid policy towards North Korea. The North Korean authorities in the period of 1949-1959 had comparatively less incentives to hand in exaggerated medical information to the Soviets than in the 1960s. These circumstances makes it safe to regard the numbers in Table 5-1 as the most

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<sup>584</sup> *Chosŏn Chungang Nyŏn’gam* (1961) (Pyongyang: Chosŏn Chungang T’ongsinsa, 1962), p. 354. Hwang Sang-ik, *1950nyŏndae sahoejuũi kŏnsŏlgi ūi pukhan pogŏnũiryŏ*, pp. 92-95.

closest to the truth until North Korean archives open their doors in the future.

Table 5-1: Some Important Figures in North Korea's Medicine and Health in 1949-1959

Numbers	1949	1950	1951	1952	1954	1956	1957	1958	1959
Doctors	1,074	1,147	442	581	n/a	1,175	1,320	2,080	2,559
Doctors and Paramedics*	2,131	n/a	n/a	n/a	n/a	5,650	n/a	n/a	9,034
Hospitals**	175	192	153	179	n/a	313	327	n/a	410
Inpatient Beds***	6,630	7,355	5,276	10,215	15,802	18,104	20,041	n/a	29,985

Source: “10-letniy plan razvitiya meditsinskoy nauki v Koreyskoy narodnoy demokraticheskoy respubliki 1957-1966 gg. (December 1957),” GARF, f. 8009, op. 34, d. 366, l. 73; N.I. Malov, “O sostoyanii zdavookhraneniya v KNDR /Spravka/ (June 1953),” AVPRF, no archival signature, NIHK, tp. MU0000000554, scp. 050600239, ll. 96; 102; “Obzor ekonomicheskogo razvitiya KNDR za 1957 god II (February 1958),” AVPRF, no archival signature, NIKH, tp. MU0000000559, scp. 050600270, l. 213; “Osnovnye pokazateli (April 27, 1955),” RGANI, f. 5, op. 28, d. 315, l. 215; “Politicheskii otchet za 1958 god,” RGANI f. 5, op. 49, d. 146, l. 59; “Politicheskii otchet za 1959 god,” RGANI f. 5, op. 49, d. 257, l. 64; *Chosŏn chungang nyŏn'gam (1961)* (Pyongyang: Chosŏn Chungang T'ongsinsa, 1962), p. 354.

Remarks: \* For this column, I cite the information from the *Korean Central Yearbook (KCY)* for 1961.

\*\* The information from the *KCY* for 1961 matches the data that were recorded in Soviet documents for 1949 and 1956. The number of hospitals for 1959 is cited from the *KCY* for 1961.

\*\*\* The number of inpatient beds for 1949 does not include the beds in sanatorium

### ***Long Shadow of U.S. “Indiscriminate” Bombing on North Korean Health***

The Korean War left an indelible mark in North Korean health. The magnitude of the effects and legacies of the U.S. bombings during the Korean War lies beyond one’s imagination. However, previous studies estimate that the war obliterated North Korea’s industrial infrastructure as well as population by 15%.<sup>585</sup> This calculation does not seem to be an overstatement given that the State Planning Committee (SPC) of the DPRK assessed in June 1953 the number of the population at 7.4 million, compared to the pre-war figure of 9.37 million (both figures did not include the number of soldiers).<sup>586</sup> This high degree of destruction in the Korean War is a starting point of my discussion in this chapter. It took around a decade for North Koreans to overcome the disastrous consequences of the war that included living in unsanitary places—dugouts—and the lack of medical infrastructure, which in turn increased the chance of exposure to harmful vectors such as pathogens and parasites.

In the first year of the Korean War from June 1950 to July 1951, North Korea’s medical infrastructure suffered the most. One Soviet document assessed that 41% of the total value in both state and private sectors was damaged by January 1, 1951.<sup>587</sup> The losses of medical

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<sup>585</sup> Yi Shin-ch’öl, “Ch’önjaeng p’ihae wa Chosŏn minjujuŭi inmin konghwaguk sahoe ŭi pyŏnhwa” [The War Damage and the Change of Society of the Democratic People’s Republic of Korea] (in Korean), *Yŏksa munje yŏn’gu* [Research of Historical Problems] 6 (June 2001), pp. 111-146.

<sup>586</sup> N.I. Malov, “O sostoyanii zdravookhraneniya v KNDR /Spravka/ (June 1953),” AVPRF, no archival signature, NIHK, tp. MU0000000554, scp. 050600239, l. 123.

<sup>587</sup> “To Comrade G.I. Tunkin, the chief of the first Far Eastern department, the Ministry of Foreign Affairs of the USSR from V. Ivanenko, counselor of the Soviet Embassy in the DPRK (June 06, 1951).” AVPRF, f. 0102, op. 7, p. 32, d. 64, l. 7.



infrastructure, including hospitals, clinics, and medical enterprises, by U.S. bombardment in terms of the North Korean currency were indicative: out of total 1.76 billion won, roughly 65%, or 1.126 billion won, was completely destroyed in 1950 alone, which was followed by the loss in 1951 (20%, or 361 million won) and 1952 (15%, or 267 million won) respectively. By the end of 1952, 1,204 medical establishments were destroyed, which had the total space of 361,117 square meters.<sup>588</sup> In March 1954, one Soviet diplomatic document cited the North Korean SPC to tally up the number of deaths by American bombings at 282,000.<sup>589</sup> Later in 1957, the North Korean SPC summarized the breathtaking scale of destruction by American bombings on the country: residential buildings of 28 million square meters, roughly 5,000 schools, and around 1,000 hospitals and outpatient clinics turned into ashes.<sup>590</sup>

According to historian Kim Tae-woo [Kim T'ae-u], the U.S. bombarded North Korea almost on a daily basis throughout the Korean War. In early November 1950, General Douglas MacArthur ordered indiscriminate bombings of “[e]very installation, facility and village in North Korea,” which was his response to the entry of the Chinese People’s Volunteer Army in the previous month. His decision reversed the previous bombing policy that was called

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<sup>588</sup> N.I. Malov, “O sostoyanii zdravookhraneniya v KNDR /Spravka/ (June 1953),” AVPRF, no archival signature, NIHK, tp. MU0000000554, scp. 050600239, l. 101. One North Korean document suggests that 95.64% of the country’s medical and health facilities was “completely destroyed” during the Korean War. “Widaehan paeryö ūi sönggwa” [The Outcome of Great Considerations], *Korean Medicine* 8 (August 1955), p. 3.

<sup>589</sup> “Obshchiye razmery ushcherba, nanesennogo narodnomu khozyaystvu KNDR za period voyny 1950-1953 g.g.,” AVPRF, f. 0102, op. 10, p. 57, d. 49, l. 31.

<sup>590</sup> *Rodong Shinmun* February 24, 1957.

“precision bombing.” It was this changed policy termed the “scorched-earth policy” by George E. Stratemeyer, the then-commander of the U.S. Far East Air Forces (FEAF), virtually erased most of the North Korean cities. By the end of the Korean War in mid-1953, one FEAF report assessed the degree of devastation by aerial bombing as follows:

Table 5-2: The List of North Korean Cities Destroyed by U.S. bombing in the Korean War

Range of Destruction (%)	North Korean Cities Destroyed
100	Kunuri, Sinanju
90-99	Hwangju (97), Sariwŏn (95), Sunan (90)
80-89	Chinnamp’o (80), Hamhŭng (80), Hŭngnam (85), Kyomip’o (80), Wŏnsan (80)
70-79	Haechu (75), Pyongyang (75)
60-69	Ch’ŏngjin (65), Kanggye (60),

Source: Kim Taewoo, “LIMITED WAR, UNLIMITED TARGETS: U.S. Air Force Bombing of North Korea during the Korean War, 1950–1953,” *Critical Asian Studies* 44:3 (2012), p. 488.

The majority of the North Korean people began to live in underground “shelters,” or dugouts, which continued at least in the late 1950s.<sup>591</sup> Originally, dugouts were regarded as a primitive “air defense measure” by the North Korean leadership.<sup>592</sup> Subsequently, North Korean planners worried about sanitary situations that were to be exacerbated by the facts that the human corpses and animal carcasses were not adequately buried and that a number of

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<sup>591</sup> Okonishnikov, “O meropriyatiyakh TPK i pravitel'stva KNDR po povysheniyu zhiznennogo urovnya naseleniya /Spravka/ (June 27, 1956),” AVPRF, no archival signature, NIKH, tp. MU0000000902, scp. 050600418, l. 16.

<sup>592</sup> The DPRK Military Committee Order, no. 39 (August 01, 1950) reprinted in *SBNK* 23, pp. 439-440.

refugees roamed around, making it easy to spread infectious diseases.<sup>593</sup>

In order to fight infectious diseases, North Korean planners established the State Emergency Infection Prevention Committee (*Kukka pisang pangyŏk wiwŏnhoe*) to coordinate preventive measures of the wartime country in January 1951.<sup>594</sup> Similar follow-up measures were taken in May, with a focus on staving off specific infectious diseases.<sup>595</sup> However, these measures were not efficient enough to prevent typhoid and relapsing fever.<sup>596</sup> In 1952, mass vaccination campaigns were carried out by the country's medical authorities against cholera, typhoid, dysentery (7,624,164 shots administered), and plague (4,893,494 shots administered), in addition to revaccination (7,016,783 shots administered). According to a Soviet document that was written by a Soviet advisor to the North Korean Ministry of Health, these wartime health campaigns were partially successful to substantially lower both incidence and mortality of typhoid fever and typhus.<sup>597</sup>

The war also affected the minds of the North Korean people. Completely silenced in

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<sup>593</sup> The DPRK Cabinet Decision, no. 193 (January 13, 1951) reprinted in *SBNK* 24, pp. 6-7.

<sup>594</sup> The DPRK Military Committee Order, no. 113 (January 24, 1951) reprinted in *SBNK* 24, pp. 28-29.

<sup>595</sup> The list of mentioned diseases included typhus, relapsing fever, typhoid, dysentery, smallpox, cholera, and plague. The DPRK Military Committee Order, no. 148 (May 31, 1951) reprinted in *SBNK* 24, pp. 203-208. The Order clearly stipulated that cholera and pest did not exist in North Korea.

<sup>596</sup> The DPRK Military Committee Order, no. 170 (September 15, 1951) reprinted in *SBNK* 24, pp. 359-361.

<sup>597</sup> N.I. Malov, "O sostoyanii zdravookhraneniya v KNDR /Spravka/ (June 1953)," AVPRF, no archival signature, NIHK, tp. MU0000000554, scp. 050600239, ll. 115-117. For a North Korean account, see "The Outcome of Great Considerations," *Korean Medicine* 8 (August 1955), pp. 3-4.

the official North Korean narrative that only emphasizes that the nation “majestically” arose from the ashes of the war, U.S. bombings and sweeping unsanitary conditions seemed to have inflicted a high degree of damage to the population’s mental health. According to one Soviet document, schizophrenia, neurosis, and hysteria were widespread in post-war North Korean society, as indicated by the fact that 40% of all inpatients of a psychiatric hospital were diagnosed as schizophrenia.<sup>598</sup> A “considerable growth” of neurosis and hysteria was not hard to see until the first half of 1954, as suggested in the same document. Interestingly, the North Korean medical authorities based their pathological understanding on Alexei. N. Chistovich, Soviet epidemiologist, who argued that mental illnesses could occur through infectious diseases. Given that the estimated incidence of neurosis among North Korean workers from 1954 to 1956 was “still quite high,” it was inevitable for North Korean planners in the post-war 1950s to concentrate on fighting against unsanitary conditions.

### ***North Korean Reception of Socialist Medical Aid in the Wake of the War***

While previous studies partially examined the scope and volume of humanitarian aid that was offered by the Soviet-led socialist bloc to wartime as well as post-war North Korea,<sup>599</sup> how

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<sup>598</sup> “10-letniy plan razvitiya meditsinskoy nauki v Koreyskoy narodnoy demokraticheskoy respubliki 1957-1966 gg. (December 1957),” GARF, f. 8009, op. 34, d. 366, ll. 41-43.

<sup>599</sup> Natalia Bazhanova, *Vneshne-ekonomicheskie svyazi KNDR: V poiskakh vykhoda iz tupika* (Moscow: Nauka, 1993); Avram A. Agov, “North Korea in the Socialist World: Integration and Divergence, 1945-1970. The Crossroads of Politics and Economic” (PhD Diss., The University of British Columbia, 2010); Young-Sun Hong, *Cold War Germany, the Third World, and the Global Humanitarian Regime* (New York: Cambridge University Press, 2015).

the involved actors—planners, diplomats, and experts—of both the giving and the given actually perceived such help has not been previously studied. Although such assistance substantially contributed to the making of the North Korean health system throughout the 1950s,<sup>600</sup> it was not always a “fraternal” act from the perspective of North Koreans, an important point to be explored in this section. Some Eastern European diplomats shared their frank opinions only with their Soviet counterparts regarding North Korea’s medical and health situations, which was to be interpreted by North Korean planners as uncomfortable and sometimes disdainful.

Assistance in the fields of medicine and health given to North Korea throughout the 1950s comprised bilateral dispatch of medical experts, sending equipment and medicines, caring North Korean orphans during and after the Korean War, and the transfer of medical infrastructure such as hospitals to the North Korean government (the latter was carried out in 1957). Despite some cases of non-bloc countries’ medical help to North Korea,<sup>601</sup> it was

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<sup>600</sup> V. Nemchinov, “Pomoshch’ narodov stran narodnoy demokratii boryushchemusya koreyskomu narodu /Spravka/ (April 1953),” AVPRF, no archival signature, NIHK, tp. MU0000000554, scp. 050600241, ll. 1-10. Some of the contents of “humanitarian aid” could be found in the following North Korean publication. See Munhwa Sŏnjŏnsŏng, *Ssoryŏn ŭl wishihan chŏn segye p’yŏnghw aaeho inmindŭl ŭi wŏnjo wa sŏngwŏn* (Pyongyang: Kungnip Ch’ulp’ansa, 1951).

<sup>601</sup> In March 1955, the Swiss government through its minister in Beijing informed that the country decided to allocate 50,000 Chinese yuan at the new rate to help North Korea purchase Swiss-made medicines. North Korean planners reviewed and accepted it, considering that the rejection of this help might cause negative influence in the Neutral Nations’ Supervisory Commission for Armistice, in which Swiss was an important part. “The diary of S.P. Suzdalev, the Soviet Ambassador to the DPRK, from

cooperation with the Soviet-led socialist bloc, which largely facilitated both the reconstruction and consolidation of the North Korean system of medicine and health.

Preoccupied with concluding the Korean War, North Korean planners in 1953 might have felt additional burden to observe diplomatic protocols, when they received and sent off medical staffs, important parts of medical assistance. Here, assistance from Romania gives a good example. In July 5, 1953, a reception was held in Pyongyang to send off the third group of Romanian medical staffs and receive the fourth group that comprised thirty-six persons including fifteen doctors. The North Korean government sent a Vice Premier of the cabinet (*naegak pususang*) and a Vice Minister of Foreign Affairs along with other high-profile officials from the Ministries of Foreign Affairs and Health to receive the Romanian medical team.<sup>602</sup> That is, North Korean politicians at a ministerial level were supposed to show how grateful the nation was by attending a number of receptions, ceremonies, and domestic tours to medical facilities, which cost a good deal of time and money that North Korea always lacked. However, medical help from Romania was too important to be dismissed. Romanian medical facilities inside the DPRK provided training opportunities to North Korean medical personnel, including doctors, paramedics, and nurses.<sup>603</sup>

Likewise, there existed a variety of sources in medical assistance which could raise discontents and tension between the giving and the given. One such cause for tension was closely related to grievance and hardships, felt by medical personnel from the bloc countries,

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March 12 to April 16, 1955 (March 25, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 7, l. 26.

<sup>602</sup> “Dokladnaya zapiska (July 5, 1953),” AVPRF, f. 0102, op. 9, p. 44, d. 9, ll. 112-113.

<sup>603</sup> “The diary of S.P. Suzdalev, the Soviet Chargé d'affaires in the DPRK, from June 1 to July 2, 1953 (June 23, 1953),” AVPRF, f. 0102, op. 9, p. 44, d. 9, ll. 67-68.

when they worked with North Korean counterparts. For example, the Romanian ambassador complained to the Soviet ambassador in May 1953 that medical equipment and materials that were sent from Romania were “handled poorly” by North Korean staffs in a Romanian hospital. According to him, North Korean staffs’ careless handling made valuable equipment “out of the order” very quickly. Also, he continued, the North Korean government was indifferent to the issue of providing conveniences to not only patients, but also Romanian medical staffs. Romanian workers in that hospital reported the issue to the persons in charge, which resulted in a planned visit of Ch’oe Ch’ang-ik, a Vice Premier, and Ri Byōng-nam, Minister of Health for inspection in the near future.<sup>604</sup>

Some diplomats in Pyongyang were eager to point out to the Soviet ambassador the scale of their own medical contributions, requesting the recognition on their own shares of shouldering the burden to help North Korea. Unlike the Polish ambassador, who simply mentioned to the Soviet ambassador that Poland by the first half of 1953 had received 1,000 Korean orphans and sent a field hospital to North Korea,<sup>605</sup> the Romanian ambassador proudly praised how his home country took good care of North Korean orphans. The Romanian ambassador continued that since his government “took great care” of the North Korean children, the North Korean government had requested to send 220 more orphans to Romania. The Romanian ambassador did not fail to mention that it was the Romanian government that paid

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<sup>604</sup> “The diary of S.P. Suzdalev, the Soviet Chargé d'affaires in the DPRK, from April 4 to May 12, 1953 (May 11, 1953),” AVPRF, f. 0102, op. 9, p. 44, d. 9, ll. 28-29.

<sup>605</sup> “The diary of S.P. Suzdalev, the Soviet Chargé d'affaires in the DPRK, from June 1 to July 2, 1953 (June 3, 1953),” AVPRF, f. 0102, op. 9, p. 44, d. 9, l. 58.

for all of the costs to look after North Korean orphans so far.<sup>606</sup>

A substantial part of medical infrastructure in North Korea was built or sustained with the socialist bloc's assistance. Most of the buildings that were used or intended for hospitals were prefabricated and usually located underground during and right after the Korean War. Since construction materials were inadequate in terms of both quality and quantity in wartime North Korea, the bloc countries had no choice but to deliver prefabricated buildings that were almost two times expensive than to build in the country.<sup>607</sup> As a Polish case shows, which around 8% (26 million zloty out of 336 million zloty) of the total amount of help given to North Korea was spent to support the Polish hospital in the DPRK for three years,<sup>608</sup> medical aid took a considerable portion of such assistance. In November 1954, the Bulgarian ambassador told a Soviet diplomat that other than help—material as well as technical—in the amount of twenty million rubles that Bulgaria was scheduled to deliver in 1954-1955, the size of Bulgarian medical help comprised seventy-six medical staffs who served in North Korean medical institutions.<sup>609</sup>

North Korean leaders wanted to utilize at their full capacity these hospitals that were

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<sup>606</sup> “The diary of S.P. Suzdalev, the Soviet Chargé d'affaires in the DPRK, from June 1 to July 2, 1953 (June 11, 1953),” AVPRF, f. 0102, op. 9, p. 44, d. 9, ll. 62-63.

<sup>607</sup> “The diary of S.P. Suzdalev, the Soviet Ambassador to the DPRK, from August 1 to 28, 1953 (August 4, 1953),” AVPRF, f. 0102, op. 9, p. 44, d. 9, l. 121.

<sup>608</sup> “The memo for comrade S.P. Suzdalev, the Ambassador of the USSR in the DPRK (August 21, 1954),” AVPRF, f. 0102, op. 10, p. 52, d. 9, l. 78.

<sup>609</sup> “Meeting minutes with Radeno Grigorov, the Bulgarian Minister (November 26, 1954),” AVPRF, f. 0102, op. 11, p. 60, d. 8, ll. 7-8.



supported by the bloc countries. In August 10, 1953, Nam Il, Minister of Foreign Affairs, invited the diplomatic representatives of the Soviet Union, Romania, Hungary, Czechoslovakia, Poland, and Bulgaria to his office. The main agenda for this meeting was to relay the North Korean leadership's decision; Nam Il told those ambassadors that his government decided to ask an extension of the operation in North Korea of Red Cross (RC) military hospitals that were nominally managed by the RCs of the bloc countries and a reorganization of these hospitals into hospitals for inpatients. By the end of the war in July 1953, there were at least six major RC hospitals, including the Soviet hospital in Pyongyang, and other hospitals supported by the RCs of Romania, Poland, Bulgaria, Czechoslovakia, and Hungary, located in each province (See Table 5-3). Also, Nam Il continued to ask for the dispatch of radiologists, pediatricians, obstetrician-gynecologists, and dermatologist-venereologists to each of the aforementioned hospital.<sup>610</sup> A few days later, Kim Il-sung revealed his wish to the Soviet ambassador that the Soviet RC hospital should be reorganized to a hospital for inpatients and that the same hospital would remain up until 1956.<sup>611</sup> Consequently, the reorganization of the Soviet RC hospital was decided to be conducted at the expense of Soviet assistance in the total amount of one billion rubles.<sup>612</sup>

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<sup>610</sup> "The diary of S.P. Suzdalev, the Soviet Ambassador to the DPRK, from August 1 to 28, 1953 (August 10, 1953)," AVPRF, f. 0102, op. 9, p. 44, d. 9, ll. 126-127.

<sup>611</sup> "The diary of S.P. Suzdalev, the Soviet Ambassador to the DPRK, from August 1 to 28, 1953 (August 13, 1953)," AVPRF, f. 0102, op. 9, p. 44, d. 9, l. 129.

<sup>612</sup> "The diary of S.P. Suzdalev, the Soviet Ambassador to the DPRK, from August 1 to 28, 1953 (August 24, 1953)," AVPRF, f. 0102, op. 9, p. 44, d. 9, ll. 140-141.

Table 5-3: Focus of Socialist Medical Aid in Post-War North Korea

Country	Efforts Focused
USSR	Pyongyang
PRC*	Pyongyang; field hospitals
East Germany	Mobile hospitals
Poland	Hamhŭng
Czechoslovakia	Chŏngjin
Hungary	Sariwŏn
Romania	Namp'o
Bulgaria	Sinŭiju, Kanggye

Source: Avram A. Agov, “North Korea in the Socialist World: Integration and Divergence, 1945-1970. The Crossroads of Politics and Economic” (PhD Diss., The University of British Columbia, 2010), pp. 111-117; 201-205; Jin-hyouk Kim and Mi-ra Moon, “Sahoejuŭi chinyŏng ũi puk'an ũiryŏ chiwŏn kwa kyoryu(1945-1958): 'Soryŏn paeugi' wa 'chuch'ejŏk' palchŏn ũi t'ŭmsae esŏ” [The Socialist Camp’s North Korean Medical Support and Exchange (1945-1958): Between Learning from the Soviet Union and Independent Course] (in Korean), *Ŭisahak* [Korean Journal of Medical History] 28:1 (2019), pp. 176-181; *Rodong Shinmun* December 29, 1953.

Remarks: \* The Chinese People’s Volunteer Army soldiers helped North Korea rebuild the Central General Hospital (*Chungang chonghap pyŏngwŏn*) in Pyongyang.

Between December 1953 and July 1955, the Soviet RC hospital was rebuilt, which was later renamed the Korean RC hospital (*Chosŏn chŏkshipcha pyŏngwŏn*) in the late 1950s. In January 1954, the Soviet Ministry of Health drew up a preliminary plan: materials and equipment should be delivered by the end of 1954 to build the hospital complex in 1955.<sup>613</sup> In

<sup>613</sup> “Dokladnaya zapiska (July 22, 1954),” GARF, f. 8009, op. 34, d. 131, l. 207.

early April 1954, two Soviet engineers, G.S. Korshunov and K.S. Matoyan, flew to North Korea to carry out pre-projects of design and construction.<sup>614</sup> As documents indicate, this hospital was constructed based primarily on Soviet architecture.<sup>615</sup> The plan was to include the Eastern Pyongyang hospital (three-story brick building) that was to be reconstructed solely by North Korea into the hospital complex. Hence, the Soviets were supposed to build only a new corpus of 200 beds as well as two three-story buildings and supply the entire hospital complex with equipment.<sup>616</sup> As Kim Il-sung promised to the nation, the Soviet Union sent a massive amount of medical equipment to support this RC hospital.<sup>617</sup>

By early 1955, the Soviet RC hospital, like other RC hospitals in North Korea, was located in the “field conditions,” which meant that several hospital buildings were scattered in small Korean buildings that were located either underground or above the ground.<sup>618</sup> The reconstruction of the Soviet RC hospital was completed by April 1955, which resulted in the opening of the same hospital in July 31, with four large buildings and a variety of state-of-the-art equipment. North Korean leaders expressed great satisfaction at Soviet equipment and ensured that its government would take “every measure” to make this hospital exemplary in

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<sup>614</sup> GARF, f. 8009, op. 34, d. 131, ll. 210; 217-218.

<sup>615</sup> “Spisok (March 31, 1954),” GARF, f. 8009, op. 34, d. 131, l. 215.

<sup>616</sup> “Planovoe zadanie,” GARF, f. 8009, op. 34, d. 131, ll. 196-198.

<sup>617</sup> GARF, f. 8009, op. 34, d. 131, ll. 167-183. For the list of some of the equipment that were delivered to the DPRK in early 1955, see “Protokol,” GARF, f. 8009, op. 34, d. 180, ll. 104-105.

<sup>618</sup> “The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from July 25 to August 25, 1955 (July 27, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 7, l. 41.

the country.<sup>619</sup> A few days before the opening ceremony of the RC hospital, the Soviet ambassador inspected the site, while proudly writing in the official diary that Pyongyang now had an “excellent medical institution” with 400 beds for inpatients, a high-capacity outpatient clinic, and modern equipment.<sup>620</sup>

In the reconstruction period of North Korea from 1954 to 1956 and beyond, the Red Cross hospitals in North Korea, which were co-managed by foreign and North Korean staffs and offering practice opportunities to North Korean medical personnel,<sup>621</sup> were eventually transferred under the management of the DPRK. In April 1956, the plan was made to transfer the management of the Romanian RC hospital in Namp’o to the hosting country. Romanian leaders reasoned that North Korean medical personnel, including doctors, staffs, and administrators, were sufficiently prepared to the extent that they could work by themselves.

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<sup>619</sup> “The diary of S.P. Lazarev, the Soviet Chargé d'affaires ad interim in the DPRK, for the period from January 26 to February 16, 1955 (February 8, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 8, l. 76; “The diary of S.P. Suzdalev, the Soviet Ambassador to the DPRK, from March 12 to April 16, 1955 (March 24, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 7, ll. 22-23.

<sup>620</sup> “The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from July 25 to August 25, 1955 (July 27, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 7, l. 41.

<sup>621</sup> For North Korean medical personnel’s practice with doctors from the bloc countries, see *Inmin Pogŏn* [People’s Health], a North Korean medical journal, of 1957. For example, Dimitrov, Kim Chae-myŏng, and Chang Pong-so, “Hoech’ungjŭng ũro in han oegwajök happyŏngjŭng” [Surgical Complications Caused by Ascariasis], *People’s Health* 5 (May 1957), pp. 33-36. Dimitrov was a Bulgarian doctor, who was working as a member of the Bulgarian medical team at the North Pyongan Provice Central Hospital in Sinŭiju.

For the time being, however, the hospital was to be supported by a group of Romanian staffs (nine doctors, one pharmacist and one technician-radiologist) and medicines from Romania.<sup>622</sup>

Other than the Romanian RC hospital, medical assistance from the bloc countries continued in the form of building hospitals and sending supplies. In December 1956, Romanian architects and engineers arrived at North Korea to carry out preliminary works to design a new hospital in Namp'o. Although Gheorghe Gheorghiu-Dej, the Romanina leader, promised Kim Il-sung in June 1956 to build a hospital in Namp'o, North Korean leaders wanted to change the location of this hospital to Pyongyang across Kim Il-sung University, while full equipment was to be provided by Romania and then transferred to North Korea.<sup>623</sup> Bulgarians also sent additional help in the amount of thirty million rubles in 1956, including 500 tons of soap and penicillin in the amount of 500 thousand rubles.<sup>624</sup>

These Red Cross hospitals were transferred to North Korea after a series of negotiations, which reflected the fact that North Korea in 1957 still lacked qualified medical staffs and necessary medicines. For example, Ri Byōng-nam, North Korean Minister of Health, requested to the Soviet representative to make nine qualified Soviet doctors to remain in North Korea as advisors and continue supplying medicines and equipment in 1957 at the expense of the Soviet Red Cross and Red Crescent Society. The reason for his second request was closely

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<sup>622</sup> "Meeting minutes with G. Luka, a second secretary of the Romanian Embassy in the DPRK (April 25, 1956)," AVPRF, f. 0102, op. 16, p. 24, d. 6, l. 36.

<sup>623</sup> "Meeting minutes with comrade Rusnesku, an attaché of the Romanian Embassy in the DPRK (January 17, 1957)," AVPRF, f. 0102, op. 17, p. 26, d. 5, l. 34.

<sup>624</sup> "Meeting minutes with comrade Radi Botev, a third secretary of the Bulgarian Embassy in the DPRK (January 22, 1957)," AVPRF, f. 0102, op. 17, p. 26, d. 5, ll. 46-47.

related to the fact that his Ministry in early 1957 was not able to receive an appropriate amount of budget to manage the hospital.<sup>625</sup> After the transfer of management was made in April 24, 1957,<sup>626</sup> all Soviet medical staffs returned to the Soviet Union, except for one Soviet doctor, who was tasked to work for the Soviet Embassy. From then on, Soviet citizens residing in the DPRK began to consult North Korean doctors. The Bulgarian RC hospital in Sariwŏn (June 20, 1957) and the Romanian RC hospital (June 26, 1957) followed the Soviet's suit.<sup>627</sup> Unlike the Soviet medical personnel, it took more time for doctors from the bloc countries in Eastern Europe to return home. In May 1957, fifteen Czechoslovak doctors and nurses in Chŏngjin were to remain there to provide professional help until the end of that year. Furthermore, the Czechoslovak Embassy in North Korea wanted to raise the issue of sending a couple of more doctors to the DPRK to assist "North Korean friends" and treat Czechoslovak citizens. However, as a Czechoslovak official thought,<sup>628</sup> it seems that the higher authorities in Prague denied the request of dispatching additional doctors to North Korea.

### *Assistance as a Chance to Improve Medical Qualification*

In the eyes of the doctors and diplomats from the bloc countries, North Korea's medical personnel were less qualified than their own staffs. The country's horrible post-war situations,

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<sup>625</sup> "Meeting minutes with comrade Ri Byŏng-nam, Minister of Health of the DPRK (January 30, 1957)," AVPRF, f. 0102, op. 17, p. 26, d. 5, ll. 46-47.

<sup>626</sup> "Protokol," GARF, f. 8009, op. 34, d. 436, ll. 36-37.

<sup>627</sup> "Protokol," GARF, f. 8009, op. 34, d. 436, ll. 38-43; 44-47.

<sup>628</sup> "Meeting minutes with Jan Vít, a third secretary of the Embassy the Czechoslovak Republic in the DPRK (May 29, 1957)," AVPRF, f. 0102, op. 17, p. 26, d. 5, ll. 84-85.

especially in terms of hygiene and health, exacerbated this negative view on North Korea's general medical circumstances. However, North Korean planners strongly hoped that their doctors would endeavor to use medical assistance as an opportunity to improve their qualification. While there is no way to know whether the North Korean doctors affirmatively responded to the Party's urge, this section uses Soviet archival documents to examine how North Korea as a whole tried to make the best of medical assistance from the socialist bloc.

For medical experts from the bloc countries residing in post-war North Korea, it was a common practice to provide public and rarely-paid services, including mentoring, lectures, and presentations, towards their North Korean counterparts. These foreign medical experts served not only as doctors and advisors, but also teachers, for North Korea's medical community.<sup>629</sup> For example, North Korean Minister of Construction made a request to a Soviet diplomat in early 1955 that one Soviet specialist should conduct lecture (four hours a week) in sanitary technology in higher courses at a college of construction because North Korean teachers, according to the Construction Minister, "could not guarantee qualified lectures."<sup>630</sup> In December 1955, North Korean leaders invited a Soviet physician as the advisor to the governmental hospital, whose work would start from February 1956 for two years.<sup>631</sup>

One of the recurring topics in the conversations among Soviet and Eastern European diplomats in Pyongyang was the poor use of medical equipment by "Korean friends," which

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<sup>629</sup> "The diary of V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from March 30 to April 14, 1956 (April 9, 1956)," AVPRF, f. 0102, op. 12, p. 68, d. 5, l. 52.

<sup>630</sup> "The diary of S.P. Lazarev, the Soviet Chargé d'affaires ad interim in the DPRK, for the period from January 26 to February 16, 1955 (February 8, 1955)," AVPRF, f. 0102, op. 11, p. 60, d. 8, l. 76.

<sup>631</sup> AVPRF, f. 0102, op. 16, p. 24, d. 4, l. 1.

was brought as part of assistance. This particular image was worsened by the food crisis of spring 1955, whose main reason still remains to be debated.<sup>632</sup> In July 1955, Richard Fischer, the ambassador of the German Democratic Republic (GDR), shared his opinion with his Soviet counterpart about the recent spring, when a “considerable number of [North Korean] patients,” who were suffering alimentary disorder, visited the Hungarian hospital after “relying upon roots, various herbs, and even bark of pine trees.” In his view, living standards for ordinary North Koreans was “extremely low,” which was closely related to the North Korean leadership’s inability to use assistance in an appropriate manner.<sup>633</sup> The discontent that was largely shared among Eastern European diplomats stemmed from this particular understanding of the relations between Kim Il-sung and assistance. In May 1956, the Bulgarian ambassador stated that “[North] Korean friends unconditionally” need help to improve the situation of the populace since living standards in Bulgaria were “ten times higher” than North Korea. He could not understand, the Bulgarian ambassador continued, why the whole country said nothing about the truth of poor circumstances; for example, the Third Party Congress that was held in April 1956 did not even touch upon about harsh situations of the populace. To make matters worse, he noted, North Koreans kept silence to foreign diplomats about many important issues. His criticism constantly pointed to North Korea’s material situations; his “heavy impression” after seeing many North Korean patients with dystrophy in the Bulgarian hospitals in Kanggye and

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<sup>632</sup> Cho Su-ryong, “Chǒnhu Pukhan ŭi sahoejuŭi ihaeng kwa ‘charyōkkaengsaeng’ kyōngje ŭi hyōngsōng” [Jaryeokgaengsaeng Economy: North Korea's Socialist Transition and Its Formation in 1953-63] (in Korean) (PhD Diss., Kyung Hee University, 2018), pp. 90-108.

<sup>633</sup> “The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from July 25 to August 25, 1955 (July 27, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 7, l. 40.



Sinŭiju might have been largely shared among many foreign diplomats,<sup>634</sup> which justified a negative view on the North Korean health system in general.

Although it was hard to openly discuss, mistrust towards North Korean doctors seemed to have abounded among North Korean planners, too. In November 1955, there was a small battle of expertise between North Korean and Soviet doctors over the cause of death for the son of Hŏ Chŏng-suk, Minister of Culture and Propaganda. The background of this event was that Hŏ's twenty-eight-year-old son had been diagnosed with tubercular meningitis in a hospital in Khabarovsk in the summer of the same year and that he had continued to receive the treatment in the governmental hospital of North Korea. However, he died on October 28, for a controversial reason. It was reported that after Soviet doctors had given a shot of penicillin into his spine, he had become worse. Subsequently, North Korean doctors pumped out liquid from his spinal canal, which drove the patient to be in a critical condition. At that moment, "despite Soviet doctors' objection," North Korean doctors decided to inject luminal, a medication to treat seizures, which resulted in his death. While each side blaming the other, Nam Il, the conveyor of this information, told the Soviet ambassador that he personally did not believe North Korean doctors of the governmental hospital, since Ch'oe Ch'ang-ik, a Vice Premier, became really worse after taking prescribed medicine from the same hospital a few days ago.<sup>635</sup>

Interestingly, the tension could be found between Soviet Korean medical experts and local North Korean doctors. In general, Kim Il-sung highly valued Soviet experts and advisors,

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<sup>634</sup> "The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from May 17 to June 1, 1956 (May 23, 1956)," AVPRF, f. 0102, op. 12, p. 68, d. 5, l. 99.

<sup>635</sup> "The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from November 3 to 22, 1955 (November 3, 1955)," AVPRF, f. 0102, op. 11, p. 60, d. 7, ll. 141-142.

as he did so in one of the closed meetings in December 1956. He only criticized those “anti-party” officials, who had allegedly argued that the country “should be liberated” from Soviet experts and that those experts were “expensive.”<sup>636</sup> However, there were actually Soviet experts, who were regarded by North Korean leaders as less qualified. In early February 1957, Yu Sŏng-hun, Rector of Kim Il-sung University, stated that sometimes not highly qualified Soviet specialists had visited the country. He brought as an example some Soviet Korean doctors, who were working in the Soviet RC hospital in Pyongyang. Although those Soviet Korean doctors had “bad medical preparation,” they usually took leading positions, which made native North Korean doctors unhappy. Previously a Soviet Korean himself with a career in history education, Yu Sŏng-hun worried that these native North Koreans might have made an inappropriate conclusion that the level of Soviet medicine was lower than that of Hungary and Romania since many North Korean doctors of that hospital had received training in Hungarian and Romanian RC hospitals in the past.<sup>637</sup>

Eastern European diplomats were not satisfied with the quality of medical service provided by the North Korean health system, which was complicated by the difference of cultures and view on security. In August 1957, a Czechoslovak diplomat’s idea was delivered to the Soviet ambassador that the medical division of labor among socialist countries in North Korea should be implemented to provide better medical service. Recently, the same idea was materialized among the diplomatic representatives in Beijing. The main point of this suggestion was to replace North Korean medical personnel who were supposed to treat foreign diplomatic

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<sup>636</sup> RGANI, f. 5, op. 28, d. 486, l. 18.

<sup>637</sup> “Meeting minutes with comrade Yu Sŏng-hun, the President of Kim Il-sung University (February 7, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 6, l. 101.

workers with Soviet and Eastern European doctors. However, the Soviet ambassador rejected his idea since it might inflict “undeserved insult” (*nezasluzhennaya obida*) to “North Korean friends.” Indeed, the Chinese expressed their discontent at such a discriminatory practice.<sup>638</sup> In May, the East German ambassador stated that a number of North Korean economic officials and experts behaved “very arrogantly,” dismissing suggestions of German specialists. Since the GDR decided to help construct venereal dispensaries in North Korea, its specialists needed data about the number of certain types of venereal diseases in order to define the need of special instruments, drugs, and equipment. However, when the Germans made such requests, North Korean counterparts were immediately offended.<sup>639</sup> In the winter of 1957-1958, it was said that one Polish military doctor, who had once worked in the Polish hospital in Hamhŭng, successfully treated leprosy patients with tuberculosis medicines, resulting in the release of more than ten patients. Given that South Korea had around 40,000 leprosy patients, the Polish representative recommended to the North Korean Ministry of Health to publicize this news to show North Korea’s medical superiority as well as legitimacy against South Korea. But the Ministry’s answer was negative, as the news might cause an undesirable result, such as mass movement of leprosy patients across the border. Despite the Polish ambassador’s suspicion on

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<sup>638</sup> “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from August 16 to 30, 1957 (August 23, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 5, ll. 523-524.

<sup>639</sup> “The diary of comrade A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from May 6 to 29, 1957 (May 22, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 5, l. 154. The Central Clinic for Dermato-Venerology (*Chungang p’isŏng chŏnmun ch’iryo yebangwŏn*) opened as of September 27, 1957. *People’s Health* 11 (November 1957), p. 9.

that answer, the Soviet ambassador said that the North Koreans were right.<sup>640</sup>

Against all financial odds, North Korea strived to improve medical qualification of its doctors in the post-war 1950s by continuing to invite experts from the bloc countries and to send North Korean doctors abroad. These activities mostly focused on the Soviet Union.<sup>641</sup> This was primarily because the Soviet Union had world-class prestige in medicine that North Korea wanted to emulate. Also, the lingua franca in the socialist bloc was Russian, which made it easy for North Korean planners to focus on the Soviet Union. It was in this context that a Soviet medical group was invited to help North Koreans draw up a “ten-year plan” to develop the country’s health system.<sup>642</sup> Within the framework of the North Korea-Soviet cultural cooperation plan, a group of Soviet doctors,<sup>643</sup> led by Vladimir D. Timakov, the Vice President of the Soviet Academy of Medical Sciences, from December 1957 to January 1958 inspected

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<sup>640</sup> “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from November 26 to December 13, 1957 (December 13, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 5, ll. 44-45; “Meeting minutes with H. Brzeziński, a first secretary of the Embassy of the People’s Republic of Poland in the DPRK (February 6, 1958),” AVPRF, f. 0102, op. 18, p. 28, d. 5, l. 19.

<sup>641</sup> “Meeting minutes with comrade Park Kil-ryong, the Chief of the First Department of the Ministry of Foreign Affairs of the DPRK (September 30, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 6, l. 298.

<sup>642</sup> “Meeting minutes Kim Tong-bin, the Chief of Academic Council Secretariat of the Ministry of Health of the DPRK (August 21, 1957),” AVPRF, f. 0102, op. 17, p. 26, d. 5, l. 112; GARF, f. 8009, op. 34, d. 436, l. 56.

<sup>643</sup> “Meeting minutes Kim Tong-bin, the Chief of Academic Council Secretariat of the Ministry of Health of the DPRK (August 21, 1957),” AVPRF, f. 0102, op. 17, p. 26, d. 5, l. 112; GARF, f. 8009, op. 34, d. 436, l. 56.

the North Korean health system and advised local medical authorities.<sup>644</sup> Although a couple of pressing issues including the lack of funds were raised by the North Korean medical authorities, which would prevent the implementation of the plan, the “ten-year plan” was approved by Kim Il-sung, with a specific focus on improving unsanitary situations and fighting against parasite.<sup>645</sup> However, this “ten-year plan” appeared to have been discarded by the North Korean authorities for some reason. Meanwhile, this type of visit of Soviet medical experts continued, as indicated by another group, led by Vladimir S. Stepanov, a Vice Minister of Health of the Russian Soviet Federative Socialist Republic, was invited by the North Korean government in 1959 to solve “important issues” and draw up the five-year plan in health.<sup>646</sup>

Despite the country’s vulnerable economy, the North Korean government also strived to improve the supply of medicines in late 1957, by building antibiotics factories to produce antibiotics.<sup>647</sup> Previously, North Korean planners preferred importing antibiotics from the socialist bloc, as they removed a penicillin factory from the list of assistance offered by the

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<sup>644</sup> Interestingly, the main purpose of this invitation that was to receive practical help to draw a ten-year development plan for medical science was never mentioned in North Korean media. According to a North Korean medical journal, those Soviet doctors were invited by the North Korean government to give assistance (*pangjo*) to the country’s medical education and health system. *People’s Health* 1 (January 1958), pp. 15-16.

<sup>645</sup> “10-letniy plan razvitiya meditsinskoy nauki v Koreyskoy narodnoy demokraticheskoy respubliki 1957-1966 gg. (December 1957),” GARF, f. 8009, op. 34, d. 366, ll. 72-80.

<sup>646</sup> “Politicheskii otchet za 1959 god,” RGANI f. 5, op. 49, d. 257, l. 147.

<sup>647</sup> RGAE, f. 365, op. 2, d. 1630, l. 11.

GDR in mid-1956.<sup>648</sup> North Korea imported various antibiotics such as penicillin, biomycin, and streptomycin from the Soviet-led bloc countries at “slightly lower than world price.”<sup>649</sup> However, Kim Il-sung might have thought that building a factory to produce such antibiotics was important, which was expected to guarantee the country’s antibiotics need in the future. It turned out to be a turn-key project, where the whole factory was to be delivered from the Soviet Union to North Korea from 1959 to 1960, with the planned operation in 1961.<sup>650</sup> According to a Soviet document, North Korea in 1958 spent around 1.7 million rubles to import antibiotics, which was still lower than the half of the expected per capita antibiotics consumption level in the Soviet Union (3.7 million rubles). The capital costs of the factory construction, the same document continued, were evaluated at thirty-eight million rubles with additional 1.5 million rubles that was to be paid annually to supply the factory with raw material.<sup>651</sup> Initially, the Soviet Health Ministry suggested that importing antibiotics would be a better option,<sup>652</sup> which North Korean planners did not take. To Kim Il-sung’s joy, all required ingredients to make penicillin existed in North Korea.<sup>653</sup> While not much is revealed about how the construction of the penicillin factory was completed at Sunchŏn by August 1961, it seems that the scheduled building of the factory was somehow postponed by the Soviet Union to 1963 and that North

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<sup>648</sup> “The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from June 14 to 20, 1956 (June 19, 1956),” AVPRF, f. 0102, op. 12, p. 68, d. 5, ll. 137-138.

<sup>649</sup> RGAE, f. 365, op. 2, d. 1630, ll. 47-50.

<sup>650</sup> RGAE, f. 365, op. 2, d. 1586, ll. 7-9.

<sup>651</sup> RGAE, f. 365, op. 2, d. 1630, l. 46.

<sup>652</sup> RGAE, f. 365, op. 2, d. 1630, ll. 61-62.

<sup>653</sup> RGAE, f. 365, op. 2, d. 1630, ll. 4-6.

Korean leaders by early 1959 wanted to finish it in 1961.<sup>654</sup>

Despite North Korea's decade-long efforts to improve its medical qualification, a techno-scientific gap between North Korea and the Soviet Union was too wide to be bridged. For example, the North Korean Microbial Research Institute produced Japanese encephalitis vaccine based on Japanese methods and then carried out mass vaccination only to get dire results: paralysis of the limbs of many people. Both North Korean and Soviet experts pointed out that non-compliance with all regulations in manufacturing vaccines had caused a problem and that animal brain-based vaccines had had side effects that already had occurred in Japan in 1946 and China in 1957. Hence, Soviet experts recommended their North Korean counterparts to learn Soviet methods to make vaccine against Japanese encephalitis and tick-borne encephalitis, which led North Korea to ban the production of those vaccines in 1960 despite its sharp need. At the same time, North Korean planners requested help from the Soviet Union. However, the Soviet Ministry of Health stated that they could only show the vaccine production process of whooping cough and diphtheria, as Japanese encephalitis vaccine was not produced in the Soviet Union. Disappointed, North Korean leaders decided to resume vaccination in 1961 after North Korean experts learn how to produce vaccines through Soviet methods.<sup>655</sup>

### ***North Korean Participation in the Bloc's Medical Activities***

Throughout the 1950s, North Korean medical experts were able to take part in a variety of

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<sup>654</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from January 2 to 20, 1959 (January 15, 1959)," AVPRF, f. 0102, op. 15, p. 81, d. 7, ll. 18-20.

<sup>655</sup> "Meeting minutes with Ch'oe Tu-kwŏn, the Head Sanitary Inspector of the Ministry of Health of the DPRK (May 21, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 8, ll. 131-132.

activities abroad, which were related to medicine and health, thanks to the country's active engagement with the socialist bloc. This section looks into how these experts tried to make the best out of their brief trips abroad despite the North Korean state's general efforts to save monetary resources.

A number of North Korean doctors wanted to see at first hand industrial infrastructure of the advanced Soviet Union that undergirded its system of medicine and health. According to a Soviet document, the North Korean medical workers, who were training in the Soviet Union in late 1953, wanted to visit various types of factories in Moscow.<sup>656</sup> Among North Korean experts learning in the Soviet Union was Kim Sang-kyu, the Vice Chief of the Hygiene Office of the Korean People's Army (KPA), whose host was the Soviet Ministry of Health. Unfortunately, he could not take one course in military hygiene that was necessary for him since doing so required the coordination with the Soviet Ministry of Defense.<sup>657</sup> Although there is no evidence regarding whether Kim's request was approved, his case shows how North Korean experts tried to get their education as a duty. In late 1954, the North Korean authorities made a request that some North Korean doctors, who were about to come home from the GDR and Bulgaria, be allowed to travel to the Soviet Union to familiarize themselves with medical institutes in Moscow and Leningrad.<sup>658</sup>

From the early 1950s on, North Korean medical experts began to attend in the intra-bloc conferences and seminars. In July 28, 1954, six North Korean doctors were invited to

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<sup>656</sup> "Plan raboty," RGANI, f. 5, op. 28, d. 40, l. 25.

<sup>657</sup> "Meeting minutes with Yang Yǒng-sun, a counselor in the Embassy of the DPRK (October 15, 1953)," AVPRF, f. 0102, op. 9, p. 44, d. 7, ll. 102-103.

<sup>658</sup> AVPRF, f. 0102, op. 14, p. 20, d. 4, ll. 9-11.



attend a session of the Academy of Medical Science of the USSR that was to be held in Tashkent in upcoming September.<sup>659</sup> The invitation was immediately accepted, and candidates were selected in just a week.<sup>660</sup> In November 22, another invitation card, or a complimentary ticket (*priglasitel'nyi bilet*), for one North Korean surgeon was given to attend the 26th All-Union Congress of Surgeons in the Soviet Union. A North Korean official explained that the attending surgeon might be able to make a brief presentation in the congress.<sup>661</sup>

Ri Ŭn-suk's story shows how the North Korean state's decisions were closely bound to economic hardships. Born in colonial Korea in 1933, Ri Ŭn-suk in 1954 was studying in the second year's course at the First Moscow Medical Institute. Unfortunately, she got leprosy and subsequently was hospitalized in the leprosy clinic at the city of Zagorsk near Moscow. In November, the Soviet doctor who had treated Ri Ŭn-suk revealed that it would take at least five to six years to fully treat her.<sup>662</sup> Upon receiving this news, the North Korean Embassy in Moscow came back to a Soviet official in a week with the most urgent question about the cost that "would be borne by the [North] Korean side" for her treatment. A North Korean official continued that either of the following courses of action, either to make her remain in Zagorsk

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<sup>659</sup> "The diary of S.P. Lazarev, the Soviet Chargé d'affaires ad interim in the DPRK, from July 26 to August 5, 1954 (July 28, 1954)," AVPRF, f. 0102, op. 10, p. 52, d. 8, l. 122.

<sup>660</sup> "The diary of S.P. Lazarev, the Soviet Chargé d'affaires ad interim in the DPRK, from July 26 to August 5, 1954 (July 30 and August 5, 1954)," AVPRF, f. 0102, op. 10, p. 52, d. 8, ll. 123-124; 125.

<sup>661</sup> "Meeting minutes with An Un-kyōng, the Chief of the First Department of the Ministry of Foreign Affairs of the DPRK (November 22, 1954)," AVPRF, f. 0102, op. 11, p. 60, d. 8, l. 2.

<sup>662</sup> "Meeting minutes with Park Tōk-hwan, a counselor in the Embassy of the DPRK (November 6, 1954)," AVPRF, f. 0102, op. 9, p. 44, d. 7, ll. 92-93.

for treatment or to repatriate her, would be decided by the cost of each option.<sup>663</sup> In December 27, a Soviet official informed to the North Korean Embassy the price of the each possible option. The first option was to rent a separate carriage that was to be accompanied by a Soviet medical worker to send Ri Ŭn-suk back home, which would cost 16,000 rubles and twelve days. The second option was to treat her in the Soviet Union at the price of 9,243 rubles per year.<sup>664</sup> It seems that the authorities of both countries took the second option. One year later, when a bill was issued by the Zagorsk leprosy clinic, which also included the expense for transportation of Ri Ŭn-suk to the North Korean border, a North Korean official said that the bill will be paid immediately.<sup>665</sup>

By reaching bilateral agreements of cultural cooperation with and participating in the meetings of Ministers of Health of the bloc countries in the late 1950s,<sup>666</sup> North Korea's medical engagement with the socialist bloc expanded. However, North Korean leaders keenly felt financial weight of such expansion due mostly to the principle of "mutuality" in terms of spending economic resources, a tacit rule that the involved parties of the agreement should shoulder the same size of economic burdens.<sup>667</sup> Subsequently, the number, size, and duration

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<sup>663</sup> "Meeting minutes with Park Tŏk-hwan, a counselor in the Embassy of the DPRK (November 13, 1954)," AVPRF, f. 0102, op. 9, p. 44, d. 7, l. 98.

<sup>664</sup> "Meeting minutes with Park Tŏk-hwan, a counselor in the Embassy of the DPRK (December 27, 1954)," AVPRF, f. 0102, op. 10, p. 52, d. 7, ll. 106-108.

<sup>665</sup> "Meeting minutes with Park Tŏk-hwan, a counselor to the Embassy of the DPRK in the USSR (August 29, 1955)," AVPRF, f. 0102, op. 11, p. 60, d. 6, ll. 37-38.

<sup>666</sup> "Plan," GARF, f. 8009, op. 34, d. 436, l. 15

<sup>667</sup> GARF, f. 8009, op. 34, d. 436, l. 33.

of North Korea's medical exchanges with the Soviet Union decreased in the second half of the 1950s. Relatedly, medical education formed only a minor part in North Korea's overall efforts to learn from the Soviet Union: educational expense for North Korean students, graduate students, and other types of learners in the Soviet Union for the first half of 1957 shows that medical students only took up 4.2% (compared to the number of students under the category of "higher education" that took up the highest ratio of 60%) of the total price that was to be paid by North Korea.<sup>668</sup> In this context, North Korea sought to obtain medical and health-related technologies from free transfer of technical documents, as discussed in Chapters Two and Three, instead of exchanging medical experts.<sup>669</sup> In 1957-1958, there were still a few exchange programs for a small number of North Korean medical experts, through which they could learn advanced Soviet medicine, with the duration ranging from one to six months.<sup>670</sup> According to Soviet documents, a group of four medical experts were exchanged in the years of 1958 and 1959 respectively,<sup>671</sup> with various plans to invite a couple of North Korean experts

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<sup>668</sup> "Summary (December 9, 1957)," AVPRF, f. 0102, op. 17, p. 26, d. 4, ll. 19-21.

<sup>669</sup> "Perechen' (May 11, 1957)," GARF, f. 8009, op. 34, d. 397, ll. 11-13.

<sup>670</sup> "Perechen' (May 17, 1957)," GARF, f. 8009, op. 34, d. 397, l. 9; For a plan for An In-hwang's visit to the Gamaleya Research Institute of Epidemiology and Microbiology and the Leningrad Research Institute of Vaccines and Sera (From February 20 to May 16, 1957), see "Plan," GARF, f. 8009, op. 34, d. 397, l. 19; for a plan for Kim Ki-hyŏng's visit to improve his qualification in hematology (From September 30, 1957, to March 26, 1958), see "Plan praktiki tovarishcha Kim Ki-khen (October 30, 1957)," GARF, f. 8009, op. 34, d. 397, ll. 5-7.

<sup>671</sup> GARF, f. 9518, op. 1, d. 118, ll. 45-46; 247.

to Soviet medical institutions and medicine-related congresses.<sup>672</sup> While information on medical exchanges in 1960 is not available, it seems that such an exchange was not carried out in 1961 with the clearly stipulated principle of “maximizing cost reduction by each side.”<sup>673</sup>

### ***Struggle for Hygiene and a Soviet Origin of the Traditional Korean Medicine’s Rise***

This section looks into how North Korea utilized medical help from the socialist bloc to create its own health system, especially by destroying the sources of infectious diseases and improving the general sanitary condition of the nation. Intriguingly, a Soviet origin of the rise of the traditional Korean medicine (*hanŭihak*; from 1962 onward *tongŭihak*) can be found in these national “struggles” against unsanitary conditions. All the while, these North Korean “struggles” were deeply affected by its leadership’s prioritization of the recovery of industry and protection of its industrial workers.<sup>674</sup>

The North Korea’s unsanitary condition that was constantly exacerbated by the war was worsened by the mid-1950s with a variety of epidemics erupting across the country. In September 1955, Japanese encephalitis were rapidly spreading on the Korean Peninsula, which caused damage to not only South Korean provinces, but also many provinces and cities of North Korea including Pyongyang. In a conversation with the Soviet ambassador, Richard Fischer, the East German ambassador, raised the issue of the postponement for two weeks of the planned excursion to Sup’ung hydropower plant. Polish and Hungarian doctors, who were

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<sup>672</sup> GARF, f. 8009, op. 34, d. 436, ll. 15-17; 51.

<sup>673</sup> GARF, f. 9518, op. 1, d. 119, ll. 187; 206-209.

<sup>674</sup> “The diary of S.P. Lazarev, the Soviet Chargé d'affaires ad interim in the DPRK, from September 3 to October 5, 1953 (September 12, 1953),” AVPRF, f. 0102, op. 9, p. 44, d. 9, ll. 172-173.

working in North Korea, warned that any excursion to the places with higher occurrence of Japanese encephalitis should be limited until the temperature would go down to lower the number of mosquitoes, the vector of infection. Upon hearing this, the Soviet ambassador promised to get back to him after consulting Soviet doctors.<sup>675</sup> However, the Soviet ambassador dismissed Fischer's caution, as indicated by the fact that the scheduled excursion in September 13-18 to Sup'ung and Kanggye was made.<sup>676</sup> Not aware of this fact, Fischer in September 23 raised this issue again, while saying that it's necessary to conduct the excursion to Sup'ung and the Diamond Mountain.<sup>677</sup>

Travel logs that were recorded by the diplomatic representatives of the bloc countries provide clear pictures of sanitary conditions of North Korea by the mid-1950s. Two days after coming back from the aforementioned tour, the Soviet ambassador received its Bulgarian counterpart. They had a short discussion about their trips to rural areas. While the Soviet ambassador visited a Bulgarian hospital in Kanggye, the chief of the hospital stated that a serious disease among the populace was helminthic disease, or parasites that could be found from no less than "eighty percent of the populace." The Bulgarian doctor attributed the main reason of this disease to the people's eating habits; drinking untreated water, eating uncooked fish, crayfish, and crabs, and consuming non-disinfected vegetables and fruits were mentioned

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<sup>675</sup> "The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from August 27 to September 9, 1955 (September 9, 1955)," AVPRF, f. 0102, op. 11, p. 60, d. 7, l. 88.

<sup>676</sup> "The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from September 3 to 28, 1955 (September 18, 1955)," AVPRF, f. 0102, op. 11, p. 60, d. 7, l. 93.

<sup>677</sup> "The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from September 3 to 28, 1955 (September 23, 1955)," AVPRF, f. 0102, op. 11, p. 60, d. 7, l. 97.

as the cause. One of the hardest parasites to be dealt with was fluke, or “distoma” as largely known at that time, a parasite that could damage one’s bile duct. The doctor continued that the treatment for fluke had not been arranged so far, due to the fact that Bulgarian medical staffs had “never encountered it, except in [North] Korea.” The Soviet ambassador jotted down his observation on the official diary that sanitary-prophylactic as well as propaganda works on fighting the disease were conducted “exceptionally bad.” He did not fail to write that he had given an order to the Soviet advisor to the North Korean Ministry of Health to come up with suggestions to address this problem.<sup>678</sup> However, the Soviet ambassador might have not known that his order was crucial in the rediscovery and development of the traditional Korean medicine in North Korea in the second half of the 1950s.

Previous studies assumed that the rediscovery of the traditional Korean medicine in North Korea was influenced by four main factors: the expansion of North Korea’s medical activities with the PRC (a Chinese factor); efforts to establish *Juche* in medicine (a *Juche* factor); the need to solve the lack of doctors (a social factor); and as a way to legitimize Kim Il-sung’s “revolutionary traditions” (a political factor).<sup>679</sup> However, this explanation is only circumstantial since none of these aforementioned factors can clearly show the reason why *hanŭihak* was included in the North Korean health system in 1956. Indeed, the traditional Korean medicine in the late 1940s and the early 1950s was regarded “premodern” in North Korea, as indicated by a contemporary Soviet report that those practitioners of the traditional

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<sup>678</sup> “The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from September 3 to 28, 1955 (September 20, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 7, l. 94.

<sup>679</sup> For an authoritative account, see Kim Geun Bae, “Between Science and Ideology,” pp. 197-198.

Korean medicine were called “medicine men” (*znakhari-lekari*), a derogatory Russian term.<sup>680</sup>

Why, then, did Kim Il-sung suddenly turn to the use of traditional medicine?

One compelling answer can be found in October 1955, when Danilenko, the Soviet advisor to the North Korean Minister of Health, reported to Kim Il-sung a summary of national health issues, upon the Soviet ambassador’s order made in the previous month. In October 11, the Soviet ambassador visited Kim Il-sung with Danilenko. According to Danilenko’s oral report, the most important health issue to be addressed for the DPRK was to fight against tuberculosis; as a way to do so, the improvement of living standards as well as the development of anti-tuberculosis institutions were mentioned. The second important issue was helminthic disease. The highest Soviet official on medical and health issues of North Korea stated that “almost 100 percent of the populace was infected with worms.” Danilenko continued that a special consideration should be given to fight against fluke and the North Korean Ministry of Health should accordingly develop measures to deal with this parasitic disease. While talking about the third important issue of occupational (industrial) injuries and labor protection in production, Danilenko said that the state of this issue was also “extremely poor” and characterized unsanitary conditions as “typical” in cities and rural areas. From his perspective, water sources such as wells were not properly managed, which led to widespread dysentery among the populace, without any “fighting efforts” against it. Danilenko’s report that clearly showed that the lack of the most basic hygienic requirements, including baths, showers, and soaps, which made it very easy for the outbreak of epidemic diseases, must have been painful

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<sup>680</sup> “Doklad Ob Itogakh raboty Upravleniya Sovetskoi Grazhdanskoi Administratsii v Severnoi Koree ze tri goda (Avgust 1945 g.-noyabr’ 1948 g.) Tom 1. Politicheskaya chast’,” AVPRF f. 0480, op. 4, p. 14, d. 46, ll. 280-291.

for Kim Il-sung to hear. Not only health education was almost not carried out, but also an insufficient amount of budget (2.5% of the national budget) that was actually decreasing every year and a sharp decrease in supplying the populace with medicines (from twelve-million-won during the Korean War to five-million-won) worsened the nation's health.<sup>681</sup>

After showing gratitude to Danilenko, Kim Il-sung expressed his thoughts on the health situation of North Korea in general. He admitted that “North Korean society could not pay much attention to health, unlike education.” Fund was not sufficiently allocated to health since “doing more is difficult for us [North Korea].” His solution was to instead make use of the “people's funds,” an euphemism that implied untapped resources in local areas, drawing upon his optimistic assessment that North Korea might be able to build medical institution and do more works in sanitary education through radio, printing, schools, and visual agitation. Kim also revealed his plan to discuss health issues at the Plenum of the Party in the following year. Concluding his remark, Kim confessed that in North Korea “modern medical methods did not yet deeply penetrate the populace that continued relying upon folk Tibetan medicine (*narodnaya tibetskaya meditsina*).”<sup>682</sup> He continued that the country had a “big army of such

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<sup>681</sup> “The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from September 29 to October 18, 1955 (October 11, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 7, ll. 118-120.

<sup>682</sup> The Soviet ambassador seemed to have added the adjective “Tibetan” in his official diary, whose main target audiences were high-profile officials in Moscow, to describe traditional medicine. It is highly unlikely that Kim Il-sung used the adjective “Tibetan.” For the association of the expression “Tibetan medicine” with the “traditional Korean medicine” (*hanbang ūihak*), see Boris D. Petrov, “Chosŏn ūihak ryŏksa yŏn'gu esŏ chegi toenŭn myŏt kaji ūigyŏn” [Some Opinions Raised in the Study of Korean Medical History] (translated in Korean), *People's Health* 3 (March 1958), pp. 72-74.



folk healers (*narodnye lekari*) and that it would be necessary for health-related [governmental] organizations to bring their works under control and guide their activities.”<sup>683</sup> Indeed, these ideas of conducting national health campaigns and, more importantly, mobilizing an “army” of practitioners of traditional medicine were enacted in 1956 through the Third Party Congress and the August Plenum,<sup>684</sup> which were officially regarded as laying the foundation of North Korea’s socialist medical and health system.<sup>685</sup> In sum, Soviet criticism on North Korea’s health situations in late 1955 facilitated Kim Il-sung’s desire to make his country healthy through the traditional Korean medicine.

In addition to housing and food issues,<sup>686</sup> North Korean planners saw infectious disease with parasites as one of the most serious problems throughout the 1950s. Regardless of the widespread “popularity of the Eastern medicine,” or folk medicine, it could not treat the North Korean people suffering a variety of parasites. According to a Soviet document, while the occurrence of typhus (0.342 in a thousand) and dysentery (0.519 in a thousand) was high,

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<sup>683</sup> “The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from September 29 to October 18, 1955 (October 11, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 7, ll. 118-121.

<sup>684</sup> “Inmin pogõnsaõp ùl kaesõn kanghwa hal te taehayõ,” RGANI, f. 5, op. 28, d. 411, ll. 282-285.

<sup>685</sup> *Inmin pogõn saõp ùi kaesõn kanghwa rùl wihan tang kwa chõngbu ùi sich’aek* [The Measures of the Party and the Government to Improve and Strengthen Works of People’s Health] (Pyongyang: Chosõn Rodongdang Ch’ulp’ansa, 1956); Cho Hõn-yõng, “Tongbang ùihak ùi chungyosõng kwa kù paljõn chõnmang e taehayõ,” *Chosõn minjujuù inmin konghwaguk Kwahagwõn hakpo* [The DPRK Academy of Sciences Bulletin] 3 (July-September 1957), pp. 21-25.

<sup>686</sup> “The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from June 14 to 20, 1956 (June 19, 1956),” AVPRF, f. 0102, op. 12, p. 68, d. 5, ll. 137-138.

the registered cases of malaria in 1956 were 183,651, which was actually several times lower than the reality. Moreover, the majority of ordinary North Koreans in the mid-1950s turned out to have ascariasis (93% to 98% of the examinee), hookworm (18% to 60% of the examinee), and trichocephalus (60% to 80% of the examinee).<sup>687</sup> Along with paragonimiasis, or lung fluke that was virtually everywhere in the country,<sup>688</sup> tuberculosis, trachoma, venereal diseases, and infectious diseases among the children were widespread.<sup>689</sup> To make matters worse, the lack of doctors and medicines was acute in almost every province by early 1958.<sup>690</sup>

In order to improve the general sanitary condition of the country, the North Korean medical authorities took essential measures in the late 1950s. In January 1958, a North Korean Vice Minister of Health summarized the measures, taken by his Ministry in the previous year. In 1957, four million copies of health-related booklets of eighty-two different types were published to improve the general public's consciousness about health. In North Korea, 54,000 "mothers' schools," local branches of the Korean Union of Democratic Women that aimed to

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<sup>687</sup> "10-letniy plan razvitiya meditsinskoy nauki v Koreyskoy narodnoy demokraticheskoy respubliki 1957-1966 gg. (December 1957)," GARF, f. 8009, op. 34, d. 366, ll. 59-60.

<sup>688</sup> Kwak Hui-hwan, Kim Ock-joo, and Jung Jun-ho, "Saengt'aegye ūi sahoejuūijōk kaejo: puk'an ūi p'yehūpch'ung pangmyōl saōp, 1955-1961" [Socialist Reform of the Ecosystem: Paragonimiasis Eradication Program in North Korea, 1955-1961] (in Korean), *The Korean Journal for the History of Science* 40:3 (2018), pp. 527-550.

<sup>689</sup> "10-letniy plan razvitiya meditsinskoy nauki v Koreyskoy narodnoy demokraticheskoy respubliki 1957-1966 gg. (December 1957)," GARF, f. 8009, op. 34, d. 366, ll. 74-75.

<sup>690</sup> "Meeting minutes with Kim T'ae-kūn, the Chairman of the North Hamgyong Provincial Committee of the WPK (January 9, 1958)," AVPRF, f. 0102, op. 14, p. 75, d. 8, l. 108.

educate women on infant care and hygiene,<sup>691</sup> were created. By the “power of the populace,” clean-up and reservoir beautification works were also carried out. After presenting the medicine-related figures, however, a Vice Minister confessed to a Soviet diplomat that creating the networks of resorts for those who needed to recuperate was “still a matter of the future.”<sup>692</sup> In May 1958, North Korea declared a war against unsanitary situations, especially fluke that invaded the brain, lung, and stomach of the people.<sup>693</sup> These “struggles with distoma” were waged in the form of eradicating the vectors, including crustaceans and crabs, disinfecting domestic animals’ pens and contaminated soils, and creating the dispensary networks for treatment. In addition, clean-up works of water sources and the building of bathhouses, wells, and sanitary buildings became a nation-wide movement. In two months from the campaign’s onset, the initial number of 111,000 infectees in ninety-five counties decreased to 80,000 in ninety counties. However, the lack of the most basic means to address the disease, emetine, a medication that was used to induce vomiting, continued.<sup>694</sup> In July 1959, in the Soviet

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<sup>691</sup> By December 1956, the number of “mothers’ schools” in North Korea was around 150. “Meeting minutes with Chŏng Pun-chu, a Vice Chief of the Department of Cultural Education of the Central Committee of the Korean Union of Democratic Women, and Park Ŭn-sŏn, an instructor of the International Department (December 12, 1956),” AVPRF, f. 0102, op. 17, p. 26, d. 5, l. 15.

<sup>692</sup> “Meeting minutes with Ryu Ki-ch’un, the Vice Minister of Health of the DPRK (January 29, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 8, ll. 101-103.

<sup>693</sup> *People’s Health* 6 (June 1958), pp. 2-4.

<sup>694</sup> “Meeting minutes with comrade Ri Ki-han, the Vice Head Sanitary Inspector of the Ministry of Health of the DPRK, and comrade Kim Tong-bin, the Chief Ryu Ki-ch’un, the Chief of the Foreign Department of Ministry (July 18, 1958),” AVPRF, f. 0102, op. 18, p. 28, d. 5, ll. 86-87.

ambassador's eyes, a number of North Korean villages gave better impressions in terms of sanitary situations.<sup>695</sup> In other words, North Korea's "struggles" against insanitation in the late 1950s attained success that boosted the nation's confidence on its "own" health system.

### ***Meaning of Visiting the Soviet Union for Recuperation and Treatment***

This section looks into how the North Korean leadership's view of visiting the Soviet Union for recuperation and treatment changed in the late 1950s. From the late 1940s on, travel to the Soviet Union for recuperation and treatment of illnesses had not only beneficial qualities for the visitors' health, but also symbolic indication of the visitors' privileged position in North Korea. However, as Kim Il-sung increasingly emphasized the importance of knowing the "conditions" of North Korea in the second half of the 1950s, the scope of such visits diminished. Simultaneously, Kim began to reward a visit opportunity to the Soviet Union to his loyal subordinates in the leadership.

In the early post-war period, Kim Il-sung actively recommended his high-profile subordinates in the Party, the government, and the KPA to receive treatment in the Soviet Union. Hŏ Chŏng-suk is a good example. In August 8, 1953, Kim Il-sung's request to send her for hospital treatment was relayed to the Soviet ambassador. Previously, she was treated in the Soviet Union as well as the PRC.<sup>696</sup> As Hŏ "required further prolonged treatment," she felt

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<sup>695</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from July 3 to 30, 1959 (July 15, 1959)," AVPRF, f. 0102, op. 15, p. 81, d. 7, l. 168.

<sup>696</sup> "The diary of S.P. Suzdalev, the Soviet Ambassador to the DPRK, from August 1 to 28, 1953 (August 8, 1953)," AVPRF, f. 0102, op. 9, p. 44, d. 9, l. 124.

that that journey would be desirable.<sup>697</sup> At some point between August 1953 and April 1954, she received treatment in the Soviet Union and returned home with sincere gratitude to the Soviets.<sup>698</sup> Other high-profile military officers followed Hō's suit: Ch'oe Ch'ang-han, the Chief of the Political Directorate of the KPA, and other KPA generals such as Kim Ch'öl-wŏn and Ch'oe Yōng-hwan visited the Soviet Union between 1954 and 1956.<sup>699</sup> Kim Kyōng-hŭi, Kim Il-Sung's daughter, was one of those visitors. At a discussion between Nam Il and the Soviet ambassador held in May 1956, it turned out that Kim Il-sung's daughter had an abscess of pulmonary tuberculosis due to the lack of continued treatment in the Soviet Union.<sup>700</sup> In the following day, thus, the Ministry of Foreign Affairs sent a note to the Soviet Embassy, requesting that Kim Kyōng-cha (Kim Kyōng-hŭi's childhood name), the "daughter of comrade

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<sup>697</sup> "The diary of S.P. Suzdalev, the Soviet Ambassador to the DPRK, from August 1 to 28, 1953 (August 13, 1953)," AVPRF, f. 0102, op. 9, p. 44, d. 9, l. 132.

<sup>698</sup> "The diary of S.P. Suzdalev, the Soviet Ambassador to the DPRK, from August 1 to 28, 1953 (August 19, 1953)," AVPRF, f. 0102, op. 9, p. 44, d. 9, l. 138; "The diary of S.P. Lazarev, the Soviet Chargé d'affaires ad interim in the DPRK, from April 1 to 24, 1954 (April 14, 1954)," AVPRF, f. 0102, op. 10, p. 52, d. 8, l. 75.

<sup>699</sup> "The diary of S.P. Lazarev, the Soviet Chargé d'affaires ad interim in the DPRK, from June 6 to 21, 1954 (June 14, 1954)," AVPRF, f. 0102, op. 10, p. 52, d. 8, l. 100; "The diary of S.P. Lazarev, the Soviet Chargé d'affaires ad interim in the DPRK, for the period from January 3 to 22, 1955 (January 3, 1955)," AVPRF, f. 0102, op. 11, p. 60, d. 8, l. 56; "The note to the Ministry of Foreign Affairs of the DPRK (June 7, 1955)," AVPRF, f. 0102, op. 15, p. 22, d. 5, l. 6; AVPRF, f. 0102, op. 16, p. 24, d. 4, l. 4.

<sup>700</sup> "The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from May 17 to June 1, 1956 (May 28, 1956)," AVPRF, f. 0102, op. 12, p. 68, d. 5, l. 103.

Kim Il-sung,” be sent to the Soviet Union for treatment.<sup>701</sup>

In 1955-1956, visiting the Soviet Union for health purposes became more convenient for North Korean officials, which reflected the Thaw, a term that implied limited liberalization in Soviet society under its leader Nikita Khrushchev. By August 1955, the Soviet government decided to resume receiving foreign tourists and sending the Soviets abroad. The Soviet government also decided that the citizens of “friendly countries” could use their own domestic passports with the permission (*putevka*) and an entry visa to visit the Soviet Union for recuperation. As a rule of reciprocity, the North Korean government was expected to do the same for the Soviets.<sup>702</sup> Immediately, North Korea confirmed its approval.<sup>703</sup> In February 1956, the Soviet government’s decision was announced to provide free medical services to the

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<sup>701</sup> AVPRF, f. 0102, op. 16, p. 24, d. 4, l. 13 [original text in Korean]. Previously, there was only a suspicion that Kim Kyōng-hūi had used a different name, Kyong-cha, when she had been a child. This suspicion was based on a declassified (and sanitized) CIA file. In the CIA file, Cho Ok-hui, a former private nurse of Kim Il-sung, revealed in a press interview (February 28, 1951) that Kim had an “eleven-year-old son, Kim Yu-na, and a five-year-old daughter, Kim Kyong-cha.” The CIA file can be reached at <https://www.cia.gov/readingroom/document/cia-rdp80-00809a000600390330-2> (date of access: January 16, 2022). For Kim Jong-il’s Russian childhood name “Yura,” see “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from January 2 to 20, 1959 (January 6, 1959),” AVPRF, f. 0102, op. 15, p. 81, d. 7, l. 8.

<sup>702</sup> “The diary of comrade V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from July 25 to August 25, 1955 (August 3, 1955),” AVPRF, f. 0102, op. 11, p. 60, d. 7, l. 49.

<sup>703</sup> “The note to the Ministry of Foreign Affairs of the DPRK (August 8, 1955),” AVPRF, f. 0102, op. 15, p. 22, d. 5, l. 7.

staffs and their families of the foreign representatives from the bloc countries.<sup>704</sup>

In September 1957, a change was made that permanently affected all the North Korean officials' practice of visiting the Soviet Union for recuperation and treatment. Previously, visiting the Soviet Union for such purposes raised tension only between a group of Soviet Koreans, who were working in the Party and the government of North Korea, and other North Korean officials. For example, Kim Ch'an, Minister of Commerce in June 1954, told the Soviet representative that he had been treated unfairly after the suicide of Hō Ka-I, a Soviet Korean politician and one of the core architects of North Korea's Party in the late 1940s, in July 1953 and requested to be sent to the Soviet Union due to health status. In addition to harsh criticism of North Korean leaders toward him, Kim Chan's rationale was that he was suffering damaged spinal column that was not possible to be treated in North Korea.<sup>705</sup> Suspicion was aroused in the North Korean leadership by the mid-1950s, when Soviet Koreans made such requests.

In May 1957, North Korean planners decided to send seven high-profile politicians including Park Chōng-ae (Vice Chairwoman of the Central Committee), Chōng Il-ryong (Vice Premier), and Ri Chu-yōn (Minister of Finance).<sup>706</sup> Some of these politicians were also tasked to learn the Virgin Lands Campaign, Khrushchev's plan to boost agricultural production, and then to inspect Uzbekistan's pomiculture and viticulture after two-week vacation in Yalta or

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<sup>704</sup> "Meeting minutes with Ri Sang-cho, the Ambassador extraordinary and plenipotentiary of the DPRK (February 6, 1956)," AVPRF, f. 0102, op. 16, p. 24, d. 5, l. 1.

<sup>705</sup> "The diary of S.P. Lazarev, the Soviet Chargé d'affaires ad interim in the DPRK, from June 6 to 21, 1954 (June 9, 1954)," AVPRF, f. 0102, op. 10, p. 52, d. 8, ll. 98-99.

<sup>706</sup> "The diary of comrade A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from May 6 to 29, 1957 (May 27, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 5, l. 160.

Sochi.<sup>707</sup> In one Presidium meeting in September, however, Kim Il-sung expressed “that fairly good places exist in [North] Korea and that the motherland had all environmental conditions for spending one’s vacation,” which was indirect criticism to Nam Il’s consent to send high-profile politicians to the Soviet Union for recuperation and treatment. It was reported that after that meeting, politicians in the leadership position “hardly risked asking to go to the Soviet Union.” For example, Park Chŏng-ae, whose bad health required such a visit, cancelled her trip after Kim Il-sung made the remarks.<sup>708</sup> Subsequently, the Presidium began to review visitors more strictly. Also, personal visits to the Soviet Union were made as a reward with Kim Il-sung’s endorsement. In early 1958, Park Kŭm-ch’ŏl, a Vice Chairman of the Central Committee and the leader’s close confidant, had two medical operations in Moscow.<sup>709</sup> Reflecting the importance of steelworks in North Korea’s industrial development, the North Korean authorities sought to send two directors (Kim Yu-p’il at Hwanghae Steelworks and Kim In-ch’un at Kim Ch’aek Steelworks) for treatment in the Soviet Union.<sup>710</sup>

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<sup>707</sup> “Meeting minutes with comrade Ri Tong-kŏn, the Vice Minister of Foreign Affairs of the DPRK (June 18, 1957),” AVPRF, f. 0102, op. 17, p. 26, d. 5, l. 89.

<sup>708</sup> “The diary of comrade A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from August 31 to September 30, 1957 (September 29, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 5, ll. 597-599.

<sup>709</sup> “Meeting minutes with comrade Nam Il, the Ministry of Foreign Affairs of the DPRK (January 4, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 8, l. 17; “The diary of comrade A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from February 14 to March 1, 1958 (February 27, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 6, l. 86.

<sup>710</sup> “Meeting minutes with comrade Ch’oe Yong-myŏng, an operator in the First Department of the



Such a change in the practice of visiting the Soviet Union for North Korean officials meant that communication with Soviet interlocutors was undesirable. Unaware of this point, however, Soviet diplomats continued to make recommendations to those who were to spend the time in Soviet medical facilities and resorts. In May 1958, Nam Il and the Soviet ambassador agreed that while in the Soviet Union North Korean officials should take a chance to meet up with their counterparts in the Soviet Party and government.<sup>711</sup> But, it was highly likely that Nam Il simply gave diplomatic answers to his Soviet interlocutor. Soviet diplomats in Pyongyang could not understand why North Korean leaders did not learn Russian language, a lingua franca of the socialist bloc.<sup>712</sup> Despite Kim Il-sung's remark in September 1957, North Korean officials' tour to the Soviet Union afterwards served as a channel to reaffirm positive impressions of the Soviet Union, as Kim Yŏng-chu, the Vice Chief of Organization Department of the Central Committee and Kim Il-sung's brother, told a Soviet diplomat.<sup>713</sup> Still, any additional activities, including an unscheduled meet up with high-profile Soviet politicians, during the tour would be immediately caught by the leader's watchful and suspicious eyes.

### ***Kim Il-sung's Health Condition: From Heartening Care to Psychological Distancing***

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Ministry of Foreign Affairs of the DPRK (August 11, 1958),” AVPRF, f. 0102, op. 18, p. 28, d. 5, l. 99.

<sup>711</sup> “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from May 13 to 29, 1958 (May 20, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 6, ll. 147-148.

<sup>712</sup> “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from May 31 to June 11, 1958 (May 31, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 6, l. 164.

<sup>713</sup> “Meeting minutes with comrade Kim Yŏng-chu, the Chief of the Organization Department of the CC of the WPK (September 14, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 3, l. 317.

Given that Kim Il-sung's health was one of the very important considerations for Soviet planners, records about his condition opens a new window to read the DPRK's unique position in receiving medical assistance from the Soviet Union in the post-war 1950s.

From the liberation of 1945, Kim Il-sung assumed a tremendous amount of work. By the end of the Korean War in June 1953, Kim Il-sung was supposed to manage three Ministries (Defense, Internal Affairs, and Foreign Affairs), two State Committees (Planning and Construction), the Prosecutor's Office, and the Supreme Court. In order to support the leader, the position of an assistant to the Premier was newly created after the removal of Park Hŏn-yŏng, formerly independence activist and Kim Il-sung's political rival, from the position of a Vice Premier in March. Subsequently, Kim Il-sung assumed Park's work. However, North Korean doctors banned Kim from working due to his deteriorating health conditions.<sup>714</sup> In May, the North Korean cabinet decided to invite a qualified Soviet otolaryngologist as an advisor to the governmental hospital to treat Kim Il-sung's light catarrh and chronic sinusitis. North Korea lacked otolaryngologists.<sup>715</sup> The Soviet ambassador visited "sick" Kim Il-sung, while informing him that two medical professors had departed from Moscow. These two Soviet Professors, Tarsev and Preobrazhenskii, even considered the possibility of transferring Kim Il-sung to a different place for treatment. However, Kim stated that he did not have any desire to

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<sup>714</sup> "Meeting minutes with Ch'oe ch'ŏl-hwan, an assistant to the Chairman of the Cabinet of Ministries of the DPRK (June 26, 1953)," AVPRF, f. 0102, op. 9, p. 44, d. 9, l. 97.

<sup>715</sup> "The diary of S.P. Suzdalev, the Soviet Chargé d'affaires in the DPRK, from April 4 to May 12, 1953 (May 12, 1953)," AVPRF, f. 0102, op. 9, p. 44, d. 9, l. 30; "To A.A. Gromyko (May 18, 1953)," AVPRF, f. 0102, op. 9, p. 44, d. 4, l. 6.

leave the country.<sup>716</sup> At that time, P. S. Kovbas, the Soviet advisor to the governmental hospital, who arrived at North Korea around September 1952, served as attending physician to Kim Il-sung.<sup>717</sup> In July, the Soviet government decided to send an otolaryngologist.<sup>718</sup>

From 1954 to 1955, no information regarding Kim Il-sung's health can be found in Soviet archival materials. However, one document indicates that Kim's health suffered in this period. In April 1957, Nam Il told the Soviet ambassador that "currently Kim Il-sung was sick" and that recently his health condition got worse. Nam Il attributed Kim's health to the "apparently" two-year-long intra-Party fight; for these two years of 1954 and 1955, Nam explained, Kim Il-sung suffered a combination of difficulties, sickness, and worries that were "considerably worse than in times of the Korean War." However, Nam continued, the Presidium achieved "cohesion, full unity, and mutual trust" and nobody was suspicious of Kim Il-sung's rule in the North Korean leadership.<sup>719</sup> Kim Il-sung seemed to have caught a cold in April 1956.<sup>720</sup> Hence, it is safe to say that Kim Il-sung's health conditions occasionally became

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<sup>716</sup> "The diary of S.P. Suzdalev, the Soviet Chargé d'affaires in the DPRK, from May 13 to 31, 1953 (May 13, 1953)," AVPRF, f. 0102, op. 9, p. 44, d. 9, ll. 35-36.

<sup>717</sup> "The diary of S.P. Suzdalev, the Soviet Chargé d'affaires in the DPRK, from June 1 to July 2, 1953 (June 15, 1953)," AVPRF, f. 0102, op. 9, p. 44, d. 9, l. 63.

<sup>718</sup> "Meeting minutes with Chang, the chief of the First Depart of the Ministry of Foreign Affairs of the DPRK (July 14, 1953)," AVPRF, f. 0102, op. 9, p. 44, d. 9, l. 114.

<sup>719</sup> "The diary of comrade A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from April 13 to 27, 1957 (April 27, 1957)," AVPRF, f. 0102, op. 13, p. 72, d. 5, l. 86.

<sup>720</sup> "The diary of V.I. Ivanov, the Soviet Ambassador to the DPRK, for the period from March 30 to April 14, 1956 (April 18, 1956)," AVPRF, f. 0102, op. 12, p. 68, d. 5, l. 62; "The diary of comrade V.I.

worsened in the mid-1950s and that the North Korean leadership did not use his sickness as diplomatic excuses as in the early 1960s, a topic that will be discussed later in this section.

In February 1958, Kim Il-sung requested to the Soviet ambassador an extension of the service of E. E. Lipaev, a Soviet advisor to the chief physician of the special clinic in North Korea. The stipulated reason was very simple: not only Kim Il-sung was fully satisfied with the Soviet doctor, but also Lipaev was virtually an attending physician of the Presidium members including Kim Il-sung. Working as a medical advisor in North Korea from mid-1956, Lipaev regularly diagnosed and treated Kim Il-sung.<sup>721</sup> In June, Kim Il-sung became sick, which prevented him from coming to the office for two days. Despite his conditions, Kim reported for an hour at the Supreme People's Assembly.<sup>722</sup> In September, a letter sent by the Soviet leadership was delivered to Kim about the issue of further staying of Soviet advisors and other specialists, who were working in North Korea. By the fall of 1958, a few Soviet advisors were working in different institutions such as the Academy of General Staffs (four), a polytechnic institute (one), the Ministry of Internal Affairs (four), and the governmental polyclinic (one). While agreeing to their returning home, Kim Il-sung made an exception with Lipaev since he virtually worked as a doctor and treated North Korean leaders. Accordingly,

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Ivanov, the Soviet Ambassador to the DPRK, for the period from April 18 to May 14, 1956 (April 18, 1956),” AVPRF, f. 0102, op. 12, p. 68, d. 5, l. 64.

<sup>721</sup> “The diary of comrade A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from February 14 to March 1, 1958 (February 23, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 6, ll. 91-92.

<sup>722</sup> “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from May 31 to June 11, 1958 (June 11, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 6, ll. 170-171.

the Soviet government approved Lipaev's prolonged stay.<sup>723</sup> By late 1959, the Soviet care of Kim Il-sung continued, as Kim's health deterioration was occasionally reported.<sup>724</sup> For example, in April 1959, Kim could not work for almost a month due to his sickness. At the request of the North Korean leadership, the Soviet government sent highly qualified doctors to treat Kim. For a week, this group of Soviet doctors also checked up Presidium members' health.

From late 1959 to early 1962, Kim Il-sung's kidney served as a battleground of medical expertise between the Soviet Union and the PRC. In November 1959, Kim Il-sung's kidney trouble that seemed to have been widely known among North Korean leaders prevented him from coming to his office. According to a high-profile North Korean official, Kim Il-sung "recently felt languid and easily became tired at work."<sup>725</sup> In the same month, at the request of the North Korea government, two doctors of traditional medicine came from Beijing to treat Kim. According to M. F. Upatova, a Soviet urologist in the North Korean governmental polyclinic, the Chinese doctors gave Kim tincture (*nastoiki*) of different kinds of herbs. Meanwhile, the Chinese doctors did not consult Upatova on any issues, although she, as an

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<sup>723</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from September 7 to 11, 1958 (September 7, 1958)," AVPRF, f. 0102, op. 14, p. 75, d. 6, ll. 187-188.

<sup>724</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from April 25 to May 19, 1959 (April 27, 1959)," AVPRF, f. 0102, op. 15, p. 81, d. 7, l. 80; "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from April 25 to May 19, 1959 (April 29, 1959)," AVPRF, f. 0102, op. 15, p. 81, d. 7, l. 82.

<sup>725</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from November 6 to December 7, 1959 (November 20, 1959)," AVPRF, f. 0102, op. 15, p. 81, d. 7, l. 275.

urologist, was entrusted with monitoring diseases and offering necessary help in treatment.<sup>726</sup> Eventually, the Chinese doctors could not alleviate Kim Il-sung's pain. In January 1960, Kim Il-sung suffered exacerbated kidney trouble and worked "for the first half of a day" only when he could come to work. The Soviet ambassador cordially reminded that "we Soviets are always ready to give all help to treat Kim Il-sung."<sup>727</sup>

In one of the frank discussions between Kim Il-sung and the Soviet ambassador in late February 1960, Kim Il-sung explained the visit of the Chinese doctors a couple of months ago. Showing his gratitude to the Soviet leadership's concern for his health, Kim Il-sung told that the Soviet doctors came in the spring of 1959 to mitigate Kim's pain. However, serious exacerbation (kidney stones) continued to make Kim suffer in the fall and winter. By February 1960, Kim Il-sung, although working "normally," felt pain when sitting for long periods of time and getting around in a car. When he visited Beijing in the fall of 1959 to celebrate the 10th anniversary of the PRC's establishment, Kim continued, Zhou Enlai offered Maotai, a distilled Chinese liquor. Kim rejected Zhou's offer, referring to his kidney trouble. As a way to help, Zhou recommended the traditional Chinese medicine, which resulted in the dispatch of the Chinese doctors. Both doctors from the PRC wanted to get rid of the stones without surgical intervention and made Kim drink different medications. However, it turned out that the stones in Kim's kidney were hard to get rid of. In turn, the Chinese doctors decided to prevent the stones from growing to make the kidney normally function, while prescribing different

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<sup>726</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from November 6 to December 7, 1959 (November 28, 1959)," AVPRF, f. 0102, op. 15, p. 81, d. 7, ll. 280-281.

<sup>727</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from January 8 to 29, 1960 (January 12 and 20, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 6, ll. 2-3; 11.

medications for Kim to drink. Saying “we’ll see,” Kim Il-sung seemed to have expressed an air of uncertainty about the Chinese doctors’ treatment.<sup>728</sup>

Between March and May 1960, Kim Il-sung continued to suffer a cold and exacerbated kidney.<sup>729</sup> In May 2, Kim Il-sung expressed his wish to a Soviet diplomat to use his time in the Soviet Union to receive treatment for his kidney trouble. It turned out that the traditional Chinese medicine that was applied by two Chinese doctors for five months could not mitigate Kim’s pain.<sup>730</sup> In late May, Kim could not come to work because of his catarrh, which was confirmed by a Soviet medical advisor.<sup>731</sup> However, Kim decided not to go to the Soviet Union in 1960 to attend the 43rd anniversary of the Great October. Despite Kim’s initial wish to go, it was reported to the Soviet representative that due to possible exacerbation and much workloads, North Korean doctors had suggested him not to go. Interestingly, the Soviet ambassador did not buy this explanation; after consulting two Soviet doctors, who observed Kim’s health, the ambassador wrote in his official diary his own “deep conviction” that it was simply a pretext to shy away from participation. The ambassador’s suspicion had good reasons since Kim participated in all the events, related with the PRC, without any signs of exacerbated

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<sup>728</sup> “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from February 16 to March 24, 1960 (February 24, 1960),” AVPRF, f. 0102, op. 16, p. 85, d. 6, ll. 81-82.

<sup>729</sup> “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from March 25 to April 11, 1960 (March 29 and April 5, 1960),” AVPRF, f. 0102, op. 16, p. 85, d. 6, ll. 136; 141.

<sup>730</sup> “Meeting minutes with comrade Kim Il-sung (May 2, 1960),” AVPRF, f. 0102, op. 16, p. 85, d. 6, l. 187.

<sup>731</sup> “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from April 29 to May 30, 1960 (May 29, 1960),” AVPRF, f. 0102, op. 16, p. 85, d. 6, l. 182.

kidney trouble.<sup>732</sup> After all, North Korean doctors advised Kim not to work for a long period time and recommend him to take a more rest in relation to his kidney trouble.<sup>733</sup>

Soviet documents suggest that Kim Il-sung suffered the same kidney trouble for a while before Moscow sent two doctors in May 1962.<sup>734</sup> This team of Soviet doctors supervised North Korean doctors' surgery that was performed in May 15 to remove stones from Kim Il-sung's left kidney. The operation was conducted with the observers including Kim Yŏng-chu, the leader's brother, and Ch'oe Ch'ang-sŏk, the North Korean Health Minister. Although the removal of stones from Kim Il-sung's kidney turned out to be successful, Soviet considerations were not quite effective to win the North Korean leader's hearts and minds. Soon, North Korea would openly turn away from the Soviet-led socialist bloc and increasingly side with the PRC in the Sino-Soviet split by the end of the same year.

### ***Concluding Remarks***

Throughout the 1950s, North Korean planners chose a path to exploit medical assistance from

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<sup>732</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, for the period from October 19 to November 7, 1960 (October 29, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 7, ll. 160-162.

<sup>733</sup> "Meeting minutes with Kim Kwang-hyŏp, a Vice Premier of the DPRK (November 18, 1960)," AVPRF, f. 0102, op. 16, p. 85, d. 8, ll. 218-219.

<sup>734</sup> AVPRF, f. 0102, op. 18, p. 93, d. 4, ll. 1-279, partially translated in Park Chong-hyo, *Rŏsia Yŏnbang Oemusŏng Taehanjŏngch'aek Charyo* [The Materials of Korea Policy in the Ministry of Foreign Affairs of the Russian Federation] Vol. 2 (Seoul: Sŏnin, 2010), pp. 215-220; AVPRF, f. 0102, op. 18, p. 93, d. 5, ll. 1-189, partially translated in Park Chong-hyo, *Rŏsia Yŏnbang Oemusŏng Taehanjŏngch'aek Charyo* Vol. 2, pp. 235-244.



the socialist bloc and to improve the nation's health conditions by relying upon the country's "own strengths," instead of inviting more foreign medical experts or sending North Korean doctors abroad. Economic considerations stood out as the most crucial reason that shaped this trend. More participation in the socialist bloc's medical activities meant more expenses to be borne by North Korea. Simultaneously, the improvement in the country's health and hygienic situations was made only gradually, whereas the enlargement of its medical infrastructure that was substantially expanded in the 1950s by assistance also became costly. Hence, the North Korean medical leadership's choice of a cheaper means—the institutionalization of preventive medicine based on the ideology of "self-reliance"—was largely understood as inevitable by the country in the 1960s.

However, it might be not quite wrong to say that North Korea in the period of this chapter made a considerable improvement; one of the important indicators is the average age of the nation, which increased from thirty-seven (under colonial rule) to around sixty.<sup>735</sup> Indeed, North Korea achieved an immense "victory" in the fields of medicine, health, and hygiene, compared to its colonial past. When the Red Army arrived at North Korea in 1945, medical situations were truly horrific. Infectious diseases including tuberculosis, trachoma, syphilis, gonorrhoea, leprosy, smallpox, and cholera were widespread as the colonial authorities took almost no sanitary-prophylactic and preventive measures to address these diseases. According to some Japanese statistics, the occurrence of tuberculosis grew threefold (between 1924 and 1940) and typhoid fever six-fold (between 1912 and 1940). In these circumstances, only a few number of the Korean doctors, who received education in imperial Japan, were the

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<sup>735</sup> "Spravka ob ekonomicheskom polozenii KNDR (December 28, 1960)," AVPRF, f. 0102, op. 16, p. 87, d. 29, ll. 38-39.

only assets that North Korean leaders could mobilize in their efforts to build a treatment net and organize medical service for the people.<sup>736</sup>

Successfully benefiting from medical assistance of the socialist bloc, the North Korean state throughout the 1950s was able to rise as a socialist country that was equipped with its own health system. Unquestionably, its core was preventive medicine that was a byproduct of the Soviet system of health and medicine. Meanwhile, it took another two decades from 1960 to codify *Juche* medicine in 1980 through the enactment of the Law on People's Health (*Inmin pogõnbõp*). Still, the history of North Korea's medicine, health, and hygiene in the 1960s and beyond has completely remained in a veil.

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<sup>736</sup> "Doklad Ob Itogakh raboty Uprvleniya Sovetskoi Grazhdanskoi Administratsii v Severnoi Koree ze tri goda (Avgust 1945 g.-noyabr' 1948 g.) Tom 1. Politicheskaya chast'," AVPRF f. 0480, op. 4, p. 14, d. 46, ll. 280-291.

## Chapter Six: Peaceful Origins of North Korea's Nuclear Program

This chapter examines how North Korea prepared and participated in nuclear cooperation of the socialist bloc, or the Soviet-led “Atoms for Peace” project, in the 1950s and how economic constraints such as the increasing trade deficit shaped the North Korean leadership’s choice in nuclear matters. This chapter argues that although North Korea had good reasons to pursue nuclear weapons due to insecurity in the 1950s, as most of the post-Cold War accounts simply presuppose, security alone cannot properly explain North Korea’s initial fascination with “peaceful atoms,” or industrial application of nuclear energy, in the same period. On the contrary, Kim Il-sung’s nuclear ambition, this chapter shows, mostly focused on how to make the atom serve for the country’s economy, not its arsenal, in the 1950s and the 1960s, which turned out to be very unsuccessful.

On September 9, 1958, an exhibition about the “Peaceful Use of Atomic Energy” in the Soviet Union opened in Pyongyang. Over 120,000 citizens of the Democratic People’s Republic of Korea (DPRK) saw the Soviet “Peaceful Atoms” display in the capital city. Physicist To Sang-rok, later considered the “father of North Korean nuclear physics,” stated in the country’s most influential newspaper *Rodong Shinmun* that the exhibition enabled North Koreans to advance research works in nuclear science and to apply nuclear technology to the management of planned economy.<sup>737</sup> In 1959, the Soviet Union promised to offer technical assistance for the peaceful application of nuclear energy to North Korea, which led to the creation of the infamous Yongbyon Nuclear Scientific Research Center with an IRT-2000

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<sup>737</sup> *Rodong Shinmun* October 24, 1958.

research reactor operational in 1965.<sup>738</sup> In the first North Korean nuclear “crisis” in the early 1990s, this center became one of the most known nuclear facilities to the world, briefly becoming a target of the United States (U.S.) consideration for air strikes.<sup>739</sup> All the while, post-war North Korea throughout the 1950s and 1960s suffered from a general lack of consumer goods, medicine, and foreign currency. How did a war-torn country with very few specialists and even fewer physicists exploit cooperation with the Soviet-led socialist bloc to become an aspiring nuclear state?

Compared to scholarly attention given to the “peaceful” nuclear program of the Republic of Korea (South Korea),<sup>740</sup> North Korea’s similar quest has been explored only partially with a sole emphasis on its aggressive, or military aspect. Academic works that trace

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<sup>738</sup> It’s extremely hard to find any evidence-based account related to the history of this center. For a brief history of this center, see Georgiy Kaurov, “A Technical History of Soviet-North Korean Nuclear Relations” in James Moltz and Alexandre Mansourov eds., *The North Korean Nuclear Program: Security, Strategy and New Perspectives from Russia* (New York: Routledge, 2000), pp. 15-20.

<sup>739</sup> For the tension-building process of the first North Korean nuclear “crisis,” see Leon V. Sigal, *Disarming Strangers: Nuclear Diplomacy with North Korea* (Princeton: Princeton University Press, 1997).

<sup>740</sup> Dong-Won Kim, “Imaginary Savior: The Image of the Nuclear Bomb in Korea,” *Historia Scientiarum* 19:2 (2009), pp. 105-118; Sheila Jasanoff and Sang-Hyun Kim, “Containing the Atom: Sociotechnical Imaginaries and Nuclear Power in the United States and South Korea,” *Minerva* Vol. 47, No. 2 (June 2009), pp. 119-146; John DiMoia, “Atoms for Sale?: Cold War Institution-Building and the South Korean Atomic Energy Project, 1945–1965,” *Technology and Culture* Vol. 51, No. 3 (July 2010), pp. 589-618.

the history of the North Korean nuclear program focus mostly on security issues. While this approach is valid to a degree, it attributes North Korea's nuclear activities only to the leadership's perceived insecurities seems to fuel the conventional wisdom that Kim Il-sung was always eager to build its own bombs. Previous studies simply assume that the country's future proliferation actions were pre-destined without examining how North Koreans perceived nuclear power.<sup>741</sup> Korean and Russian scholars pen similar security-centered, teleological accounts.<sup>742</sup> This prevailing viewpoint is one of the best examples, as Itty Abraham points out, of how a dominant "discourse of control," which seeks "to predict which countries are likely to build nuclear weapons," narrows our comprehension of multifaceted nuclear histories.<sup>743</sup>

Contributing to a growing body of scholarship that charts the nuclear trajectories of non-First World countries,<sup>744</sup> I explore how North Korean understanding and expectations of

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<sup>741</sup> Balazs Szalontai and Sergey Radchenko, "North Korea's Efforts to Acquire Nuclear Technology and Nuclear Weapons: Evidence from Russian and Hungarian Archives," *Cold War International History Project Working Paper #53* (August 2006).

<sup>742</sup> James Moltz and Alexandre Mansourov eds., *The North Korean Nuclear Program*; Koo Kab-woo, "Puk'an 'haek tamnon' ūi wŏnhyŏng kwa maŭmch'egye, 1947~1964nyŏn" [The Prototype and the System of Minds of North Korea's nuclear discourses, 1947-1964], *Hyŏndae pukhan yŏn'gu* 17:1 (2014), pp. 197-250. For a North Korean perspective, see Yi Chŏng-sŏk and Kim Sŏng-su, *21segi ūi haek enerŭgi* [Nuclear Energy of the 21<sup>st</sup> Century] (Pyongyang: Kŭmsŏng Ch'ŏngnyŏn Ch'ulp'ansa, 2010), pp. 154-167.

<sup>743</sup> Itty Abraham, "The Ambivalence of Nuclear Histories," *OSIRIS* 21 (2006), pp. 49-65.

<sup>744</sup> For Israel's case, see Avner Cohen, *Israel and the Bomb* (New York: Columbia University Press, 1998). For India's case, see George Perkovich, *India's Nuclear Bomb: The Impact on Global*

nuclear power were formed from 1950 to 1965.<sup>745</sup> I argue that interest in emulating how the Soviets harnessed nuclear power for economic gain and aversion to the U.S. use of nuclear power for atomic weapons were the two driving factors that drove North Korea's peaceful nuclear program in the Cold War period. As for definition of the "peaceful" nuclear program, I follow the widely-used concept in the international nuclear history studies that encompasses various industrial applications of isotopes and radiation technologies, nuclear power generation, and detonation of bombs for geoengineering projects, all of which were necessarily originated from, but *not* directly linked to, the weapons program.<sup>746</sup> The two most crucial motives that

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*Proliferation* (Berkeley and Los Angeles: University of California Press, 1999). For Pakistan's case, see Feroz Hassan Khan, *Eating Grass: The Making of the Pakistani Bomb* (Stanford: Stanford University Press, 2012). For Ghana's case, see Abena Dove Osseo-Asare, *Atomic Junction: Nuclear Power in Africa After Independence* (Cambridge: Cambridge University Press, 2019). For Brazil's case, see Carlo Patti, *Brazil in the Global Nuclear Order, 1945–2018* (Baltimore: Johns Hopkins University Press, 2021). As for international politics of "peaceful" nuclear technologies between the U.S. and these latecomers, see Jacob D. Hamblin, *The Wretched Atom: America's Global Gamble with Peaceful Nuclear Technology* (New York: Oxford University Press, 2021).

<sup>745</sup> For cultural analyses of nuclear power, see Paul Josephson, "Atomic-Powered Communism: Nuclear Culture in the Postwar USSR," *Slavic Review* 55:2 (1996), pp. 297-324; Sonja D. Schmid, "Shaping the Soviet Experience of the Atomic Age: Nuclear Topics in *Ogonyok*, 1945-1965" in Dick van Lente ed., *The Nuclear Age in Popular Media: A Transnational History, 1945-1964* (New York: Palgrave Macmillan, 2012), pp. 19-51.

<sup>746</sup> Important works of international nuclear history indicate that although "peaceful" nuclear technologies stemmed from the weapons program, they clearly differed from the use of nuclear energy for destructive purposes. See David Holloway, *Stalin and the Bomb: The Soviet Union and Atomic*

undergirded the North Korean nuclear program during the 1950s and 1960s aimed to achieve a strong, self-reliant economy by applying nuclear technologies such as irradiation of grains for preservation and to guard the socialist bloc by condemning U.S. nuclear testing based on the Soviet notion of a solely defensive “nuclear shield.”<sup>747</sup> Examining this history of the North Koreans’ fascination with “peaceful” atoms, this chapter offers a novel narrative that extensive considerations for getting economic gains and protecting socialism played a fundamental role in North Korea’s quest for nuclear power from the onset.

Based on previously unexamined North Korean publications and Soviet archival materials, I analyze North Korean efforts to possess nuclear power by tracing how North Korean media portrayed Soviet supremacy in nuclear science and policy, North Korea’s physicists’ activities, its leadership’s concern about atomic annihilation during the Korean War, support for international peace initiatives and organization of exhibits, requests of nuclear assistance from the Soviets, and an emerging attitude of *Juche* (meaning self-reliance) in nuclear matters between 1950 and 1965. My analysis of North Korea-Soviet nuclear interactions brings a new understanding, as I examine North Korean accounts on nuclear power that were produced from the mid-1940s to 1961 and archival materials that contain crucial information of North Korea’s entry into its own atomic age by 1965 have mostly remained

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*Energy 1939–1956* (New Haven: Yale University Press, 1994); Jacob D. Hamblin, *The Wretched Atom*; Kate Brown, *Plutopia: Nuclear Families, Atomic Cities, and the Great Soviet and American Plutonium Disasters* (New York: Oxford University Press, 2013); Sonja D. Schmid, *Producing Power: The Pre-Chernobyl History of the Soviet Nuclear Industry* (Cambridge: The MIT Press, 2015).

<sup>747</sup> Kate Brown, *Plutopia*.

unexplored.<sup>748</sup> In addition to focusing on North Korea-Soviet nuclear exchanges, this chapter investigates hitherto-overlooked North Korean culture, diplomacy, institution, and techno-science with nuclear power as the main thread against larger Cold War historiography. As this historiography tends to discuss North Korea mostly as autarkic, nationalistic, and ideologically-driven,<sup>749</sup> it should be appropriate to use the periodization used in North Korean history studies.<sup>750</sup>

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<sup>748</sup> All of these North Korean accounts recognized Soviet supremacy in “peaceful” nuclear application. For Soviet nuclear industry in this period, see Paul R. Josephson, *Red Atom: Russia’s Nuclear Power Program from Stalin to Today* (New York: W. H. Freeman and Company, 1999); Sonja D. Schmid, *Producing Power*.

<sup>749</sup> Andrei Lankov, *Crisis in North Korea: The Failure of De-Stalinization, 1956* (Honolulu: University of Hawai’i Press, 2005); Balázs Szalontai, *Kim Il Sung in the Khrushchev Era: Soviet-DPRK Relations and the Roots of North Korean Despotism, 1953–1964* (Stanford: Stanford University Press, 2005); James F. Person, “Solidarity and Self-Reliance: The Antinomies of North Korean Foreign Policy and *Juche* Thought, 1953-1967” (PhD Diss., The George Washington University, 2013); Nobuo Shimotomai, “Kim Il Sung’s Balancing Act between Moscow and Beijing, 1956-1972” in Tsuyoshi Hasegawa ed., *The Cold War in East Asia 1945-1991* (Washington D.C.: Woodrow Wilson Center Press, Stanford: Stanford University Press, 2011), pp. 122-151.

<sup>750</sup> Byun Hak-moon, “Pukhan ūi kisul hyŏngmyŏngnon: 1960-70nyŏndae sasang hyŏngmyŏng kwa kisul hyŏngmyŏng ūi pyŏnghaeng” [The Technical Revolution Theory of North Korea: Simultaneous Pursuit of the Ideological and Technical Revolutions in the 1960s and 1970s] (in Korean) (PhD Diss., Seoul National University, 2015); Cho Su-ryong, “Chŏnhu Pukhan ūi sahoejuŭi ihaeng kwa ‘charyŏkkaengsaeng’ kyŏngje ūi hyŏngsŏng” [Jaryeokgaengsaeng Economy: North Korea’s Socialist Transition and Its Formation in 1953-63] (in Korean) (PhD Diss., Kyung Hee University, 2018); Sŏ



This chapter is structured as follows: In the first section, I analyze how North Korean nuclear experts expanded their nuclear knowledge during and after the Korean War, while continuing to condemn U.S. atomic testing from 1950 to 1955. In the next section, I reconstruct how North Korean leaders, both political and scientific, participated in the Soviet-led “Peaceful Atoms” project with intensive propaganda campaigns against U.S. nuclear testing and explored opportunities if they could receive basic nuclear facilities from 1956 to 1959. In the last section, I explore how the combination of the country’s weak economy and an emerging ideology of *Juche* delayed the construction of the Yongbyon Center, confined nuclear research to isotopes and radiation technologies, and changed nuclear discourses amid Sino-Soviet rivalry from 1960 to 1965. Throughout the chapter, I show that how South Korea’s participation in the U.S.-led “Atoms for Peace” program that involved similar exchanges between the U.S. and South Korea influenced North Korea’s pursuit of peaceful nuclear technology.

### ***Consolidating Soviet Knowledge, Criticizing Atomic America and Calculating Nuclear Disasters, 1950-1955***

The widespread horror of U.S. bombings in the Korean War engendered an enduring legacy that largely shaped not only the nuclear policies, but also the *modus vivendi* of the nascent North Korean state. In this vein, the official North Korean account of the “victorious” war could be better understood if one reads it as a survival from “indiscriminate” U.S. bombings that obliterated nearly everything in North Korea.<sup>751</sup> Living in fear of American atomic bombs

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Tong-man, *Puk Chosŏn sahoējuŭi ch’uje sŏngnipſa, 1945-1961* (Seoul: Sŏnin, 2005).

<sup>751</sup> Kim Taewoo, “LIMITED WAR, UNLIMITED TARGETS: U.S. Air Force Bombing of North Korea during the Korean War, 1950–1953,” *Critical Asian Studies* 44:3 (2012), pp. 467-492.

served as one of the biggest incentives for North Koreans who fled to South Korea.<sup>752</sup> Later, in the 1960s, Kim Il-sung occasionally recalled this experience and explained the link between the threat of American atomic attacks and the South-bound refugees, who seemed to have come from all regions.<sup>753</sup> One Soviet report from early in the Korean War also reflected a general opinion of the communist leaders that U.S. forces would employ atomic weapons to halt the Korean People's Army (KPA)'s continuous advance.<sup>754</sup> Far from the battlefield, however, Soviet and Chinese leaders seemed to discount the threat in general.<sup>755</sup>

As a tug-of-war became fixed on the 38<sup>th</sup> parallel from mid-1951, the North Korean cabinet decided to re-open schools and academic institutions to continue to prepare for an indigenous nuclear program. With this decision, Kim Il-sung University resumed in November 1951 in a wartime shelter. Before moving to another shelter in South Pyongan province in February 1952, this "university in mountains" had 69 students (44% of them women) studying

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<sup>752</sup> Kim Kwi-ok, *Wöllammin ūi saenghwal kyŏnghŏm kwa chŏngch'esŏng* [Living Experience and Identity of Korean War Refugees] (Seoul: Seoul National University Press, 1999), pp. 247-249.

<sup>753</sup> For fragmented evidence, see *SBNK* 7, p. 543.

<sup>754</sup> "Political situation on the Korean Peninsula, Shtykov to Gromyko (July 18, 1950)," The Archive of Foreign Affairs of the Russian Federation [AVPRF], f. 0102, op. 6, p. 21, d. 47, ll. 29-40, translated in Chinese and reprinted in Shen Zhihua ed., *Chaoxian zhan zheng: Eguo dang an guan de jie mi wen jian* [The Korean War: Declassified Documents from Russian Archives] Vol. 2 (Taipei: Zhong yang yan jiu yuan jin dai shi yan jiu suo, 2003), p. 461.

<sup>755</sup> "A meeting minute between Stalin and Zhou Enlai (August 20, 1952)," The Presidential Archive of the Russian Federation, f. 45, op. 1, d. 329, ll. 54-72, translated in Chinese and reprinted in Shen Zhihua ed., *The Korean War* Vol. 3, p. 1202.

mathematics and physics out of a total of 846 students enrolled.<sup>756</sup> Although the country was at war in 1952 and 1953, a few research trips to Peking University were made by educators and students from the physics and mathematics department. The threat of U.S. bombings did not prevent North Korean physicists from writing academic articles. A small number of Soviet physicists came to wartime Korea as advisors.<sup>757</sup>

After the Korean War ended in 1953, Kim Il-sung urged to solve the practical issues of the war-torn country, while demanding that experts join the effort under the party's guidance. As a part of the reconstruction works, the main campus of Kim Il-sung University returned to Pyongyang by the summer of 1954, offering physics classes and opening seventeen labs. To Sang-rok led the effort by publishing a major Korean-language physics text,<sup>758</sup> while other physicists published academic articles.<sup>759</sup> In February 1955, the first agreement for technological cooperation between North Korea and the Soviet Union was reached, which enabled North Korean physicists and experts to participate in the Soviet "Peaceful Atoms" program, including the Joint Institute for Nuclear Research (JINR) at Dubna in 1956. In general, natural science training including physics in the country expanded.<sup>760</sup>

In the international arena, the North Koreans criticized American nuclear tests.<sup>761</sup>

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<sup>756</sup> *Pravda* March 11, 1952; *Ten-year History of Kim Il-sung University*, pp. 90-91.

<sup>757</sup> *Ten-year History of Kim Il-sung University*, pp. 97; 100; and 104.

<sup>758</sup> To Sang-rok, *Mullihak ūi kich'o* [Basic Physics] (Pyongyang: Kungnip Ch'ulp'ansa, 1954).

<sup>759</sup> *Ten-year History of Kim Il-sung University*, p. 143.

<sup>760</sup> *SBNK* 30, pp. 741-742

<sup>761</sup> Sŏ Ch'ang-hwan trans, *Kwahak esŏ ūi tu segye* [Two Worlds in Science] (Pyongyang: Kungnip Tosŏ Ch'ulp'ansa, 1953), p. 99.

Reproaching Operation Castle, a series of seven hydrogen bomb tests conducted at Bikini Atoll, a North Korean commentator characterized it as a “scheme to distract from the 1954 Geneva Conference,” in which the fate of both the Korean Peninsula and Indochina was being discussed. Referring to “U.S.’s responsibility” for proliferation of nuclear weapons, the commentator stated that the atomic weapons of “imperialists” imposed a threat to humanity because they were intended to hit the rear areas to “annihilate innocent non-combatants.” However, Soviet science threw “cold water” on “A-bomb fanatics” by revealing American hydrogen bomb secrets.<sup>762</sup> This evaluation resonated with North Korean physicist Chŏng Kŭn, who characterized atomic bombs as “political” and claimed that from a military point of view they were a “failure.”<sup>763</sup>

Thus, by the mid-1950s, North Korean propaganda about American nuclear weapons resembled that of the Soviet Union, which underscored a dichotomy between American and Soviet nuclear sciences. The narrative had it that while the peaceful socialists had mastered nuclear technology in the name of the people, the warlike capitalists put a heavy burden on their citizens.<sup>764</sup> For example, North Koreans in the early 1950s knew that the U.S. had built facilities such as the Portsmouth Gaseous Diffusion Plant in Ohio and the Savannah River Site in South Carolina. North Korean accounts went on that American taxpayers had to shoulder the astronomical cost, averaging more than one billion dollars per year, to keep those nuclear installations running, while a few corporations such as Rockefeller and DuPont took all the

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<sup>762</sup> Ch’a Jin, *Kukche Saenghwal* [International Life] 9 (May 1954), pp. 20-23.

<sup>763</sup> Chŏng Kŭn, *International Life* 8 (April 1955), pp. 36-40.

<sup>764</sup> Ch’a Hak-ho, *International Life* 19 (October 1954), pp. 13-15.

profits.<sup>765</sup> On the contrary, in North Korean understanding, the peaceful use of atomic energy was bringing about huge transformation in industrial production in the Soviet Union.<sup>766</sup> Understandably, atomic energy “only served imperialism” in America, where “science was militarized”; Americans dumped Hanford fissile materials into the Columbia River “uselessly.”<sup>767</sup> However, it was not known to the Soviet or North Korean publics that the Soviet Union also dumped radioactive waste into a river.<sup>768</sup>

With the strong desire to absorb advanced Soviet science in the 1950s, North Korean physicists continued to eulogize the use of atomic energy in the Soviet Union, just as their southern counterparts praised American atoms. As a North Korean document suggests, Chŏng Kŭn, the theoretical physics course rector at Kim Il-sung University, was the first Korean to visit the world’s first “peaceful” nuclear power plant at Obninsk, which provided electricity for the civilian grid.<sup>769</sup> After attending the conference of the Academy of Sciences (AS) of the USSR on the peaceful uses of atomic energy in July 1955,<sup>770</sup> he visited nuclear facilities in Dubna and Leningrad. At Obninsk, he felt that “humanity had entered the threshold of the atomic age.”<sup>771</sup> The world’s first nuclear power plant captured Chŏng’s heart; the powerful

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<sup>765</sup> M. Rubinstein, trans. Hong Sŏk-oh, *International Life* 14 (July 1954), pp. 22-26.

<sup>766</sup> Chang Ik-hwan, *Kŭlloja* [Worker] 1 (January 1952), pp. 70-83.

<sup>767</sup> Sŏ Ch'ang-hwan, *Two Worlds in Science*, p. 95.

<sup>768</sup> Kate Brown, *Plutopia*, p. 191.

<sup>769</sup> *Ten-year History of Kim Il-sung University*, p. 153.

<sup>770</sup> About the session, see Hiroshi Ichikawa, *Soviet Science and Engineering in the Shadow of the Cold War* (London and New York: Routledge, 2019), pp. 132-137.

<sup>771</sup> Chŏng Kŭn, *International Life* 16 (August 1955), 21-26; *Kwahak kwa kisul* [Science and

devices, including betatron and synchrotron, represented the “might of Soviet science.” Leading North Korean physicist Kim Hyŏn-pong explained that the “installation of the nuclear power plant” was a “distinct expression of Soviet policies.” He suggested in a cheerful light that the prospects for harnessing atomic energy for peaceful purposes were huge; cheap electricity would open up new possibilities for improving the quality of peoples’ lives. Also, hydrogen energy, would provide cheaper electricity, contributing to the construction of communism.<sup>772</sup> However, North Korea was not on the Soviet list of recipients of nuclear research reactors in 1955, which included Poland, Czechoslovakia, Romania, Hungary, Bulgaria, East Germany and the People’s Republic of China (PRC).<sup>773</sup>

Consolidating knowledge from Soviet nuclear science and propaganda nourished North Korea’s economic expectations for atomic power. By the mid-1950s, uranium and thorium were seen as a promising substitute for oil and coal.<sup>774</sup> The use of radioactive isotopes was expected to have a wide range of applications, from disinfection and conservation to transforming the climate through what was termed “atomic alchemy.”<sup>775</sup> Chŏng Kŭn linked

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Technology] 10 (October 1955), pp. 56-59.

<sup>772</sup> Kim Hyŏn-pong, *Worker* 1 (January 1955), pp. 78-90.

<sup>773</sup> *International Life* 22 (November 1955), pp. 27-29.

<sup>774</sup> Analytical Chemistry Lab, *Science and Technology* 4 (April 1955), pp. 35-41; *Science and Technology* 11 (November 1955), pp. 46-50; According to a North Korean source, uranium ores were found in Ŭn'gok Mine, North Pyŏngan province before 1955. See Kim Chae-myŏng, *Chosŏn ũi kwangmul* [Mineral in North Korea] (Pyongyang: Kungnip Ch'ulp'ansa, 1955), p. 159.

<sup>775</sup> A. I. Kitaigorodskii, trans. Ri Nŭng-yŏn, *International Life* 24 (December 1954), pp. 19-22; Lee Chŏng-ku, *Science and Technology* 4 (April 1955), pp. 42-58; M. B. Neiman, trans. Chŏn Pyŏng-su,

nuclear power with “profitability”; 0.5 tons of “nuclear fuel”—uranium or thorium—was sufficient to run a plant equal to Sup’ung hydro power plant, then the tallest dam and largest hydropower plant in Asia. To his joy, North Korea had abundant resources that could be used as nuclear fuel. Translated Soviet publications included what seemed surreal images of irrigating Saharan deserts and installing electric railroads that would connect London, Moscow and Beijing.<sup>776</sup> As the knowledge of nuclear power engineering deepened,<sup>777</sup> pundits estimated that atomic energy would produce a good deal of power in the late 20<sup>th</sup> century.<sup>778</sup>

Under the influence of Soviet military science in the 1950s, North Korean military specialists began preparing for comprehensive defense in “atomic battlefield conditions,” in which measuring likely damage from detonated bombs, radiation monitoring, improvising shelters, and decontamination were regarded imperative. Before the launch of *Sputnik* in 1957, both American and Soviet strategists estimated that nuclear bombs would be delivered mostly by airplanes.<sup>779</sup> This view was also widely shared among contemporary North Korean military planners. Moreover, a top-secret KPA military manual assumed that Americans could use

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*Science and Technology* 7 (July 1955), pp. 42-51.

<sup>776</sup> *Ssobet’ü kwahak üi widaehan him* [The Great Power of Soviet Science] (Pyongyang: ChoSso Ch’ulp’ansa, 1955).

<sup>777</sup> A. I. Kitaigorodskii, co-trans. Cho Pyöng-rae and Cho Yöng-bae, *Science and Technology* 3 (March 1955), pp. 42-50.

<sup>778</sup> Mun Kyöng-ok, *Chayön kwa kisul* [Nature and Technology] (Pyongyang: Kungnip Ch’ulp’ansa, 1955), pp. 11-14; and 20.

<sup>779</sup> David Holloway, *Stalin and the Bomb*, pp. 250-252.

atomic weapons “at any time,” an assumption that was forged in the fire of the Korean War.<sup>780</sup> The same manual had instructions on how North Korean combatants could preserve forces and fight back, mostly after atomic bombs had been detonated. The KPA had almost no deterrent measurements, except for making a sortie to shoot down bombers and using anti-air guns.<sup>781</sup> Avoiding exposure to blasts and radioactive fallout inside underground shelters came first in the case of American atomic aggression, the KPA was instructed to be extremely careful about “penetrating radiation” emitted from detonations and radioactive substances, because ionizing radiation would inflict invisible damages. KPA combatants were also required to avoid the following activities in radiated battlefields: 1) dust-raising; 2) lying on the ground unless combat situations required; 3) eating, drinking, or smoking; 4) taking off protective gear; 5) staying in highly exposed areas.<sup>782</sup> These military “anti-atomic measures” with a specific focus on making underground shelters started appearing in various publications targeted at ordinary North Korean citizens from the second half of the 1950s on.<sup>783</sup>

### ***Contracting with Soviet “Peaceful Atoms” to Harness Nuclear Power One Day, 1956-1959***

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<sup>780</sup> For the symbolic importance of nuclear-related manuals in history research, see Kate Brown, *Manual for Survival: A Chernobyl Guide to the Future* (New York: W. W. Norton & Company, 2019).

<sup>781</sup> *Pihaengdae kiji ūi panwŏnja pangwi kyobŏm* [Manual for Airbase Anti-Atomic Defense] (Pyongyang: Minjokpowisŏng Kunsu Ch'ulp'anbu, 1955).

<sup>782</sup> *Pudae panwŏnja pangwi kyobŏm* [Manual for Unit Anti-Atomic Defense] (Pyongyang: Minjokpowisŏng Kunsu Ch'ulp'anbu, 1955), pp. 34-35.

<sup>783</sup> Relevant articles on “anti-atomic measures” were translated from Soviet and Chinese military publications.



Previous studies view the year of 1956 as a political watershed in North Korean history,<sup>784</sup> when Kim Il-sung finally rose as the leader with unchecked power. In North Korean nuclear history the same year was the beginning of expanding possibilities to acquire peaceful nuclear technologies. Starting in 1956, North Korean leaders including Kim Il-sung, began to realize the unlimited potential of nuclear power for peaceful purposes. Early that year, Kim Il-sung relayed to the Soviet ambassador North Korean scientists' desire to get help from the Soviet Union in the field of nuclear research.<sup>785</sup> During a visit to the USSR and Eastern Europe in July and August, Kim Il-sung toured the world's first nuclear power plant and was said to have breakfast there.<sup>786</sup> (Following in the footsteps of theoretical physicist Chŏng Kŭn in 1955.) North Korean political leaders such as Kim Tu-pong, the Chairman of the Supreme People's Assembly, and Nam Il, Minister of Foreign Affairs, also visited the nuclear power plant at Obninsk. Kim Tu-pong was impressed with the plant's "awe-inspiring force" which for him confirmed Soviet supremacy over "aggressors" who were threatening the world with atomic and hydrogen bombs.<sup>787</sup> Likewise, in the North Korean leadership's eyes, the 1956 agreement

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<sup>784</sup> Andrei Lankov, *Crisis in North Korea*; Balázs Szalontai, *Kim Il Sung in the Khrushchev Era*; James F. Person, "'We Need Help from Outside': The North Korean Opposition Movement of 1956," *Cold War International History Project Working Paper #52* (August 2006).

<sup>785</sup> "The diary of V.I. Ivanov, the Soviet Ambassador to the DPRK, in the period of January 20 to 30, 1956 (January 20, 1956)," AVPRF, f. 0102, op. 12, p. 68, d. 5, l. 27.

<sup>786</sup> "Program of Stay for the DPRK governmental delegation in the Soviet Union (July 1956)," AVPRF, f. 0102, op. 12, p. 69, d. 10, ll. 4-6.

<sup>787</sup> "The diary of V.I. Ivanov, the Soviet Ambassador to the DPRK, in the period of February 08 to March 27, 1956 (February 08, 1956)," AVPRF, f. 0102, op. 12, p. 68, d. 5, l. 39. This tour practice to

for nuclear cooperation between the U.S. and South Korea presaged the transformation of East Asia into a nuclear base.

North Korean experts' endeavors to apply nuclear technology to the country's economy were sought through their participation in relevant international organizations. One of the few channels to do so opened with the creation of the Joint Institute of Nuclear Research in 1956, which played a significant role in facilitating North Korean knowledge of nuclear physics until 2015. North Korean media closely followed North Korean physicists' participation in it. Admittedly, North Korean physicists' role within the JINR was more that of a novice than a designer. North Korean delegation leader Kim Hyŏn-pong commented that he "heard and saw unimaginable things from world-class scholars" and that North Korea "could harness atomic energy for economic gains based on the combination of Soviet help and domestic rare materials that were abundant."<sup>788</sup> It was only in 1960 that a JINR group led by Chinese physicist Wang Ganchang discovered a rare particle,<sup>789</sup> and for this North Korean physicist Kim Hi-in was awarded an annual scientific prize by the JINR in 1961.<sup>790</sup>

In the catastrophic aftermath of the Korean War and especially in the 1950s, North Korean academia suffered an absolute dearth of tools, materials and staff to conduct research work. A talk in June 1956 between the Soviet ambassador and North Korean scientific leaders shows the bleak situation faced by North Korean physicists. Upon the ambassador's cogent reminder that the Soviet AS wanted to help the North Korean counterpart, the president and

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the world's first nuclear power plant was repeated later. See *Bulletin 2* (April - June 1957), p. 83.

<sup>788</sup> *Rodong Shinmun* October 03, 1956.

<sup>789</sup> *Rodong Shinmun* March 29, 1960.

<sup>790</sup> *Rodong Shinmun* July 07, 1961.

the vice-president of the North Korean AS revealed that the most serious obstacle plaguing North Korean academia was the absence of qualified cadres. And while the North Korean AS planned to start a study in nuclear physics, they continued, “literature, theoretical works, trained cadres and fissionable elements” were completely lacking. Although the North Koreans knew that radioactive isotopes were being used in medicine and agronomy, they could not build upon this knowledge due to the lack of scientists. Hence, the two leaders hoped that the Soviet AS could offer assistance in nuclear physics.<sup>791</sup> In December, Kim Hyŏn-pong revealed that although the nuclear physics department had been newly created at Kim Il-sung University, it was not adequately staffed.<sup>792</sup> A North Korean mathematician stated that North Korean science lagged behind that of advanced countries “not by several decades but by several centuries.”<sup>793</sup>

Against all odds, North Korean physicists endeavored to learn nuclear physics from the Soviet Union and other countries, with a view to using radioactive isotopes in economy.<sup>794</sup> Recent trends in nuclear physics and relevant fields of other countries were regularly circulated through the *Bulletin* of the North Korean AS.<sup>795</sup> Soviet scholars continued to visit North

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<sup>791</sup> “The diary of V.I. Ivanov, the Soviet Ambassador to the DPRK, in the period of May 24 to June 11, 1956 (June 11 1956),” AVPRF, f. 0102, op. 12, p. 68, d. 5, ll. 121-124.

<sup>792</sup> “A meeting between E.L. Titorenko, the second secretary of the Soviet Embassy in the DPRK, with Kim Hyŏn-pong (December 04, 1956)” AVPRF, f. 0102, op. 17, p. 26, d. 5, l. 2.

<sup>793</sup> *Bulletin* 1 (January - March 1957), p. 4

<sup>794</sup> To Sang-rok, *Wŏnja enerūgi wa kŭ ūi p'yŏnghwajŏk riyong* [Atomic Energy and Its Peaceful Use] (Pyongyang: Kungnip Ch'ulp'ansa, 1956).

<sup>795</sup> In addition to numerous accounts on Soviet research works, countries with established scientific infrastructure including India and Canada were introduced.

Korea.<sup>796</sup> The 1957 agreement between the North Korean and Soviet Academies of Sciences served as a shot in the arm for North Korea. Though a lot of interest was paid to using radiation technology,<sup>797</sup> some of the isotopes were “hard to import because of their short half-lives.”<sup>798</sup> Meanwhile, North Korean physicists knew that even a tiny amount of radioactive isotopes could cause lethal damage that would require protective measurements and strict regulations.<sup>799</sup> By early 1959, the long-term plan for nuclear physics was set, with the focus on the application of radioactive isotopes, the expansion of the number of trained scientists and preparation to introduce nuclear reactors. Once the production of radioactive isotopes became possible, the plan predicted, “research works would be done that would make a greater profit.”<sup>800</sup>

May 1957 was when the U.S. scheme to deploy nuclear weapons in South Korea in violation of the truce agreement. Security-centered scholarly works simply assume that the deployment of U.S. nuclear weapons in South Korea was the turning point that drove the North Korean leadership to choose the path of “going nuclear.”<sup>801</sup> However, my examination of

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<sup>796</sup> *Bulletin* 4 (October - December 1957), pp. 109-110.

<sup>797</sup> *Bulletin* 1 (January - February 1959), pp. 53-4; *Bulletin* 2 (March - April 1959), pp. 21-22.

<sup>798</sup> *Bulletin* 5 (September - October 1958), pp. 29-32.

<sup>799</sup> To Sang-rok, *Tongwi wŏnso ran muŏshin'ga* [What is Isotope] (Pyongyang: Kungnip Ch'ulp'ansa, 1959), pp. 124-132.

<sup>800</sup> *Bulletin* 1 (January - February 1959), p. 15.

<sup>801</sup> Hans Kristensen and Robert Norris, “A history of US nuclear weapons in South Korea,” *Bulletin of the Atomic Scientists* 73:6 (2017), pp. 349-357; Leon V. Sigal, *Disarming Strangers*; Michael Mazarr, *North Korea and the Bomb: A Case Study In Nonproliferation* (New York: St. Martin's Press, 1995), pp. 15-17.

North Korea-Soviet diplomatic conversations during this period strongly indicates that North Korean politicians were more concerned at exploiting higher propaganda values from the U.S.'s offensive actions. North Korean, Soviet, and Chinese diplomats began to discuss the U.S. plan from May 1957. North Korea made robust efforts to back Soviet proposals to create a "nonnuclear zone" and ban nuclear weapons testing.<sup>802</sup> In February 1958, during a talk about a proposal to create a "nonnuclear zone" in Europe, the North Korean ambassador to the Soviet Union mentioned that creating such a zone in Asia would be of great importance for the Asian people.<sup>803</sup> Subsequently in March and April that year, Kim Il-sung recognized the significance of the Soviet Union's unilateral suspension of nuclear tests,<sup>804</sup> saying that this decision was ardently supported by "all of the Korean people."<sup>805</sup> Indirectly criticizing U.S. atomic testing, a joint study conducted in early 1959 by Kim Il-sung University and the North Korean AS reported that rainwater near Pyongyang, far from the Pacific Testing Grounds, was

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<sup>802</sup> "Memorandum, relayed to comrade Pushkin G.M. by Lee Sin-p'al, the North Korean Ambassador to the USSR, translated from English (August 28, 1958)," AVPRF, f. 0102, op. 15, p. 81, d. 5, ll. 25-31.

<sup>803</sup> "Reception of Lee Sin-p'al, the North Korean Ambassador to the USSR, by N.T. Fedorenko, the Soviet Deputy Minister of Foreign Affairs (February 25, 1958)," AVPRF, f. 0102, op. 14, p. 75, d. 4, ll. 1-2.

<sup>804</sup> "A meeting between V.I. Pelishenko, the Soviet charge d'affaires of the Soviet Union in the DPRK, and Kim Il-sung (March 27, 1958)," AVPRF, f. 0102, op. 14, p. 75, d. 8, l. 190; *Rodong Shinmun* April 1, 1958.

<sup>805</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, in the period of March 17 to April 18, 1956 (April 7, 1958)," AVPRF, f. 0102, op. 14, p. 75, d. 6, ll. 95-96.

radioactive.<sup>806</sup> In the same year, Khrushchev proposed creating a “nonnuclear zone” in the Far East and the Pacific Ocean. In response to this call, North Korean Minister of Foreign Affairs stated that all North Korean people supported Soviet foreign policies, especially for creating a “nonnuclear zone” in the Far East.<sup>807</sup> In August 1959, the North Korean ambassador relayed the official memorandum to the Soviet Vice Minister of Foreign Affairs for circulation in the 14th U.N. General Assembly on the situation of the Korean Peninsula. In the late 1950s, North Koreans perceived the introduction of U.S. nuclear weapons to South Korea simply as the continuation of raising tension on the Korean Peninsula and of proliferating atomic weapons in the region.<sup>808</sup>

Celebrating the 10<sup>th</sup> anniversary of the country’s founding, the “Peaceful Use of Atomic Energy” exhibition in Pyongyang in 1958 offered a great opportunity to popularize the Soviet “Peaceful Atoms” program among North Koreans. Evidence indicates that the Soviet Union took the initiative of staging this exhibition in several countries between 1957 and 1959.<sup>809</sup> The Pyongyang exhibition had a grand opening with 50 different cutting-edge devices, 10 types of models and 30 kinds of blueprints, displayed in eight sections.<sup>810</sup> It was a “crowded

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<sup>806</sup> To Sang-rok, *What is Isotope*, pp. 133-134.

<sup>807</sup> “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, in the period of January 21 to March 24, 1959 (March 16, 1959),” AVPRF, f. 0102, op. 15, p. 81, d. 7, l. 57.

<sup>808</sup> *International Life* 7 (April 1959), pp. 1-2.

<sup>809</sup> “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, in the period of October 1 to 25, 1957 (October 21, 1957),” AVPRF, f. 0102, op. 13, p. 72, d. 5, l. 286.

<sup>810</sup> *Bulletin* 5 (September - October 1958), pp. 58-59.

success.”<sup>811</sup> In September 17, Kim Il-sung visited the exhibition and left with the following remarks: “I saw the essence of great Soviet science through the exhibits of this “Peaceful Use of Atomic Energy” exhibition. Atomic energy that resulted from humankind’s labor must contribute to humanity. The development of atomic energy for peaceful application in the Soviet Union brings happiness to the world’s people. The exhibition that shows such achievements would be greatly helpful for the development of our country’s economy. ...”<sup>812</sup> North Korean leadership requested a 15-day extension right before the scheduled end of the month-long affair and Moscow granted approval.<sup>813</sup> In addition, Soviet exhibition crews made presentations and gave lectures in more than nine North Korean cities which were attended by some 24,000 people. In Pyongyang, over 28,000 citizens watched Soviet movies such as *the First in the World* and *Tagging Atoms*.<sup>814</sup>

Although North Korean scientists by the late 1950s were using radiological apparatuses for industrial purposes such as roentgenoscopes or liquid-level meters,<sup>815</sup> both of which were devices that help users to examine the inside of machines or pipes using radioactive

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<sup>811</sup> *Rodong Shinmun* September 17, 1958.

<sup>812</sup> *Rodong Shinmun* September 18, 1958.

<sup>813</sup> “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, in the period of September 29 to October 10, 1958 (October 06, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 7, l. 427.

<sup>814</sup> “The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, in the period of October 18 to November 03, 1958 (October 28, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 7, ll. 459-60; *Rodong Shinmun* October 30, 1958.

<sup>815</sup> *Science and Technology* (October 1956), pp. 65-73; *Bulletin 5* (September - October 1959), pp. 45-46.

materials, there was no command center to direct the country's indigenous nuclear program until 1965. Meanwhile, below the 38<sup>th</sup> parallel, the Board of Atomic Energy, the realization of the "Atoms for Peace" program in South Korea, was created in 1959 and American assistance provided funds to purchase the first research reactor. The fact that North Korea was lagging behind its southern as well as socialist brothers in introducing atomic energy pushed the North Korean leadership to seek to get on the Soviet list of nuclear recipients. Soviet documents suggest negotiations between North Korea and the Soviet Union over the transfer of nuclear facilities to North Korea, by the initiative of the former, began around April 1958. The North Korean ambassador to the USSR asked the Soviet Minister of Foreign Affairs about the prospect of receiving help to draw plans to introduce nuclear power in North Korea. The ambassador made the appeal that his country had neither the experience nor the specialists, and that the relevant work could not be initiated without Soviet help.<sup>816</sup> The Soviet Union agreed to receive a North Korean delegation for familiarizing itself with nuclear activities.<sup>817</sup> Evidence indicates that the delegation was mostly concerned with how to "rationally use atomic energy befitting the conditions of the DPRK." The delegation leader intended to ask for technical documents and to find out if such a nuclear power plant construction project in North Korea would be deemed appropriate by Soviet experts. The delegation was humble and practical in approaching the Soviets in this matter. Also, the delegation wanted to get advice on the issue of applying atomic energy in the thermal power plants that were planned to be

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<sup>816</sup> "A meeting between A.A. Gromyko and Lee Sin-p'al, the DPRK Ambassador to the USSR (April 28, 1958)," AVPRF, f. 0102, op. 14, p. 75, d. 4, ll. 3; and 5.

<sup>817</sup> "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, in the period of May 13 to 29, 1958 (May 17, 1958)," AVPRF, f. 0102, op. 14, p. 75, d. 6, l. 144.



constructed in Pyongyang, Hŭngnam, and Chŏngjin. North Korea had fissionable materials such as thorium and beryl and the delegation wanted to learn how to mine and process them.<sup>818</sup> However, it took an additional year for the North Korean government to appoint another delegation to reach an agreement to get Soviet help in nuclear physics and using atomic energy for economic development.<sup>819</sup>

While much about these initial North Korea-Soviet negotiations over the transfer of nuclear facilities to North Korea seems to be locked up in classified archives, an agreement providing Soviet technical assistance to North Korea for the peaceful use of atomic energy was reached on September 7, 1959, three years after a similar nuclear agreement was signed between the U.S. and South Korea. A *Rodong Shinmun* article stated that North Korea ardently welcomed the decision with “boundless pleasures.” Through the agreement, North Koreans could start introducing atomic energy—a “masterpiece of the humankind’s science”—in the domestic economy for the first time in history. This fully accorded with the desire of “workers racing as on a thousand-li horse to become better off and move beyond a backward status.” Like South Koreans welcoming the shipment of research reactors and relevant equipment from America in 1959, North Koreans would soon receive nuclear devices including a research reactor, radiochemical laboratory and a betatron.<sup>820</sup> Study opportunities in the Soviet Union were expanded for North Korean specialists, as their southern countrymen were already

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<sup>818</sup> “A meeting between N.M. Shesterikov, the counselor in the Soviet embassy in the DPRK, and Chŏng Chun-t’aek (June 14, 1958),” AVPRF, f. 0102, op. 14, p. 75, d. 8, ll. 224-225.

<sup>819</sup> “A meeting between G.M. Pushkin, the Soviet Deputy Minister of Foreign Affairs, and Lee Sin-p’al, the DPRK Ambassador to the USSR (May 14, 1959),” AVPRF, f. 0102, op. 15, p. 81, d. 5, l. 4.

<sup>820</sup> *Rodong Shinmun* September 08, 1959; *Pravda* September 08, 1959.

studying in the U.S. By the late 1950s, Soviet science radiated impressions of advanced, nuclear-powered, peaceful communism; Soviet science not only cured a Japanese woman exposed to fallout in Nagasaki in 1945,<sup>821</sup> but it also loaded thermonuclear bombs in an intercontinental ballistic missile (ICBM).<sup>822</sup> In this “favorable condition,” as a North Korean physicist suggested, North Korea would soon pioneer ways to harness atomic energy as electric power, repaying the Soviets’ noble assistance in the future.<sup>823</sup>

After repeated requests by the North Korean leadership in the second half of the 1950s, Soviet assistance finally granted a chance for North Korea to open a new chapter in the country’s nuclear history, where the production of radioactive isotopes became possible. However, it took several years before operators switched on North Korea’s first research reactor in the Yongbyon Center in 1965, three years after South Korea’s first research reactor went online in Seoul. North Korea had only been able to sell “useful ores,” containing fissionable materials, for more foreign currency throughout the 1950s and 1960s without an appropriate technological base.<sup>824</sup> To Kim Il-sung’s discomfort, South Korea not only was racing ahead with the “Atoms for Peace” program, but also was benefiting from American industrial goods and surplus agricultural products. His pet project, the First Five-Year Plan (1957-1961) of

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<sup>821</sup> *Rodong Shinmun* December 07, 1959.

<sup>822</sup> *Choguk powi rŭl wihayŏ* [For the Homeland Security] 10 (October 1957), p. 12; *International Life* 2 (January 1959), pp. 14-15.

<sup>823</sup> *Bulletin* 5 (September - October 1959), pp. 8-11.

<sup>824</sup> A similar trend of the Soviet Union to the Western market in the 1950s, see Oscar Sanchez-Sibony, *Red Globalization: The Political Economy of the Soviet Cold War from Stalin to Khrushchev* (New York: Cambridge University Press, 2014), p. 109.

North Korea, did not produce enough clothing materials, food, and houses by the time it was completed in 1959. Therefore, as the next section shows, North Korean planners chose to prioritize uplifting the living standard of the nation, which led to political and economic disinterest regarding nuclear power.

### ***Building the Yongbyon Center amid the Sino-Soviet Split, 1960-1965***

In this section, I examine what happened in North Korea's dealing with nuclear matters from 1960 to 1965, showing that North Korea's first research reactor was regarded as more a white elephant than a chance to make a leap towards the future of abundant energy. There still exist tremendous difficulties in reconstructing North Korean nuclear realities in this period due to the limited availability of reliable data. Currently available Soviet diplomatic sources contained less detailed information starting from late 1959, compared to the previous years. One of the main reasons for this change might be the tightening of information flow from North Korea to foreign diplomatic representatives stationed in North Korea. The removal of Nam Il, whose Soviet name was Yakov Petrovich, from the position of Minister of Foreign Affairs in October of 1959 captured this change.<sup>825</sup> Unfortunately, relevant North Korean publications seem to be very timid to talk about their own nuclear history.<sup>826</sup> Bypassing these hardships, I analyze

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<sup>825</sup> Ironically, Kim Il-sung revealed to the Soviet Ambassador that without Nam Il he could not handle any works, emphasizing Nam Il was much closer to him than his [Kim Il-sung's] own wife in early that year. "The diary of A.M. Puzanov, the Soviet Ambassador to the DPRK, in the period of December 10, 1958 to January 01, 1959 (January 01, 1959)," AVPRF, f. 0102, op. 14, p. 75, d. 7, ll. 1-4. This abrupt change in information control needs to be studied further.

<sup>826</sup> Yi Chŏng-sŏk and Kim Sŏng-su, *2lsegŭ ūi haek enerŭgi*; Wŏn Myŏng-uk, *Mije ūi tae Chosŏn haek*

the previously untapped materials that are housed in the Russian State Archive of Economy. These documents were mostly produced by Soviet engineers who managed North Korea-Soviet nuclear exchanges in this period.

Soviet documents indicate that North Korea in the early 1960s was *not* eager to receive the basic materials and equipment for their first nuclear facility. One possible explanation for this tepid interest was that the North Korean leadership, due to their tight budget, prioritized other building projects such as the Pyongyang Thermal Power Plant, textile factories, and a television center, all supported by Soviet parts. Simultaneously, North Korean planners' primary goal was to establish a "self-reliant national economy" while fortifying the country. In this context, Kim Il-sung's focus on developing light industry and agricultural economy based on the established heavy industry can be clearly seen in the list of important goals to be achieved in the first Seven-Year Plan (1961-1967). In this list, the 2-MW atomic reactor appeared after a long list of thermal and hydro-power stations, and different types of factories for metallurgy, chemical industry, machine-building industry, and light industry.<sup>827</sup> After allocating a large sum of funds to defense, Kim Il-sung chose to first satisfy peoples' imminent needs over time-consuming nuclear physics research. In April 1962, when the Soviet side asked about shipment of equipment for an atomic reactor, the corresponding North Korean officer

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*apsal ch'aektong kwa kü p'asan üi pulgap'isöng* [Nuclear Machinations of American Imperialism against Korea and Inevitability of their Failure] (Pyongyang: Sahoe Kwahak Ch'ulp'ansa, 2013).

<sup>827</sup> "The list of important enterprises and other objects, which are building and planned for construction in the DPRK in the forthcoming seven years 1961-1967 (June 15, 1961)," Russian State Archive of Economy (RGAE), f. 365, op. 2, d. 1716, ll. 341-343.

revealed that the shipment should be “partially postponed due to their currency difficulties.”<sup>828</sup> In May, a North Korean official expressed its wish to delay the shipment of nuclear devices from the projected deadline of 1963 to 1965;<sup>829</sup> the reactor took up only 2% of the whole amount of supplies that were planned to be sent to the DPRK in 1963 on Soviet credit and trades.<sup>830</sup> This reluctance of receiving nuclear materials and devices can be felt in 1962 and 1963.

Soviet documents suggest that North Korea’s cash-strapped situations largely influenced the construction process of the “Yongbyon furniture factory,” a North Korean term for their first nuclear research center. Though the fittings (*armatura*) for a reactor seem to have

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<sup>828</sup> “A meeting between comrade M.I. Siryakov, the acting economic counselor in the Soviet embassy in the DPRK, and Son Chu-bok, the acting chairman of the Korean Association of Foreign Trade “Sölbı” (April 21, 1962),” RGAE, f. 365, op. 2, d. 1768, l. 147.

<sup>829</sup> “A summary of the works of a group of experts, dispatched to the DPRK for carrying out with the Korean side a preliminary agreement of the volume of supplies of equipment and materials from the USSR to the DPRK in the year of 1963 (December 30, 1962),” RGAE, f. 365, op. 2, d. 1803, l. 35.

<sup>830</sup> “The list of enterprises and objects, which are built in the DPRK under technical assistance of the Soviet Union, for which the delivery of equipment and materials is scheduled from the USSR to the DPRK in the year of 1963,” RGAE, f. 365, op. 2, d. 1803, l. 38. The biggest portion in the list was set for the Pyongyang Thermal Power Plant, which was roughly 71.4% (21.5 million rubles out of total 30.1 million rubles). Different evidence indicates that minor changes had been made during the North Korea-Soviet negotiations in May 1962; however, the percentage taken by the North Korean nuclear facility was still less than 5% (1.16 million rubles out of total 26.94 million rubles). See “Appendix,” RGAE, f. 365, op. 2, d. 1768, l. 184.

been delivered to North Korea at some point before August 1962,<sup>831</sup> the country's officials were debating whether they should send those fittings back to the Soviet Union.<sup>832</sup> As indicated in the Soviet technical reports, at the construction site of the center, 92 kilometers from Pyongyang near the Kuryong River, the pace of the building works was slow even with one thousand strong North Korean workers; communication not only between Yongbyon and Moscow, but also among Soviet and North Korean experts on site was never smooth; a number of pits were occasionally flooded; the deadlines of individual components of the whole project were usually delayed. For example, although "certain attention" from North Korea was obviously given to the site, the delivery of equipment and, more importantly, technical documents including scrapbooks (*al'bom*) from the Soviet Union, was almost never made on time. As of April 30, 1963, laying foundations of the main reactor building did not begin; the visiting Soviet engineers pointed out that most of the project for physical laboratory building should be redone and that the projected ventilation system as well as an isotope laboratory building were not satisfactory due to the lack of technical documents and "indecision of Korean comrades."<sup>833</sup> In May, the foundation works suffered a delay again because timber resources lacked and a team of geologists dug "manually" a well of more than 8 meters next to the foundation pit of the main building due to the lack of drilling rigs.<sup>834</sup> However, the North

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<sup>831</sup> "A meeting with comrade Kye Ŭng-t'ae, the Vice Minister of Foreign Trade of the DPRK, held as of August 25, 1962, by his initiative," RGAE, f. 365, op. 2, d. 1768, l. 204.

<sup>832</sup> "A meeting between I.F. Larionov, the economic counselor in the Soviet embassy in the DPRK, and Son Chu-bok (November 27, 1962)," RGAE, f. 365, op. 2, d. 1768, l. 236.

<sup>833</sup> "A summary," RGAE, f. 365, op. 2, d. 1803, ll. 88-92.

<sup>834</sup> "A summary," RGAE, f. 365, op. 2, d. 1803, ll. 101-102.

Korean leadership appeared to have the reactor and other laboratories operational in celebration of a national holiday of August 15, 1964,<sup>835</sup> which turned out to be impossible to be carried out due to usual underperformance that ravaged the construction site.<sup>836</sup> Most of the necessary equipment and materials for the center seem to have been delivered following the order of betatron, a reactor, cobalt installation, and radiochemical laboratory by the end of 1964.<sup>837</sup> The dawn of North Korea's first "peaceful" nuclear facility started only "partially" in September 1965,<sup>838</sup> one year later than the North Korean leadership's initial plan. Currently, no evidence indicates that Kim Il-sung actually visited, or mentioned about, the construction site of the center.

While North Korea's diplomacy in this period was studied in detail, a slight shift that transpired in one of the country's nuclear narratives—protecting socialism—remains unanalyzed. North Korea persistently condemned nuclear testing and atomic threat by the U.S. from as early as 1946. North Koreans thought that the international peace could be achieved by supporting the Soviet Union, the only socialist "nuclear shield" that held the U.S.'s aggressor atoms in check. It was only around when the Partial Test Ban Treaty was signed in August 1963, that North Korean media began to express its support for the idea of having

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<sup>835</sup> "A summary," RGAE, f. 365, op. 2, d. 1803, ll. 166-169.

<sup>836</sup> "A summary," RGAE, f. 365, op. 2, d. 1831, ll. 2-6.

<sup>837</sup> "A meeting with comrade Li Tae-baek, a trade attaché of the Embassy of the DPRK in the USSR, held as of March 7, 1964" RGAE, f. 365, op. 2, d. 1831, ll. 18-20.

<sup>838</sup> "The list of enterprises, structures, and different objects, which are built and to be constructed under technical assistance of the Soviet Union," Russian State Archive of Contemporary History, f. 5, op. 49, d. 891, l. 124.

nuclear weapons by “socialist countries including China.”<sup>839</sup> This view of “socialist proliferation,” the core of which was to justify the possession of nuclear weapons by a socialist regime for exclusively defensive purposes, coincided with a change in intra-bloc relations, as the DPRK sided with the PRC in Sino-Soviet rivalry from late 1962 to the fall of Nikita Khrushchev in October 1964.<sup>840</sup> A *Rodong Shinmun* column welcomed the PRC’s successful nuclear test in October 1964, (same as in 1949 when the Soviet Union revealed its own bomb), proclaiming that protecting state sovereignty and deterring the nuclear aggression of American “imperialists” were among the main reasons for the nuclear test.<sup>841</sup> In the eyes of the North Korean leaders, the PRC’s “going nuclear” was a lawful continuation of nuclear activities that aimed at the creation of a nuclear-free world.<sup>842</sup> This North Korean discourse of proliferation, or building bombs for protecting state sovereignty and peace, revived in the wake of the end of the Cold War.

In the course of the first half of the 1960s, an emerging ideology of *Juche* in nuclear matters began to be discussed by North Korean nuclear experts. At a meeting with P. D.

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<sup>839</sup> *Rodong Shinmun* August 4, 1963.

<sup>840</sup> For an overview of Sino-Soviet rivalry, see Lorenz M. Lüthi, *The Sino-Soviet Split: Cold War in the Communist World* (Princeton: Princeton University Press, 2008). For how Sino-Soviet rivalry unfolded in the Third World, see Jeremy Friedman, *Shadow Cold War: The Sino-Soviet Competition for the Third World* (The University of North Carolina Press, 2015).

<sup>841</sup> *Rodong Shinmun* October 19, 1964.

<sup>842</sup> For a brief account of the role of Soviet assistance in the development of nuclear weapons in the People’s Republic of China, see Li Guan'tsiun' and Fan Tintin, “Pomoshch' SSSR Kitaiu v razrabotke iadernogo oruzhiia v 1950-kh gg.,” *Voprosy istorii* 11 (November 2012), pp. 132-136.



Prokudin, the chief Soviet engineer for North Korea's first nuclear reactor, Kim Hyön-pong, the then-Vice Chairman of the State Committee of Atomic Energy and leading nuclear physicist of the country, explained the slogan of "self-reliance" (*charyök kaengsaeng*) in August 1962, which would later serve as the most important component of *Juche* Thought in economy.<sup>843</sup> Refuting the argument that *Juche* in economy is a closed economy, Kim stated that the slogan's core was to recognize the utmost importance of "considering historical and contemporary conditions of our country [in economy and diplomacy]." Given that Korea suffered Japanese colonial rule and that "currently southern Korea is occupied by American imperialists," North Korea should construct a strong economic base, with a view to "healing the wounds of southern economy rapidly." By producing a sufficient amount of grains on its own strength in North Korea, Kim continued, other bloc countries that were in dire need of food resources would not have to send grains to North Korea. However, Kim implied that North Korea's participation in the division of labor in the socialist bloc was out of the question, for North Korean industry was "not prepared."<sup>844</sup> This line of developing techno-science "based on its own strength" would soon dominate in the discursive space of scientific communities in North Korea. In September 1964, To Sang-rok, the most prominent physicist in the country, summarized how basic science progressed along with the construction of the DPRK. He argued that the foremost task for North Korean scientists was to establish *Juche*. That is, scientists and specialists should arm themselves with "revolutionary spirit of self-reliance." He proudly listed the sweeping

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<sup>843</sup> On the historical evolution of *Juche* Thought, see James F. Person, "Solidarity and Self-Reliance."

<sup>844</sup> "A meeting with comrade Kim Hyön-pong, the Vice Chairman of the Committee of atomic energy under the Cabinet of Ministers of the DPRK, held as of August 29, 1962," RGAE, f. 365, op. 2, d. 1768, ll. 208-210.

scientific achievements that North Korea made under the this spirit, which included Kim Pong-han's medical research of the meridian system (*kyōngnak*), Ri Sūng-gi's chemical research of vinalon, and his own group's successful formulation of a stochastic differential equation. However, he only stated in passing that the "first nuclear power plant was built in a socialist country."<sup>845</sup> Considering that To Sang-rok served as an authoritative figure in legitimizing Soviet science in the previous decades,<sup>846</sup> the encroachment of *Juche* in nuclear matters severely narrowed the scope of North Korean reception of Soviet nuclear science.

However, the establishment of *Juche* in nuclear science had nothing to do with building nuclear warheads. Kim Il-sung argued for the utilization of nuclear energy (*wōnjaryōk*) in the DPRK first at the Fourth Party Congress in 1961; however, the main focus until the early 1980s was put on the industrial application of radioactive isotopes, when he declared the importance of developing nuclear power plant at the Sixth Party Congress in 1980. In their endeavors to create a socialist regime with an affluent, self-reliant economy, North Korean scientists continued to concentrate their research capabilities on how to apply isotopes and radiation technologies to industry to boost production.<sup>847</sup> While examining North Korean nuclear history after 1965 lies beyond the scope of this chapter, I assume that the focus on the industrial application of "peaceful" nuclear technologies lasted for a while after North Korea's first research reactor went online in 1965.

### ***Concluding Remarks***

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<sup>845</sup> To Sang-rok, *Worker* 18 (September 1964), pp. 23-31.

<sup>846</sup> To Sang-rok, *Worker* 1 (January 1958), pp. 47-53.

<sup>847</sup> *Bulletin* 3 (May – June 1962), p. 22-28.

What can we learn from North Korea's embrace of peaceful use of atomic energy? First, the prevailing discourse that North Korea's "going nuclear" was destined is debatable given the historical evidence. While existing academic works point to a set of comments made by North Korean "experts and officials," these opinions do not seem to represent Kim Il-sung's nuclear ambition, or do not represent that Kim wished to make nuclear bombs.<sup>848</sup> Unless clearer evidence is found showing Kim's decision to build bombs, which is very unlikely, North Korea's nuclear ambition can be traced back to the Korean War and even earlier in the 1940s. Rather, a mandate to develop its economy and industry with the "peaceful" application of nuclear power, which was largely shared by the leaders in the decolonizing world, is more convincing in understanding North Korea's pursuit of nuclear power. North Korea once again made frequent entreaties to the Soviets for help building a nuclear power plant in the 1960s and the 1970s,<sup>849</sup> only to be approved by the Soviet Union in the mid-1980s. In exchange for securing cheap electricity, that is, North Korea joined in the International Atomic Energy Agency in 1974 and the Non-Proliferation Treaty (NPT) in 1985. One should bear in mind that some countries with nuclear weapons such as India, Israel, and Pakistan never signed or ratified the NPT, keeping silence about their destructive nuclear capabilities. However, the North Korean nuclear energy program crashed, probably for the same economic reasons that seriously narrowed the boundaries of choices for its leadership. With more evidence becoming available in the future, we will better understand political and scientific leaders' effort to realize "peaceful" nuclear power for economic development in the DPRK during the Cold War period.

A case study of early North Korea's "peaceful" nuclear enterprise provides a

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<sup>848</sup> Balazs Szalontai and Sergey Radchenko, "North Korea's Efforts," pp. 27-28.

<sup>849</sup> Balazs Szalontai and Sergey Radchenko, "North Korea's Efforts," pp. 42; and 56.

meaningful reminder that the North Korean nuclear weapons program, though we do not fully know much about how it started and how it developed, was a reluctant response to ever-tightening economic situation as well as U.S.'s nuclear threats in the much later period. In the early 1960s, one of the two main currents of North Korean nuclear narratives—protecting socialism—transformed in conjunction with the Sino-Soviet split; however, the discursive aim of “socialist proliferation” pointed to the making of a nuclear-free world, not to the nuclear armament of every socialist regime. That is, the Soviet notion of a “nuclear shield” was extended to the PRC, against destructive U.S. atoms. Unfortunately, it is impossible at this point to cross-check official North Korean statements produced from the mid-1960s against reliable archival data.

Also, the North Korean leadership's peace and denuclearization agendas could be revisited in context. From early on, North Korea was aware of the destructive power and extensive environmental damage caused by American nuclear testing. In this regard, Kim Il-sung's backing for peace and denuclearization of the world could be seen as something more than sheer propaganda.<sup>850</sup> It is important to understand that peace and denuclearization *on Kim Il-sung's terms* were always closely linked to the economic development of North Korea, as its nuclear weapons program, one of the representative cases of Cold War secrecy, might have been started as a desperate breakthrough that was expected to facilitate achieving, ironically, peace and subsequent denuclearization of the Korean Peninsula.

Finally, it is not hard to observe that in the eyes of North Koreans not much has

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<sup>850</sup> Kim Il-sung, *Chōnjaeng ūl pangjihago p'yōnghwa rŭl suhohanŭn kōsŭn illyu ap'e nasōn ch'omi ūi kwaje* [Preventing Wars and Protecting Peace is the Most Urgent Task of the Humanity] (Pyongyang: Chosōn Nodongdang Ch'ulp'ansa, 1986).

changed between the early 1950s and the present in terms of nuclear aggression and economic sanctions designed and practiced by American “imperialists.” Unfortunately, there are no signs of concession from the U.S. that wants the denuclearization of North Korea *first* and the DPRK that wants economic sanctions lifted *first*. As long as both parties want peace and denuclearization of the Korean Peninsula on their own terms, the nuclear status quo will linger in the years to come.

## Conclusion

One month after the fall of Nikita Khrushchev from the highest position in Soviet leadership in October 1964, North Korea resumed sending a high-profile delegation to the Soviet Union. It was led by Ch'oe Yong-kön, Kim Il-sung's closest comrade during the anti-Japanese resistance in 1930s Manchuria, before its friendly visit to Third World countries including Egypt, Algeria, Mali, Guinea, Yemen, and Cambodia. At a Kiev airport on November 19, Ch'oe Yong-kön gave a familiar speech to the Soviet audience that friendship and cooperation between the two countries would enhance based on the principles of Marxism-Leninism and proletarian internationalism. He quickly reiterated the scope and volume of assistance that North Korea received in the 1950s.<sup>851</sup>

Signaling a compromise from the North Korean leadership's hard line on its Soviet counterpart, Ch'oe Yong-kön's speech sounded like North Korea was ready to be fully reintegrated to the Soviet-led socialist bloc, as in the 1950s. Subsequently, a Soviet delegation, led by Alexei N. Kosygin, the Chairman of the Council of Ministers of the Soviet Union, paid a return visit in February 1965.<sup>852</sup> This was followed in 1966 by a new, long-term loan in the amount of 1.6 billion rubles.<sup>853</sup> To the Soviet delegation in Pyongyang, Kim Il-sung repeated

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<sup>851</sup> AVPRF, f. 0102, op. 24, p. 48, d. 9, ll. 1-20, partially translated in Park Chong-hyo, *Rösia Yönbang Oemusöng Taehanjöngch'aek Charyo 2* (Seoul: Sönin, 2010), pp. 279-280.

<sup>852</sup> AVPRF, f. 0102, op. 25, p. 50, d. 10, ll. 1-32, partially translated in Park Chong-hyo, *Rösia Yönbang Oemusöng Taehanjöngch'aek Charyo 2*, pp. 282-287.

<sup>853</sup> Natalia Bazhanova, Chun-yong Yang trans., *Kiro e söñ Pukhan kyöngje: taeoe kyönghyöp ül t'onghae pon silsang* (Seoul: Han'guk Kyöngje Shinmunsa, 1992), p. 28.

a praise that the Soviet people “have given the material assistance and moral support” to North Korea and that “our [North Korean] people never forget the support and help by the Soviet Union.”<sup>854</sup> However, these diplomatic events were never followed by North Korea’s increased engagement of techno-scientific cooperation with other bloc countries—socialist networks of techno-science—as in the previous decade. Rather, North Korean leadership chose to maintain its limited contact with the bloc countries through the form of a bilateral agreement of techno-scientific cooperation, while keeping silence about cooperation that once supplied the country with the backbone of its industrial economy. From the perspective of North Korean leadership in the mid-1960s, North Korea could sustain its economic development as in the late 1950s and early 1960s, only when Kim Il-sung’s guidance and instructions were thoroughly applied by its people.

It was in this context that Ri Il-kyōng, North Korean Minister of Trade, displayed his embarrassment before the curious Soviet ambassador, discussed in the introduction chapter. By the mid-1960s, North Korean officials were supposed to tell their foreign interlocutors only about the superiority of their own mode of development that was demonstrated by the rapid increase of industrial production in the late 1950s and early 1960s. At the same time, some North Korean leaders, including Ri Il-kyōng, were troubled by the dilemma that North Korea faced: a choice between blind faith on the country’s “self-reliant” techno-scientific capability and a decade-long recognition on advanced techno-science of the Soviet Union. But this discord was never addressed in a way that was conducive to the balanced development of North Korea’s economy as well as science and technology. Regrettably, there was not a single figure

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<sup>854</sup> *Pravda* February 12, 1965.

inside the North Korean leadership, which could hold in check Kim Il-sung's authority as the nation's supreme planner. Kim Il-sung attributed North Korea's industrial triumph to the establishment of *Juche* among the people. Subsequently, the need to combine revolutionism, an attitude that everything can be achieved with the revolutionary spirit, and expertise, under the Party's guidance was increasingly propagandized.<sup>855</sup>

North Korean planners began to ramp up their efforts to strengthen the national defense starting from when there was a military coup in South Korea on May 16, 1961,<sup>856</sup> which, as the Soviet representative in Pyongyang viewed, made it convenient to mobilize the people and justified the continuation of its own mode of development.<sup>857</sup> In other words, North Korea's thin budget that was to pay for the country's costly engagement with the socialist networks of techno-science by the early 1960s was to be thinner than before. By the mid-1960s, North Korea replaced a substantial part of its contact with the socialist bloc with extensive ideological engineering on its people, which was seen by North Korean leadership as politically desirable and economically cheaper. This change, primarily led by Kim Il-sung himself but rationalized

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<sup>855</sup> *Rodong Shinmun* November 25, 1965.

<sup>856</sup> Cho Su-ryong, "Chŏnhu Pukhan ūi sahoejuŭi ihaeng kwa 'charyŏkkaengsaeng' kyŏngje ūi hyŏngsŏng" [Jaryeokgaengsaeng Economy: North Korea's Socialist Transition and Its Formation in 1953-63] (in Korean) (PhD Diss., Kyung Hee University, 2018), pp. 232-233.

<sup>857</sup> B. Pimenov, "O khode vypolneniya resheniy dekabr'skogo /1962 g./ plenuma TSK Trudovoy Partii Korei (July 10, 1963)," RGANI, f. 5, op. 49, d. 640, l. 288. Another important issue that was often mentioned by the North Korean leadership in explaining the country's low growth rate in industrial production was an unfavorable climate condition. "Obzor razvitiya ekonomiki KNDR za 1965 god (March 1966)," RGANI, f. 5, op. 49, d. 886, l. 6.



by the country’s unprecedented leap in industrial production in the late 1950s which was based on assistance from the Soviet Union and the bloc countries, would turn out to be a self-imposed curse that would permanently deprive North Korea of potentials to improve both the quantity and quality of its interactions with the outside world.

A high degree of growth in terms of industrial production in the period from the late 1950s and early 1960s formed one of the most important driving factors that prevented North Korean planners from steering their course of statecraft towards another direction. As seen in the table below, the scale of North Korea’s industrial production—for both domestic consumption and export—was tremendous enough to make its leadership self-confident about the country’s industrial capability and techno-scientific capacity.

Table 7-1: Production of Industrial Products Per Capita (North Korea, Vietnam, and Mongolia)

Name	Unit	North Korea in Post-War 1953	1963		
			North Korea	Vietnam	Mongolia
Electricity	kWh	132	1,006	26	140
Coal	Kg	92	1,200	192	808
Cast iron		n/a	99.1	0.6	None
Steel		0.5	87.4	None	
Rolled steel		0.4	65.1		
Mineral fertilizers		2.6	72.9	9.5	
Cement		3.0	216.3	27	
Fabrics		m	2.8	19.4	5.2

Source: N. Shiryaev, “Spravka o sostoyanii i perspektivakh razvitiya ekonomicheskogo sotrudnichestva s KNDR (June 12, 1964),” RGANI, f. 5, op. 49, d. 904, l. 68.

Hence, from North Korean leadership’s perspective, demanding its industrial workers,

agricultural producers, and office clerks thoroughly embody the Party's instructions under the name of Technological Revolution, seemed not only tried and tested, but also "rational."<sup>858</sup> The view that North Korea's economic progress was solely made by its people's strength under the guidance of the Party carried the day. Consequently, science and technology that were already supposed to have their justification for existence in the 1950s *only* to enhance industrial development became a goal that should be achieved through an innovative, cheap way pioneered by Kim Il-sung. Time and again, any sorts of counterproductive phenomena in production sites were interpreted as the lack of the workers' will to realize the Party's guidance on technological revolution. However, the 1967 purge of the Kapsan faction, who had been in charge of the country's policy in education as well as techno-science in the 1960s,<sup>859</sup> failed to bring desired results that North Korean planners had initially hoped for. The main problem for stagnation of industrial development in late 1960s North Korea was not about who carried out the Party's guidance. It was, as the Soviet representative in Pyongyang saw correctly, about how effectively that guidance, or *Juche*, could address production-related issues,<sup>860</sup> which

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<sup>858</sup> Chosŏn minjujuŭi inmin konghwaguk kwahagwŏn kyŏngje pŏp'ak yŏn'guso, *Sahoejuŭi kich'o ch'uksŏng ŭl wihan uri tang ŭi kyŏngje chŏngch'aek* (Pyongyang: Kwahagwŏn Ch'ulp'ansa, 1961), pp. 155-158.

<sup>859</sup> Byun Hak-moon, "Pukhan ŭi kisul hyŏngmyŏngnon: 1960-70nyŏndae sasang hyŏngmyŏng kwa kisul hyŏngmyŏng ŭi pyŏnghaeng" [The Technical Revolution Theory of North Korea: Simultaneous Pursuit of the Ideological and Technical Revolutions in the 1960s and 1970s] (in Korean) (PhD Diss., Seoul National University, 2015), pp. 160-163.

<sup>860</sup> Yu. Ognev, "O sentyabr'skom plenumе TsK Trudovoi Partii Korei 1963 goda /Spravka/ (September 17, 1963)," RGANI, f. 5, op. 49, d. 640, l. 337.

turned out to be unsuccessful.

This dissertation shows that North Korea’s short-term industrial success was impossible without “primitive accumulation,” or industrial infrastructure, that was created by assistance given to war-torn North Korea from the socialist bloc. As late as 1958, North Korean economists acknowledged the significance of free aid (*musang wŏnjo*) that was provided from 1953 to 1956. The aids were from the Soviet Union (one billion rubles), communist China (800 million new yuan), East Germany (462 million rubles), Romania (sixty-five million rubles), Bulgaria (twenty million rubles), and Czechoslovakia (113 million rubles). Additional assistance continued to flow to North Korea up until 1958 from the socialist bloc. Kim Il-sung characterized this assistance as “unprecedented” as well as “colossal force of proletarian internationalism.”<sup>861</sup> Although North Korean media avoided mentioning about the same “force” starting in the early 1960s, the degree of benefits that North Korea gained through assistance was enormous in both absolute and relative terms, as seen in the following table.

Table 7-2: Estimations of the Size of Soviet Help Offered by October 1, 1964

Unit: million rubles

	North Korea	Cuba	Vietnam
Free Aid	292.5	7.06	95.4

<sup>861</sup> Ri Yŏng-pae, “Uri nara esŏ ūi sahoejuŭijŏk hwap'ye-shinyong ch'egye ūi surip kwa palchŏn” in *Uri nara ūi inmin kyŏngje palchŏn: 1948-1958* (Kungnip Ch'ulp'ansa, 1958), pp. 354-355. Meanwhile, North Korea received the loans, respectively from Poland (1.125 million rubles) in June 1961 and Czechoslovakia (25.7 million rubles) in the following month. These loans were to be used in supplying industrial equipment and facilities. A. Puzanov, “Ekonomicheskoe i politicheskoe polozhenie Koreiskoi Narodno-Demokraticeskoi Respubliki (August 4, 1961),” RGANI, f. 5, op. 49, d. 452, l. 122.

Credit Offered	505	146.36+33.6	218.3
Credit Written Off	373	n/a	n/a
Technical Help	396.95*	326.98	243.4

Source: M. Suloev, “Spravki (November 5, 1964),” RGANI, f. 5, op. 49, d. 907, ll. 119-120; 125-126; 129.

Remarks: \* As of July 1, 1964.

Among a few reasons for the socialist bloc’s giving help to post-war North Korea, the single most important factor was the Korean War that was prolonged by Iosif Stalin and Mao Zedong. Indeed, both leaders of socialist superpowers wanted to prolong the war in order to sustain a war of attrition to inflict damages on the U.S., whereas Kim Il-sung throughout 1952 prioritized reaching immediate ceasefire. In Kim Il-sung’s view, the price for prolonging the war—to keep American resources to be wasted on the Korean Peninsula—was paid with the gigantic loss of North Korea and especially its industrial infrastructure.<sup>862</sup>

In addition, it is important to understand that assistance, primarily given to compensate for the suffering and losses of the North Korean people which did not simply end in 1953, was combined with weak power projection capabilities of both the Soviet Union and the People’s Republic of China (PRC). To post-Korean War North Korea, Soviet leadership was mostly interested in maintaining the Soviet Union’s image as a reliable partner, rather than be a

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<sup>862</sup> Shen Zhihua ed., *Chaoxian zhan zheng: Eguo dang an guan de jie mi wen jian* [The Korean War: Declassified Documents from Russian Archives] Vol. 1 (Taipei: Zhong yang yan jiu yuan jin dai shi yan jiu suo, 2003), pp. 37-40.

patriarchal patron like in late 1940s Stalinist Russia. Unlike Stalin,<sup>863</sup> both Malenkov and Khrushchev did not have much interest in interfering in the North Korean politics. Although they had capacity to do so, the Soviet leadership in the post-Stalin period hardly projected power to North Korea to enforce its will on its North Korean counterpart. Hence, it is safe to say that socialist cooperation in the period of this study only served Kim Il-sung's desire to make the country's economy strong and self-reliant.

The most important change occurred in techno-scientific cooperation between North Korea and the socialist bloc was the drying-up of free aid in the late 1950s. It meant to North Korean leadership that the price of interacting with the bloc countries to acquire advanced science and technology went up; now, North Korea had to pay more, compared to the previous years when Kim Il-sung enjoyed watching industrial enterprises and factories being built that in turn bolstered his developmentalist ambition. Starting in the early 1960s, the term “action” (*deistvie*) began to be used in numerous Soviet documents to denote technical services that were purchased by North Korea and provided by the bloc countries. However, it does not mean that high-profile North Korean politicians stopped using the term “assistance” or “help” (*wŏncho*; Rus. *pomoshch'*). Rather, these terms were used interchangeably in dialogues between North Korean officials and their interlocutors from the bloc countries, as those “actions” were still provided at a cheaper price, compared to those of First World countries.

After the mid-1960s, North Korea continued to express its wish to interact with the socialist bloc, especially with the Soviet Union, to apply science and technology to the

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<sup>863</sup> For a compelling account of the reorganization of the communist party in both North Korea and Soviet-occupied Germany in 1946, see Ki Kwang-sŏ, *Pukhan kukka ūi hyŏngsŏng kwa Soryŏn* (Seoul: Sŏnin, 2018), pp. 330-331.

country's industrial production in subsequent decades, only on a condition that North Korea's ideology of "self-reliance" would be guaranteed. In the 1970s, North Korea's main efforts to introduce advanced science and technology still focused on doing so from the Soviet Union, while gradually widening its contact with the PRC for the same purpose.<sup>864</sup> It is safe to assume that the size of North Korea-Soviet techno-scientific interactions from the 1970s and the early 1980s enlarged, as indicated by a fact that the total trade turnover between the two countries grew six-fold from 1960 to 1982. For example, until the early 1980s, more than sixty industrial objects were newly built or reconstructed in North Korea with Soviet technical assistance, all of which produced a considerable amount of industrial products such as steel (30% of gross domestic production), rolled steel (34% of gross domestic production), and iron ore (40% of gross domestic production). These industrial objects also consumed 60% of domestic electricity in North Korea. As in the previous years, the Soviet Union served as the primary supplier for major equipment and facilities, including agricultural tools, train cars, oil products, coke, and coking coals, for North Korea in the 1970s and the 1980s. In turn, North Korea in the early 1980s provided to the Soviet Union mineral ores, ferrous metals, non-ferrous metals, cement (56% of the total Soviet import), machine tools, pig iron (21% of the total Soviet import), rice (25% of the total Soviet import), and sneakers (35% of the total Soviet import).<sup>865</sup>

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<sup>864</sup> Yi Ch'un-kün, *Pukhan ūi kwahakkisul* (Paju: Hanul, 2005); *Kwahakkisul ro ingnŭn Pukhan haek* (Seoul: Saenggak ūi namu, 2005); Shin Hyo-suk, "Cho·So kwahakkisul hyömnyök wiwŏnhoe' charyo ro pon pukt'prŏ kwahakkisul hyömnyök" [Study on North Korea-Russia S&T Cooperation from the document of the Committee of North Korea-Soviet Union S&T Cooperation] (in Korean), *Hyŏndae Pukhan Yŏn'gu* 8:3 (2005), pp. 31-71.

<sup>865</sup> V. Osipov and A. Muratov, *Ssoryŏn-Chosŏn: Ch'insŏn kwa hyöpcho ūi rosŏn ūro* [The Soviet Union

The unequal nature of cooperation between North Korea and the socialist bloc, which was seen as an authentic Leninist-Stalinist principle of proletarian internationalism by postcolonial North Korean planners, lasted after the mid-1960s in the form of delaying the repayment. For example, the Soviet Union extended the payment deadlines of long-term loans repeatedly: the deadlines for the loans that were due on 1966 to 1970 were extended to the period from 1971 to 1984, without interest.<sup>866</sup> Between the 1960s and the 1980s, a large group of North Korean experts visited the Soviet Union and other bloc countries to familiarize themselves with new technologies, though the size and duration of such exchanges substantially decreased, compared to the 1950s.<sup>867</sup> In this regard, the Soviet-led socialist bloc continued to make various concessions in its dealing with North Korea in the name of friendship among socialist countries in the post-1965 period.

In the framework of socialist cooperation in the post-1965 period, North Korea substantially relied upon techno-scientific services that were provided by the Soviet Union to expand its industrial infrastructure during the entire period of the Cold War. The primary institutional channel for bilateral exchange in science and technology, the North Korea-Soviet Committee for Techno-Scientific Cooperation, which held eighteen working sessions from 1956 to 1967, was reorganized in October 1967 to the North Korea-Soviet Intergovernmental Consulting Committee for Economic and Techno-Scientific Issues. As in the previous years,

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and Korea: By the Way of Friendship and Cooperation] (in Korean), (Moscow: APN, 1984), pp. 18; 22-23.

<sup>866</sup> V. Osipov and A. Muratov, *Ssoryŏn-Chosŏn*, pp. 13-14.

<sup>867</sup> Shin Hyo-suk, "Study on North Korea-Russia S&T Cooperation from the document of the Committee of North Korea-Soviet Union S&T Cooperation."

exchanges of technical documents served as the most promising way for North Korea to introduce advanced science and technology. According to a Soviet publication, more than 3,000 technical documents that dealt with geology, tractor, automobile, metallurgy, chemistry, food, fishery, power generation, and agricultural machine were transferred to North Korea before the mid-1980s. In return, North Korea sent the Soviet Union a couple of technical documents regarding the production of polyvinyl alcohol (vinalon), fishery, fish packaging, agricultural produce, and herbal medicine.<sup>868</sup> Also, experts from the Soviet-led socialist bloc kept visiting North Korea; for example, it is largely unknown that Ukrainian engineers participated in the construction of the 100-MW Unggi thermal power plant in the early 1970. Moreover, the agreement of cooperation between the Academies of Sciences of the two countries was renewed in 1969, which continued to allow North Korean experts to join in bloc-wide activities of science and technology such as the Joint Institute of Nuclear Research at Dubna. However, with all these chances for North Korean experts to improve their own qualification to perform better, no techno-scientific achievements were made by North Koreans by the early 1980s, which might show the prestige of *Juche* as a legitimate mode of development to Soviet observers, except for the publishing of a Russo-Korean dictionary in 1976.<sup>869</sup>

As indicated by the aforementioned dictionary that was more an arduous organization of data than invention or creative innovation, North Korean science and technology could not produce eye-catching results to the outside world. On the contrary, North Korea's techno-scientific expertise and the quality of its industrial products constantly lagged behind those of other countries in the First and Second Worlds in the Cold War period. However, it is important

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<sup>868</sup> V. Osipov and A. Muratov, *Ssoryŏn-Chosŏn*, pp. 16; 20-21.

<sup>869</sup> V. Osipov and A. Muratov, *Ssoryŏn-Chosŏn*, pp. 20; 48-49.



to note that North Korea's hardships that constrained its economic development were largely shared by most of the countries in the decolonizing world and later in the Global South. That is, North Korea did not possess natural resources—most importantly, energy resources—enough to maintain a virtuous circle between investment in science and technology and industrial production, an ideal cycle through which increased investment on techno-science was to result in high quality goods that were to be sold at higher prices. After all, North Korea's industrial products were not competitive to be purchased by the capitalist world economy.

In contrast, South Korea gradually moved forward with export-led industrialization and sustained techno-scientific innovation based on the seed money that was offered through the Treaty of Normalization between Japan and the Republic of Korea in 1965, a treaty that nullified the South Korea's right of claim against Imperial Japan's misdeeds including the comfort women and forced draft issues. Also, the South Korean state relied upon immense exploitation—usually depicted as “sacrifices” in official South Korean narratives—of its labor force and agriculture in order to achieve a competitive price in the world market.

While reducing the country's costly interactions with the Second World, North Korean leadership's decision in the early 1960s to engage more with the Third World, a topic that lies beyond the scope of this dissertation, only strengthened Kim Il-sung's political authority in both domestic and international arenas. Starting in 1967, his son Kim Jong-il embarked on institutionalizing *Juche*,<sup>870</sup> which resulted in the adoption of Socialist Constitution in 1972

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<sup>870</sup> Chŏng Ch'ang-hyŏn, “1967nyŏn nodongdang che4ki 15ch'a chŏnwŏnhoeŭi kimjŏngil yŏnsŏl: kimjŏngil hugye ch'eje ŭi sŏmak” [Prelude of the Succession of Kim Jong Il: The first Official Speech at the 15th Plenary Session of the 4th Term Korean Workers' Party Central Committee in 1967] (in Korean), *Yŏksa Pip'yŏng* 112 (2015), pp. 132-152.

that newly created the position of Premier (*chusŏk*). This father-son leadership reportedly ordered at some point in the 1980s to build nuclear warheads to protect what it saw as North Korea's state sovereignty, while simultaneously waging a global peace offensive among the Third World, a continuation of anti-imperialist movement that was once led by the Soviet Union and the PRC respectively. Hence, North Korea's successfully leveraging on "uneven cooperation" to create industrial infrastructure and carry out the import-substitution of advanced science and technology in the 1950s and the early 1960s had a far-reaching consequence in not only North Korean history, but also a global history in the Cold War period.

Not surprisingly, the North Korean structure of techno-scientific revolutions, in which innovation of more industrial production meant to follow the Party's instructions, was rarely effective in meeting the planned target. One of the hardest issues faced by North Korean planners in "revolutionizing" its experts, or making them listen to Kim Il-sung's urges, was a lack of "material stimulation" (*muljiljŏk chagŭk*), or economic incentives. The North Korean state always lacked monetary resources to award its workers as a bonus. In this vein, Kim Il-sung's discussion with Ri Sŭng-ki, the inventor of vinalon, is telling. At one moment before 1982, Kim visited the Hamhŭng branch of the North Korean Academy of Sciences and saw that all scientists there were reading books "diligently." Impressed, Kim asked Ri if this was staged for his visit or everyday occurrence. Ri told that the most thorny issue was that nobody knew if those experts were reading scholarly books or novels. Although the branch had a number of experts, Ri continued, they made no achievements, simply awaiting the regular ration and monthly wages. In Ri's eyes, those idle scientists would have died out of hunger if they repeated the same practice of being idle in capitalist countries. Another crucial issue, Ri stated, was the lack of economic award for performance as well as the lack of criticism for underperformance in science and technology. Agreeing with the creator of *Juche* fiber, Kim

told that most of the North Korean experts were complacent due to the lack of “cares and worries in livelihood.” Although Kim did not suggest cutting the ration and wages for those underperforming, like in capitalist countries, he stressed the importance of finding the ways to improve research efforts through an “economic control,”<sup>871</sup> or giving economic incentives.

However, North Korea’s chronic economic inability including low capacity to pay and a thin budget—the very same topics that Ri Il-kyōng quietly told the Soviet ambassador in 1964—could not afford the aforementioned material scheme of Kim Il-sung, or “economic control,” to be put into effect. North Korean leadership continued to rely upon ideological engineering as the only way to innovate its techno-science. In the 1980s, North Korean researchers were urged to maintain a “revolutionary attitude in learning” as a way to achieve breakthrough. One such “revolutionary attitude” included learning foreign languages, including Japanese, English, Russian, German, French, and Chinese, in order to “acquaint and study advanced science and technology of the world in a timely manner.”<sup>872</sup> Instead of enlarging the scope of techno-scientific exchanges with the outside world, which would cost the country a good deal of precious resources, North Korea in the 1980s continued to follow a seemingly rational way of innovation, which was initiated by Kim Il-sung in totally different contexts more than two decades ago. It also indicates the tremendous weight of the price for North Korea to pay, either for more integration with the Second World, or for the marginal participation in the capitalist world economy led by the First World.

While the history of post-1991 North Korea lies beyond the purview of this dissertation,

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<sup>871</sup> Kim Il-sung, *Uri nara ūi kwahakkisul ūl paljōn sik'il te taehayō* [On the Development of Science and Technology in Our Country] (Pyongyang: Chosōn Rodongdang Ch'ulp'ansa, 1986), pp. 473-475.

<sup>872</sup> Kim Il-sung, *Uri nara ūi kwahakkisul ūl paljōn sik'il te taehayō*, pp. 495-496.

the country's mode of techno-scientific innovation with an extensive focus on ideological engineering, which was established in the era of the "Korean miracle,"<sup>873</sup> appears to be unchanged in the post-Cold War period. That is, urging its people to embody the Party's instruction on the importance of science and technology forms a significant part in the current North Korean regime's developmental project. As late as 2019, in the official narrative of North Korea, "science-technology" (*kwahak kisul*) and the talent (*injae*) that are portrayed as "strategic assets" are two most important keys to build North Korea economically strong, socialist country.<sup>874</sup> However, unlike in its Cold War past, when the agendas of decolonization and peaceful unification were important in policy-making, the current regime prioritizes its survival based on the economic development that *should* be sustained by high-quality techno-science under the name of a Battle to Breakthrough the Apex (*ch'ŏmdan tolp'ajŏn*). Hence, it is safe to assume that North Korea's continuous search for cheap, or economically reasonable, ways to improve the quality of the country's science and technology does not seem to be changed much, especially as aggressive sanctions and blockades are placed by "hostile forces"—notably, the U.S.

While it is largely unknown about how the North Korean regime transforms its people (*inmin*) into the talent to sustain the development of economy and techno-science, assistance from the socialist bloc in the 1950s—"uneven cooperation"—undoubtedly laid the groundwork for North Korea's enormous industrial growth. In turn, this economic triumph of North Korea gave to its leadership a high degree of techno-scientific confidence in the end of that decade.

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<sup>873</sup> Joan Robinson, "Korean Miracle," *Monthly Review* 16:9 (January 1965), pp. 541-549.

<sup>874</sup> Chŏng Sun-nyŏ, *Kwahakkisul ro palchŏn hanŭn Chosŏn* (Pyongyang: Chosŏn Minjujuŭi Inmin Konghwaguk Oegungmun Ch'ulp'ansa, 2019), pp. 9-17.

But, this dissertation shows that North Korea's short-term success in mass industrial production was unfortunate for the country's ambitious scheme of the continuous industrial development at high speed,<sup>875</sup> as such "success" would turn out to be a historical trap from which North Korean leadership could not easily get away. Indeed, the present North Korean regime employs a set of industrial strategies and propaganda that do not essentially differ from those of its past, demanding its people learn from the "era of a thousand-li horse." Therefore, North Korea's persistence in deploying the strategies that are predicated upon an unrealistic but optimistic overestimation of its own strength, capability, and potentiality is not past history, but an ongoing story, the outcome of which would be known only in times to come.

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<sup>875</sup> Ri Myŏng-sŏ, Kim Yŏng-su, and Kim T'ae-hyŏn, *Widaehan suryŏng Kim Il-sŏng tongji ūi kyŏngje riron haesŏl: sahoejuŭi kyŏngje paljŏn ūi kkŭnhim ōmnŭn nop'ŭn sokto e kwan han riron* (Pyongyang: Sahoe Kwahak Ch'ulp'ansa, 1975).

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*Inmin*

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