

Constructing “People’s Science-Technology”: The Culture of Science and Technology in Early North Korea, 1945-1950*

Donghyun WOO[†]

In August 1947, the Union of Industrial Technology of North Korea (UITNK) 북조선공업기술연맹 published the first edition of its renamed official journal *Mass Science* 대중과학 in Pyongyang, declaring its ambitious aims. These aims included to arm the working masses with “science-technology 과학기술,”¹ to defeat ignorance, myth, and superstition, and to mechanize the “land of three-thousand-li 삼천리 강산” with modern science.² Science-technology, the journal stated, was the only weapon

Received May 30, 2022; Reviewed August 10, 2022; Accepted August 15, 2022.

DOI: <http://dx.doi.org/10.36092/KJHS.2022.44.2.297>

* The author thanks Moon Manyong 문만용, Jongsik Christian Yi 이종식, and three anonymous reviewers for their pragmatic help and insightful suggestions that undoubtedly enriched this article, and Jeong Chang-hyeon 정창현, Gi Gwang-seo 기광서, Park Chang Hee 박창희, Jo Soo-ryong 조수룡, and Lee Se-young 이세영 for sharing important archival materials with me. This research was supported by the Lotte Scholarship Foundation. This article is based on a chapter of the author’s doctoral dissertation. See Donghyun Woo, “Leveraging Uneven Cooperation: Socialist Assistance and the Rise of North Korea, 1945-1965” (PhD Diss., University of California, Los Angeles, 2022).

[†] University of California, Los Angeles, dhwoo1234@gmail.com

¹ From the 1940s onward, in North Korean minds, the notions of science 과학 and technology 기술 were understood as equally essential factors for economic development, which led to the combined use of the two terms in one concept 과학기술. Reflecting this historicity, I use an English term “science-technology” to denote the North Korean word 과학기술 in this article. For the relations between science and technology, the creation and consolidation of the institution of science and technology, and the relevant policy-making in North Korean history from 1945 to the 1970s, see Kang Hojye, *History of Science and Technology in North Korea I* 북한 과학기술 형성사 I (Seoul: Seonin, 2007); Byun Hak-moon, “The Technical Revolution Theory of North Korea: Simultaneous Pursuit of the Ideological and Technical Revolutions in the 1960s and 1970s 북한의 기술혁명론: 1960-70년대 사상혁명과 기술혁명의 병행” (PhD Diss., Seoul National University, 2015). Examining the origins of the same term that had been used in 1920s colonial Korea, although it is necessary, lies beyond the scope of this study. See Kim Geun Bae, *The Emergence of Modern Techno-Scientific Manpower* 한국 근대 과학기술인력의 출현 (Seoul: Munhak Gwa Jiseongsa, 2005). For the wartime origins of the Japanese equivalent 科学技術, see Hiromi Mizuno, *Science for the Empire: Scientific Nationalism in Modern Japan* (Stanford: Stanford University Press, 2009), 43-68.

² *Mass Science* 대중 과학 1 (August 1947), 2-3. Initially, the Union’s official journal was *Industrial Knowledge* 공업 지식. In 1949, the same journal returned to its original name. The Union was also referred to as the All-Union of Industrial Technology of North Korea 북조선공업기술총연맹.

that could bring benefit and happiness to the people. In the following pages, Jeong Jun-taek 정준택, who despite his alleged pro-Japanese past, later became the first chairman of the State Planning Committee (SPC) 국가계획위원회, the country's command center for economic development, declared that "people's science-technology 인민의 과학기술" must be achieved in order to quickly repair the devastated industry left by Japanese imperialists.³ Meanwhile, the country inherited almost nothing from colonial rulers,⁴ which would have been necessary to advance the industrial economy.

This article examines historical contexts in which Jeong Jun-taek's concept of "people's science-technology" seemed achievable in the Democratic People's Republic of Korea (DPRK, hereafter North Korea), as well as how the North Koreans were involved in such a mobilization scheme in 1945-50. This article argues that Jeong's view reflected an assertive attitude of North Korean leadership toward science and technology, which was inspired tremendously, and to a lesser degree materially supported, by the Soviet Union. Despite the fact that North Korean planners heavily relied on the Soviet Union to create their own *North Korean* culture of science and technology, and that the nation was urged to learn from the Soviet Union,⁵ this process was neither Sovietization, which emphasized the Soviet Union's unchecked power within its sphere of influence,⁶ nor a linear realization of North Korea's own strengths and capabilities.⁷ Rather, "people's science-technology" as a cultural attitude was a historical amalgamation of North Korean leadership's desire for rapid economic development and the Soviet Union's limited but crucial assistance.⁸ As North Korea remained a pro-Soviet country in this period, Moscow did not have any incentive to actively interfere in North Korean domestic affairs of

³ *Mass Science* 1 (August 1947), 4-5.

⁴ The National Institute of Korean History (NIKH) 국사편찬위원회 ed., Go Gwang-yeol et al. trans., *The Soviet Civil Directorate's Report on Post-Liberation Industrial Situations in Northern Korea* 해방 직후 한반도 북부 공업 상황에 대한 소련 민정청의 조사 보고 (Gwacheon: National Institute of Korean History, 2020).

⁵ In this article, the term "culture" is used to imply a set of social institutions, practices, and perspectives that were related to science and technology in North Korea in 1945-50. For a cultural analysis of North Korean history, see Kim Jae-woong, "Images of the U.S. Recomposed by North Korean Logic (1945~1950) 북한의 논리를 통해 재구성된 미국의 상(1945~1950)," *Scholarly Bulletin of Korean History* 한국사학보 37 (2009), 299-344.

⁶ 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).

⁷ Gim Gwang-un, *Historical Research of North Korean Political History* 1 북한 정치사 연구 I (Seoul: Seonin, 2003).

⁸ For similar perspectives, see Thomas P. Bernstein and Hua-Yu Li eds., *China Learns from the Soviet Union, 1949–Present* (Lanham: Lexington Books, 2010); Elidor Mëhilli, *From Stalin to Mao: Albania and the Socialist World* (Ithaca: Cornell University Press, 2017); James Mark, Artemy M. Kalinovsky, and Steffi Marung eds., *Alternative Globalizations: Eastern Europe and the Postcolonial World* (Bloomington: Indiana University Press, 2020).

science and technology,⁹ enabling political and techno-scientific authorities in Pyongyang to pursue what they understood as the only path to becoming an advanced socialist country with a planned economy. In other words, the price that North Korea had to pay for techno-scientific assistance from the Soviet Union was first and foremost politico-ideological loyalty, a seemingly small cost for a newly-independent postcolonial nation.¹⁰

The division that came along with the liberation of Korea from Japan in 1945 caused a serious shortage of experts, especially in North Korea. As Kim Geun Bae 김근배 notes, the number of Korean experts increased during the colonial period, only to supply a low-level labor force.¹¹ Postcolonial Korean planners saw it as an urgent task to address this distorted legacy. This particular perspective also stemmed from a global understanding that overcoming inefficiency in industrial production to further economic development hinged upon the progress of science and technology.¹² Therefore, numerous national leaders in what was later termed the non-First World had a common idea that a state should directly manage science and technology.

Compared to scholarly attention paid to the culture of science and technology in the Republic of Korea (South Korea) in the 1940s,¹³ existing studies have only partially examined “people’s science-technology,” a cultural attitude toward science and technology that North Korean leaders saw as crucial to building an advanced economy. Some explanations about this disparity are necessary. In the wake of the Cold War’s conclusion, archives in the former Soviet Union were released, enabling

⁹ Gi Gwang-seo, *The Formation of the North Korean State and the Soviet Union* 북한 국가의 형성과 소련 (Seoul: Seonin, 2018).

¹⁰ The author is grateful to an anonymous reviewer for offering a chance to contemplate on how to frame this important point of the North Korea-Soviet relations.

¹¹ Kim, *The Emergence of Modern Techno-Scientific Manpower*, 141-480.

¹² Mizuno, *op. cit.*; 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); Naomi Oreskes and John Krige eds., *Science and Technology in the Global Cold War* (Cambridge: The MIT Press, 2014); Hiromi Mizuno, Aaron S. Moore, and John DiMoia eds., *Engineering Asia: Technology, Colonial Development and the Cold War Order* (London: Bloomsbury Academic, 2018); Jacob D. Hamblin, *The Wretched Atom: America’s Global Gamble with Peaceful Nuclear Technology* (New York: Oxford University Press, 2021).

¹³ 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), 107-129; 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), 119-146; John DiMoia, “Atoms for Sale?: Cold War War Institution-Building and the South Korean Atomic Energy Project, 1945–1965,” *Technology and Culture* 51:3 (2010), 589-618; Moon Manyong, “The Post-colonial Desires of Korean Scientists: the origin of modern science and technology systems in Korea” 한국 과학기술자들의 ‘탈식민주의 갈망’: 한국의 현대적 과학기술체제의 기원, *History and Discourse* 역사와 담론 75 (2015), 179-222.

researchers to use declassified materials to examine North Korean history. The so-called “North Korean nuclear crises” in the 1990s and 2000s also drew global attention, leading to increased interest in the origins of North Korea’s techno-scientific capabilities.¹⁴ Against this background, scholars have analyzed various aspects of early North Korean history, including the formation of mass education and scientific institutions, the creation of Kim Il-sung University, and North Korea-Soviet cultural exchanges,¹⁵ indicating that North Korean leaders strove to introduce Soviet culture to create an equivalent of, and to augment its own, techno-scientific manpower. Early activities of famed North Korean scientists such as Li Seung-ki 리승기 and Toh Sang-rok 도상록 have been examined,¹⁶ along with Soviet and North

¹⁴ Yi Jae-seung, *Technocrat That Moves North Korea* 북한을 움직이는 테크노크라트 (Seoul: Ilbit, 1998); Yi Chun-geun, *Reading North Korean Nuclear Capabilities Through Science-Technology* 과학기술로 읽는 북한 핵 (Seoul: Saenggak Ui Namu, 2005).

¹⁵ Gang In-gu, “Cultural Cooperation of the Soviet Union and North Korea in the Second Half of the 1940s” Культурное сотрудничество Советского Союза и Северной Кореи во второй половине 40-х годов (PhD Diss., Saint Petersburg State University, 1995); Kim Geun Bae, “The Foundation and Division of Kim Il Sung University in North Korea: Focusing on the Technical Disciplines 김일성종합대학의 창립과 분화: 과학기술계 학부를 중심으로,” *The Korean Journal for the History of Science* 한국과학사학회지 22:2 (2020), 193-216; “The Making of Socialist Scientists and Engineers in North Korea 초기 북한에서 사회주의적 과학기술자의 창출,” *The Korean Journal for the History of Science* 25:1 (2003), 25-42; Sin Hyo-suk, *North Korea’s Education in the Period of Soviet Military Government* 소련군정기 북한의 교육 (Paju: Gyoyukgwahaksa, 2003); “Study on North Korea-Russia S&T Cooperation from the document of the Committee of North Korea-Soviet Union S&T Cooperation ‘조·소과학기술협력위원회’ 자료로 본 북·러 과학기술협력,” *Review of North Korean Studies* 현대북한연구 8:3 (2005), 31-71; Yi Chun-geun, *North Korea’s Science and Technology* 북한의 과학기술 (Paju: Hanul Academy, 2005); The Association of North Korean Studies 북한연구학회 ed., *North Korea’s Education and Science-Technology* 북한의 교육과 과학기술 (Paju: Kyungin Publishing, 2006); Kang, *op. cit.*; Ryu Kee-hyun, “Learning from the Soviet – Organization and Activities of Korea-Soviet Cultural Association, 1945~1948 쏘련을 향하여 배우라 – 1945~1948년 조소문화협회(朝蘇文化協會)의 조직과 활동,” *Daedong Munwha Yeon’gu* 대동문화연구 98 (2017), 91-118; Kim Seon-ho, “The Acceptance of North Korea’s Marxism-Leninism through Translation and Publication: Focusing on the North Korean Workers’ Party 번역과 출판으로 본 북한의 마르크스레닌주의 수용 - 노동당을 중심으로,” *Critical Review of History* 역사비평 125 (2018), 265-295.

¹⁶ Kim Tae-Ho, “Li Seung Ki’s Research and Industrialization of Vinalon in North Korea: An Example of the Appropriation of the Colonial Heritage 리승기의 북한에서의 “비날론” 연구와 공업화 - 식민지 유산의 전유 과정을 중심으로,” *The Korean Journal for the History of Science* 23:2 (2001), 111-132; Im Jong-hyok, “On Works of Physicist TOH Sangrok during the Colonial Era 식민지시기 물리학자 도상록의 연구활동에 대하여,” *The Korean Journal for the History of Science* 27:1 (2005), 109-126; Kim Geun Bae, “Two Scientists from South and North Korea: Taikyue Ree and Seung Ki Li 남북의 두 과학자 이태규와 리승기: 세계성과 지역성의 공존 모색,” *Critical Review of History* 82 (2008), 16-40; Eunsung Cho, “When the Political Spotlight is On: Social Evaluations of Ri Sŭnggi and Ryō Kyōnggu, Two Chemical Engineers in North Korea,” *International Journal of Korean History* 26:1 (2021), 255-285.

Korean monographs of early North Korea's science and technology.¹⁷

Yet, we do not know much about how the Soviet Union assisted North Korea in conceiving the idea of "people's science-technology" in 1945-50 and how North Koreans, especially workers and techno-scientific practitioners,¹⁸ responded to this scheme that was an important part of mobilization efforts to further economic development.¹⁹ Unfortunately, Soviet assistance that inspired and undergirded North Korean leaders to enact such plans has only partially been previously studied.²⁰ Among historical circumstances that made scholarly investigation of these topics difficult included the following: First, in the 1940s, the state-led development of science and technology in both North and South Korea remained merely a concept among those in power.²¹ As the defection of Toh Sang-rok to North Korea in 1946 indicates, contemporary researchers could not engage solely with research and education owing to socio-political turmoil and material hardships. Secondly, although an economic and cultural cooperation agreement in March 1949 with the Soviet Union gave North Korea a chance to gain access to what it understood as advanced science and technology, North Korea throughout the 1950s prioritized surviving the Korean War and implementing post-war reconstruction projects over the development of science and technology. Moreover, previous studies of North Korean history of science and technology have not thoroughly examined Soviet archival sources to analyze the role of the Soviet Union in the formulation of North Korea's culture of science and technology.²² Regrettably, for scholars, North Korea as a research topic remains completely separate from the Japanese history of science

¹⁷ Svetlana G. Nam, *Education and Science of the DPRK in the Conditions of Scientific-Technological Revolution Образование и наука КНДР в условиях научно-технической революции* (Moscow: Nauka, 1975); Yun Myeong-su, *The Developmental History of North Korea's Science-Technology. The Post-Liberation Period I 조선과학기술발전사(해방후편1)* (Pyongyang: Gwahak Baekgwasa Jeon Jonghapchulpansa, 1994).

¹⁸ Throughout this article, I loosely define "techno-scientific practitioners" as those "who pursued professional activities that were related to science and technology for a living." For the sake of my discussion, I translate 과학자 into scientists and 기술자 into technicians or engineers. For the detailed subdivision in the North Korean classification of such experts, see Kang, *op. cit.*, 42-57.

¹⁹ For an exception, see Lee Se-young, "The Recognition of Scientific Technologies and People-Making in North Korea, 1945-1950 1945~1950년 북한의 과학기술과 근로인민 형성에 대한 인식," *The Dong Bang Hak Chi 동방학지* 174 (2016), 1-31. However, Lee's work focuses on the perception of North Korean leadership. He did not examine Soviet archival materials on the details of Soviet techno-scientific assistance given to North Korea and North Korean publications that show how the North Koreans responded to this state-endorsed project.

²⁰ For an exception, see Sin, *op. cit.* However, Sin's work focused on education, not the culture of science and technology.

²¹ Moon, *op. cit.*

²² For an exception, see Yu. V. Vanin, *Soviet Union and North Korea, 1945-1948 Советский Союз и Северная Корея, 1945-1948* (Moscow: IV RAN, 2016).

and technology during and after the colonial period.²³ Indeed, it is difficult to delineate how “people’s science-technology” operated in reality.

Taking the aforementioned hardships of studying the early North Korean history of science and technology into account, this article investigates how “people’s science-technology” unfolded in 1945-50 and how the North Koreans responded to this scheme, contributing to our understanding of the rise of science and technology in a *North Korean* context.²⁴ Based on previously unexamined Soviet archival sources and North Korean publications,²⁵ this author begins by analyzing the scale and scope of the assistance provided by the Soviet Union to North Korea in 1945-50, which included responding to repeated requests from North Korean leaders, who sought experts, materials and equipment, and studying opportunities abroad. A close, critical reading of Soviet archival sources is tremendously important, partly because delicate facts about assistance contained in those sources are only mentioned selectively in North Korean documents. This article makes the claim that without recognizing the significant role of Soviet assistance in this period, we might not be able to advance our understanding of a “people’s science-technology” project per se

²³ Mizuno, *op. cit.*; Moore, *op. cit.*; Mizuno, Moore, and DiMoia eds., *op. cit.*

²⁴ Yun, *op. cit.* The author is grateful to anonymous reviewers for giving a chance to rethink how to bridge this period to North Korea’s distinctively unique historical phenomena such as “*Juche* science 주체 과학” and a “policy on old intelligentsia 오랜 인테리 정책” that were formulated in the much later period.

²⁵ I examined source materials that were housed in the Presidential Archive of the Russian Federation (APRF), the Archive of Foreign Affairs of the Russian Federation (AVPRF), the Central Archive of the Defense Ministry of the Russian Federation (TsAMORF), and the Russian State Archive of Socio-Political History (RGASPI). The materials from APRF, AVPRF, and TsAMORF that I examined were inaccessible at the time of writing. Therefore, I referred to a few published material collections, in both printed and digitized versions. For example, some APRF and AVPRF materials were gathered by historian Shen Zhihua and translated into Chinese. See Shen Zhihua ed., *The Korean War: Declassified Documents from Russian Archives* 朝鮮戰爭：俄國檔案館的解密文件 (3 vols., Taipei, 2003). Fortunately, I was able to examine the copies of these materials from the National Institute of Korean History (NIKH), with the help of Jo Soo-ryong. For TsAMORF, AVPRF, and RGASPI materials, I made use of the copies, provided by Gi Gwang-seo, housed in the NIKH, or serviced by the Academy of Korean Studies 한국학중앙연구원. Some RGASPI materials that I analyzed were reprinted in Andrei Lankov ed., Jeon Hyeon-su trans., *The Communist Party of the Soviet Union and the Issue of North Korea* 소련공산당과 북한 문제 (Daegu: Gyeongbung Daehakgyo Chulpanbu, 2014). Some of the seized North Korean documents, categorized as Foreign Records Seized, or a Record Group 242, at the National Archives of Records and Administration (NARA) in the United States, can be accessed through the internet, serviced by the National Library of Korea 국립중앙도서관. In 1982-2021, the NIKH has published ninety volumes of North Korea-related collections under the name of *Source Book on North Korea* (SBNK) 북한관계사료집 (90 vols., Gwacheon, 1982-2021), which included source materials from the NARA and Russian archives. For a brief explanation on the SBNK and Russian archival materials, see Jo Soo-ryong, “Jaryeokgaengsaeng Economy: North Korea’s Socialist Transition and Its Formation in 1953~63 전후 북한의 사회주의 이행과 ‘자력갱생’ 경제의 형성” (PhD Diss., Kyung Hee University, 2018), 11-18.

and how the North Koreans were involved in it beyond North Korea's propaganda that merely emphasized Kim Il-sung's wise guidance.²⁶ Whereas North Korean leadership relied on Soviet assistance to popularize "people's science-technology," Kim tended to avoid laying out such details, simply stating those as "favorable conditions."²⁷ Indeed, the North Korean authorities acted as gatekeepers of information, exercising power to determine the scope and contents of assistance-related information that was to reach the North Koreans. For example, Kang Hojye, writing solely for North Korean publications, argued that North Korean leadership in this period "endeavored to continuously enhance the machine sector" among several subfields of industry;²⁸ however, in early 1950, Kim Il-sung told Stalin that he wanted to get immediate help in order to "develop [North Korea's] metal industry."²⁹ Rather than arguing whether Soviet sources are more informative than North Korean documents, a rigorous examination of a range of evidence about these historical particularities is required, both from North Korea and the Soviet Union, in order to examine how "people's science-technology" took root within the different realms of North Korea-Soviet relations and North Korean domestic affairs. Hence, this article offers new narratives of how crucial Soviet assistance was in realizing North Korean leaders' quest for an advanced economy through the notion of "people's science-technology" in the first section, and how various North Korean actors represented this *North Korean* culture of science and technology in the following section. By doing so, the expectations and goals as perceived and practiced by the North Koreans are shown, as well as their understanding of science and technology, which greatly enhanced the country's extended engagement with the socialist bloc, along with their search for their own mode of continuing industrial development in the subsequent decade.

²⁶ Yun, *op. cit.*, 42.

²⁷ Kim Il-sung, "A concluding remark of Premier Kim Il-sung in the Second Meeting of the Supreme People's Assembly 조선최고인민회의 제2차 회의에서 진술한 김일성 수상의 총결 연설," *Worker* 3 (February 1949), reprinted in NIKH ed., *SBNK* 47, 445.

²⁸ Kang, *op. cit.*, 56.

²⁹ The original minutes between Kim Il-sung and Stalin on April 10, 1950, were unearthed by Shen Zhihua, translated into Chinese in Shen ed., *The Korean War*, I, 332-335. I have consulted the digital version of the original minutes, hand-written in Russian, housed in the NIKH.

An Untold Material Basis for “People’s Science-Technology”: Soviet Assistance to North Korea

This section explores the role of Soviet assistance that served as the most important material basis in forming North Korea into a country that aimed to achieve an advanced economy.³⁰ This author argues that, from the onset of the regime, Soviet assistance undergirded the country’s leaders in promoting “people’s science-technology,” an assertive attitude regarding how to build an advanced North Korea through science and technology. Despite the significance of the topic, the details and contexts of the Soviet Union’s assistance provided to North Korea during this period have only been partially examined based almost entirely on North Korean publications.

As early as November 1945, North Korean leadership sought aid from the Soviet Union in techno-scientific and cultural matters. On November 14, 1945, Kim Il-sung urged Terenty F. Shtykov, Kim’s political patron and the person in charge of managing North Korean affairs, that the dispatch of Soviet technical cadres should be rendered.³¹ Kim asked for 1,500 Soviet Koreans, ethnic Koreans with Soviet citizenship, to support the North Korean Branch of the Communist Party of Korea 조선공산당 (the Party).³² Moscow responded positively by dispatching a group of Soviet Korean experts from Central Asia; yet, less than 10% (about 120 Soviet Koreans) of the original number that he requested arrived in 1945. In addition, Kim requested permission to organize the Korean-Soviet Cultural Association 조소문화협회 that would serve as a channel for receiving advanced cultural assets.³³

Upon Stalin’s approval of Kim Il-sung’s additional requests made in March 1946, Soviet Korean “specialists” специалисты with a variety of expertise came to Pyongyang in 1946-48.³⁴ Arguably, the most influential group was a team of thirty-

³⁰ Here I use the term “material basis” in order to imply that the Soviet Union served as the only accessible channel in 1945-50 through which North Korean leadership could request advanced techno-scientific objects, including machinery, equipment, facilities, expertise, designs, schemes, and plans, all essential for the advancement of its own industrial capability. The author is grateful to an anonymous reviewer for providing a chance to rethink this term.

³¹ Gi, *op. cit.*, 207.

³² The North Korean Branch of the Communist Party of Korea (unofficially renamed the North Korean Communist Party 북조선공산당) merged with the Korean New People’s Party 조선신민당 to create the Workers’ Party of North Korea (WPNK) 북조선로동당 in August 1946. Later the WPNK was reorganized into the present Workers’ Party of Korea 조선로동당. For the early history of the Workers’ Party of Korea, see Seo Dong-man, *The History of the Establishment of the North Korean Socialist System 1945-1961* 북조선사회주의체제성립사, 1945-1961 (Seoul: Seonin, 2005).

³³ Gang In-gu, “A Historical Study of Soviet Cultural Palace (Дом Советской Культуры) for North Korea in 1948 1948년 평양 소련문화원의 설립과 소련의 조소문화교류 활동,” *The Journal of Korean History* 한국사연구 90, 403-426; Ryu, *op. cit.*

³⁴ Gi, *op. cit.*, 325.

seven experts, including Nam Il 남일 and Pang Hak-se 방학세, many of whom soon began working in key positions in both the future North Korean cabinet and educational institutions.³⁵ The influx of the Soviet Koreans into North Korea continued up until the first half of 1948, as Kim 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 stated in the original request, only thirty-four came to North Korea in 1947, with an extensive focus on Russian-language education.³⁶ In early 1948, a group of twenty-two Soviet Koreans from Kazakhstan visited North Korea to teach the Russian language.³⁷

These constant requests for Soviet Korean specialists were an important part of a large North Korean scheme to satisfy North Koreans' growing interests in the Soviet Union and their need to learn Russian. On September 6, 1946, Shtykov wrote in his diary that "interests in the lives of the Soviet people and the Soviet culture" grew in North Korea.³⁸ Seizing upon this opportunity and atmosphere that was favorable to building a socialist regime on the model of the Soviet Union, North Korean officials popularized the reasons for learning from the Soviet Union.³⁹ One North Korean booklet, presumed to have been published in 1946, stated that Iosif Stalin transformed agrarian Russia into a "great industrial country" that could contend with the "advanced European civilization."⁴⁰ Labor efficiency dramatically increased, the narrative went on, by "executing all of the hard work with machines." It was well suited to fueling social aspirations to learn from the advanced Soviet Union. In December 1946, the North Korean Provisional People's Committee (NKPPC) 북조선임시인민위원회 decided to establish language training centers in major cities such as Pyongyang, Sinuiju, and Cheongjin.⁴¹ The same decision declared the importance to "translate literature ... to absorb such excellent culture [of the Soviet Union]." In the same month, Moscow decided to train Soviet Korean educators to teach Russian at various North Korean institutions.⁴²

³⁵ RGASPI, f. 17, op. 162, d. 38, ll. 137, 142.

³⁶ RGASPI, f. 17, op. 162, d. 38, ll. 192, 209.

³⁷ RGASPI, f. 17, op. 162, d. 39, ll. 26, 30.

³⁸ "The Diary of T. F. Shtykov" Dnevnik I. T. F. Shtykova, https://www.krm.or.kr/krmits/link.html?dbGubun=SD&m201_id=10004559&local_id=10012665 (Accessed on June 21, 2022).

³⁹ Park Chang Hee, "The Propaganda-Agitation System and the Mass Culture Movement in North Korea, 1945-1950 해방 직후 북한의 선전선동체계와 대중문화사업(1945-1950)" (PhD Diss., Sungkyunkwan University, 2021).

⁴⁰ *A Report of the Korean People's Lives in the Soviet Union* 소련에 거주하는 조선인들의 생활형편에 대한 보고 (Cheongjin: Joseongongsandang Cheongjinsi Wiwonhoe, n.d.). Also, see Josso Munhwa Hyeopoe Cheongjinsi Wiwonhoe, *A Korean Kolkhoz Pole Star in the Soviet Union* 소련에 있는 조선인 북극성 폴호즈 (Pyongyang: Josso Munhwa Hyeopoe Jungang Wiwonhoe Seonjeonbu, 1947?).

⁴¹ NIKH ed., *SBNK* 5, 668-669.

⁴² RGASPI, f. 17, op. 162, d. 38, l. 140.

Beginning in early 1946, North Korean leadership continuously asked the Soviet Union to provide academic workers and supplies for higher education institutions, especially Kim Il-sung University. Both countries' leaders took an extraordinary interest in these issues, including the treatment and compensation of such workers and the procurement of educational supplies. In July 1946, when the plan to build Kim Il-sung University was approved by the North Korean authorities,⁴³ Andrei A. Romanenko, the Deputy Commander in charge of civil affairs of the Soviet 25th Army, requested education-related support from his home country.⁴⁴ On behalf of the North Korean planners requesting forty-two professors, the Soviet authorities in Pyongyang emphasized the destitute state of North Korea's education system. On October 4, Shtykov sent a letter to the president of Leningrad State University, the oldest university in Russia, asking for curricula and books to be sent.⁴⁵ Simultaneously, Shtykov wrote to a Soviet Vice Minister of Higher Education, promising that Soviet workers at Kim Il-sung University could bring their families along, and that food, housing, and other public services would be guaranteed.⁴⁶ Subsequently, thirty academic workers, including an advisor to the university rector, were sent.⁴⁷ On October 25, the NKPPC stipulated the terms of the agreement that Romanenko relayed to Shtykov.⁴⁸ Finally, the Soviet Ministry of Higher Education seemed to have approved the conditions set by the North Korean leadership.⁴⁹

The North Korean leadership's hand-written request to Shtykov, dated December 12, 1946, indicates the bleak situations that plagued the country's scholarly communities.⁵⁰ 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. 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 were no standardized textbooks to teach the next generation of North Korean researchers. North Korean leadership, the request continued, had no other choice but to rely on "fatherly help" *отеческая помощь* from the Soviet Union to "overcome the mental backwardness, left behind by Japanese imperialists, and to revive the national culture." The stipulations in the request show the desperate expectations of North Korean planners for the Soviet Union.⁵¹ However, the actual

⁴³ NIKH ed., *SBNK* 5, 682-683.

⁴⁴ TsAMORF, f. 172, op. 614631, d. 27, ll. 41-45.

⁴⁵ TsAMORF, f. 172, op. 614631, d. 27, l. 39.

⁴⁶ TsAMORF, f. 172, op. 614631, d. 27, l. 26.

⁴⁷ TsAMORF, f. 172, op. 614631, d. 27, l. 27.

⁴⁸ TsAMORF, f. 172, op. 614631, d. 27, l. 30.

⁴⁹ TsAMORF, f. 172, op. 614631, d. 27, l. 29.

⁵⁰ TsAMORF, f. 172, op. 614631, d. 27, ll. 46-51.

⁵¹ Pyongyang 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

volume of Soviet assistance, according to the North Korean estimates based on what was received before 1950, was less than half of what was originally requested.⁵²

Sending the North Koreans to the Soviet Union for both study and training formed a crucial part of the country's reliance on its Soviet patron, which continued without a sharp decline until 1957. On May 21, 1946, Kim Il-sung sent a request to Romanenko, suggesting that 200-300 North Korean students move to Moscow to learn Russian and to study at Soviet universities and technical schools starting in 1947.⁵³ This request was readily accepted, leading to the dispatch of 299 students in 1946 and 140 students the following year.⁵⁴ Indeed, North Korean leadership had high expectations of those students who would study in the Soviet Union. On August 20, 1947, a group of 140 students visited Kim before their departure.⁵⁵ At this event, Kim 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." Still, half of the educational expenses were borne by North Korea.⁵⁶

From early on, North Korean planners requested Soviet experts' practical assistance in applying advanced industrial science-technology to North Korean factories. After the liberation of 1945, North Korean leadership faced urgent tasks such as managing the nationalized industries and restoring railroad transportation. In late 1946, Shtykov 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, North Korean planners were "losing confidence" in the management of its nationalized industries and transportation services since "repeated requests" for Soviet experts were ignored.⁵⁷

The aforementioned circumstances created an awareness that the help of military engineers, of the Soviet 25th Army that was stationed in North Korea until December

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.

⁵² 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* 김일성종합대학 10년사 (Pyongyang: Kim Il-sung Chonghap Taehak Chulpansa, 1956), 37-38, 51, 59.

⁵³ TsAMORF, f. 379, op. 166654, d. 1, ll. 13, 16.

⁵⁴ RGASPI, f. 17, op. 125, d. 543, l. 125.

⁵⁵ "The Second Group of North Korean Students to the Soviet Union Visiting Chairman Kim Il-sung" 제2차 조련 파견 유학생 김일성 위원장 방문 인사, *Rodong Shinmun*, August 23, 1947.

⁵⁶ TsAMORF, f. 142, op. 106601, d. 1, ll. 2-4.

⁵⁷ APRF, f. 45, op. 1, d. 346, ll. 4-6.

1948, was precious. One North Korean techno-scientific journal contains several entries about those experts, who gave assistance in North Korean industrial sites, including Hwanghae Steelworks, Cheongjin Steelworks, and Seongjin Steelworks, in 1946-47.⁵⁸ Three main themes ran through these entries. The first was 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 was expressed, who helped with the reconstruction of industrial sites, and likewise taught advanced methods to operate factories. The third detailed the industrial achievements made by North Korean experts under Soviet guidance. Overall, these anecdotes emphasized the individual virtues of Soviet engineers, and it seems that the same accounts were reproduced by the North Korean authorities to bolster the technical training system, in which unskilled persons received training from seasoned workers.

The visits from Soviet scholars accordingly formed another significant part of Soviet assistance in this period, which increasingly gave North Korea a morale boost in shaping a resilient attitude in techno-scientific matters. On July 21, 1948, for example, a group of seventeen Soviet professors visited Pyongyang to deliver lectures in various disciplines to North Korean researchers as well as the general public.⁵⁹ This group included “renowned Soviet scientists,” including Alexander I. Oparin, a “giant” in biology.⁶⁰ These Soviet scientists offered various lectures for a total of 504 hours in the course of 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 groundbreaking source for the country’s science education that had been completely severed from advanced technological training. Their service also set a precedent for upcoming Soviet scholars, who worked mainly as advisors at North Korean universities and colleges starting in 1949.⁶¹

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 advanced science and technology would be raised accordingly. In February 1948, the Soviet Ministry of Higher Education submitted a proposal to the Soviet Ministry of Foreign Affairs on the issue of providing

⁵⁸ *Mass Science*. Special edition in celebration of the Korea-Soviet friendship (December 1948), 14-32, 42-53.

⁵⁹ *Ibid.*, 33-36.

⁶⁰ *Korean Central Yearbook 1949 조선중앙년감 1949* (Pyongyang: Joseon Jungang Tongsin, 1949), 133-134. Although Vanin saw that this trip had been conducted in 1947, it was a mistake. Vanin, *op. cit.*, 202-203.

⁶¹ *Ten-Year History of Kim Il-sung University*, 58-63.

assistance to North Korea.⁶² 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 North Korea. This proposal was formalized through a decision of the Soviet cabinet in December of the same year.⁶³

A Soviet document, signed by Stalin on December 22, 1948, clearly shows the extent of the Soviet leadership's interest in boosting North Korea's nascent science-technology.⁶⁴ According to this document, Soviet planners sought to increase the volume of trade turnover, give technical assistance, and strengthen cultural ties between the two countries. Upon the North Korean leadership's request, Soviet leadership approved the dispatch 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 North Korea, to remain there to continue their service. In May 1949, *Rodong Shinmun* 로동신문 praised this multifaceted Soviet assistance since the liberation of 1945, summarizing how Soviet science contributed to the progress of the North Korean economy.⁶⁵

The meeting between Kim Il-sung and Stalin in Moscow in early March 1949 presents what North Korean leadership actually hoped to acquire in terms of science and technology.⁶⁶ In response to Stalin's query of the assistance needed, Kim replied that he wanted "machinery, equipment, spare parts in industry, communications, transportation, and economy." He also requested Soviet experts and plans for various projects, including for the Anju irrigation facility, Cheongjin Steelworks, Supung hydropower plant, and geological surveys. In order to tighten North Korea-Soviet cultural links, Kim suggested an exchange that meant sending Soviet scholars to North Korea and dispatching North Korean students as well as experts to the Soviet Union for research and training. Agreeing with him, Stalin worried that the language barrier would cause difficulties for communication. Kim added that although the Russian-language program was being implemented in "all schools and higher education institutions" in North Korea, the number of qualified teachers turned out to be insufficient. Meanwhile, the Chairman of the North Korean SPC, Jeong Juntaek, questioned whether such proposed exchanges of experts were feasible. Annoyed, Stalin confirmed that it was possible. These hopes and expectations

⁶² AVPRF, f. 0102, op. 4, p. 8, d. 10, ll. 14-21.

⁶³ Shen ed., *The Korean War*, I, 109-112.

⁶⁴ RGASPI, f. 17, op. 3, d. 1073, ll. 49, 115-117.

⁶⁵ "Distinguished services of Soviet science in the development of our industry 우리산업 발전에 쓰려과학의 공훈," *Rodong Shinmun*, May 25, 1949.

⁶⁶ "A meeting (March 5, 1949)," APRF, f. 45, op. 1, d. 346, ll. 13-23.

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 expanded.⁶⁷ According to Article 4 of the agreement on science and technology, the two countries would promote exchanges in the fields of commerce and agricultural production through dispatching experts, rendering technical assistance, organizing exhibitions, and exchanging seeds and plant specimens.⁶⁸ The following day, Moscow approved the revised draft on the provision of technical assistance,⁶⁹ which was divided into two categories: drawing up plans for the design of industrial enterprises (e.g. the completion of Cheongjin Steelworks) and the dispatch of a geological survey team. A few days later, a series of regulations for Soviet scientific workers in North Korea were approved.⁷⁰

Between 1949 and 1950, Pyongyang continued to request Soviet specialists, for their expertise was essential in drawing up and conducting various state projects, while sending its workers to train at Soviet factories. In September 1949, Moscow not only handed over technical documents related to the construction of the Hongui-Khasan railway to North Korea,⁷¹ but also sent two additional Soviet engineers to help build the Hongui-Kraskino railway.⁷² In November, at the request of Pyongyang, the dispatch of nine experts in the fields of irrigation (five hydraulic scientists and one geodetic engineer), meteorology (one hydrometeorological engineer and one synoptic meteorological engineer), and communications was approved for a period of two years.⁷³ In March 1950, eighteen North Korean textile experts were approved to be sent to the textile complex, in what was then called Stalinabad, for training purposes.⁷⁴

A watershed moment for the nature of Soviet assistance to North Korea was the outbreak of the Korean War on June 25, 1950. Two months prior, on April 10, Kim Il-sung met with Stalin in Moscow.⁷⁵ Emphasizing the role of the Soviet Union in North Korea's economic development, Kim began by expressing that the country needed to develop its metal industry, one of their few export resources, by obtaining Soviet automobiles and tractors. The list of North Korea's expectations for Soviet help went on to include power facilities, electric trains, and transformers to supply hydroelectric power to railways. Characteristically, Stalin agreed to supply these.

⁶⁷ RGASPI, f. 17, op. 162, d. 40, ll. 8, 113-115.

⁶⁸ NIKH ed., *SBNK* 28, 343-345.

⁶⁹ RGASPI, f. 17, op. 162, d. 40, ll. 8, 118-127.

⁷⁰ RGASPI, f. 17, op. 3, d. 1075, ll. 10, 88-89.

⁷¹ RGASPI, f. 17, op. 162, d. 41, l. 12.

⁷² RGASPI, f. 17, op. 162, d. 41, ll. 12-13.

⁷³ RGASPI, f. 17, op. 3, d. 1078, ll. 110-111.

⁷⁴ RGASPI, f. 17, op. 3, d. 1080, ll. 41, 154.

⁷⁵ See footnote number 29.

Kim additionally obtained Stalin's consent in dispatching North Korean experts to learn skills in fields such as air drilling machinery, rubber production, and housing construction. Kim also requested the dispatch of Soviet experts again. His rationale was that more than half (seventy-three) of the 136 Soviet experts, excluding military advisors and college professors, who were working in North Korea as of April 1950 would soon be returning home. Stalin readily agreed.

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,⁷⁶ Soviet assistance to North Korea began to focus on its commitments to the survival of the North Korean state; military specialists were sent to North Korea and Manchuria to work as advisors or trainers for the Korean People's Army at Kim's desperate requests. Furthermore, North Korean leadership would increasingly request Stalin to send weapons, ammunition, production equipment for weapons, automobiles, and oil products to continue its war efforts, a topic of which requires another space to be examined.

"People's Science-Technology" in Motion: The Only Path to an Advanced Economy

This section reconstructs how various North Korean actors, including leaders, techno-scientific practitioners, and workers, understood and practiced "people's science-technology" in 1945-50. North Korean planners in this period paid the greatest attention to laying a strong economic foundation with the goal of establishing an independent, unified government. Under this direction, science-technology was widely popularized by North Korean leadership as the core element of the "advanced" Soviet Union and something that all North Koreans should acquire. While we do not have reliable data to determine whether a "people's science-technology" project was successful in this period,⁷⁷ this article argues that the same project was designed by North Korean planners on the model of the Soviet Union and its science and technology as a pragmatic response to its destitute realities. Understandably, the North Korean state encouraged those who supported and embodied this state-endorsed cultural attitude. By focusing on those promoters' reactions to this project, this section analyzes how the early *North Korean* culture of science and technology unfolded.

⁷⁶ AVPRF, f. 059a, op. 5a, p. 11, d. 4, ll. 90-91.

⁷⁷ For cases of the "application of creative wisdom 창조적 지혜의 적용" in North Korean industrial sites in this period, see Yun, *op. cit.*, 18-42; Kang, *op. cit.*, 42-57; Lee, "The Recognition of Scientific Technologies and People-Making in North Korea, 1945-1950," 15-26. However, the veracity of these cases is highly debatable given that we do not have reliable data to verify such claims.

In liberated North Korea, scientists 과학자 and technicians 기술자 were regarded as equally important experts, though their workplaces ranged from a university laboratory to a workshop in a factory. Given the dire shortage of scientists, the country's technical community played a leading role in rallying the experts' capabilities.⁷⁸ A leading example is the First Convention of Scientists and Technicians in North Korea (CSTNK), held on October 17-18, 1946, which has the historical importance as the “first conference of North Korean scientists and engineers” in the official North Korean narrative.⁷⁹ In the first CSTNK, North Korean experts expressed their aspiration for the creation of a “state-run research institute,” which was realized with the establishment of the North Korean Central Research Institute (NKCRI) 북조선중앙연구소 in February 1947, which was to “study and solve the problems of technical materials.”⁸⁰ However, due to the lack of material support, the NKCRI closed after a few months, transferring its functions to Kim Il-sung University.⁸¹ Around the same time, the country's engineers gathered together at UITNK, which included “industrial engineers, natural scientists, medical scientists, fisheries experts, and agricultural and forestry engineers” in order to improve their performance and to conduct organized activities.⁸²

Kim Il-sung's view of science-technology within his statecraft began to be concretized and in sync with the organized activities of techno-scientific practitioners. At the first CSTNK, Kim declared the importance of science and technology in developing industry with a slogan of “technology determines everything,”⁸³ a rather crude expression of his hope that science-technology would make future North Korea prosperous. The biggest and only force, Kim stressed, which could revitalize the nation was technology. Kim raised six immediate issues as the foremost 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, North Korea must train its own experts and strive to acquire skills from foreign counterparts. Third, engineers should reinforce the mindset of protecting machinery. Fourth, through political training, engineers should become the “most politically important fighters.” Fifth, North Korea must improve the

⁷⁸ Kang, *op. cit.*, 69-95.

⁷⁹ Yun, *op. cit.*, 12-14.

⁸⁰ NIKH ed., *SBNK* 5, 197.

⁸¹ Kang, *op. cit.*, 101-104.

⁸² “The Organization of the All-Union of North Korean Science and Technology 북조선과학기술총연맹 조직,” *Rodong Shinmun*, October 11, 1946. For a brief history of the Union, see *Industrial Knowledge* 1 (January 1949), 12-14 and NIKH ed., *SBNK* 27, 353-355.

⁸³ The speech, allegedly made by Kim Il-sung at this event, was later formalized as “On the Task of Scientists and Engineers in the Present Period 현시기 과학자, 기술자들의 임무에 대하여” in the official narrative. Kim Il-sung, *On Developing Our Country's Science-Technology* 우리 나라의 과학기술을 발전시킬데 대하여 (Pyongyang: Joseon Rodongdang Chulpansa, 1986), 1-5. For a portion of the speech before the alteration of the content, see “A Conspectus of General Kim's Instructions 김장군 훈시 요지,” *Rodong Shinmun*, October 20, 1946.

compensation for engineers, who were then unsatisfied, through increased economic stability. Sixth, statistics should be gathered at each level of industrial enterprises. These tasks 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 emphasized the importance of experts, concluding that “[nothing] can be solved without you.”

Similarly, Kim Il-sung’s expectations placed on a small number of experts were extended to the masses, the core of his political legitimacy. In July 1947, Kim congratulated graduating students from elementary, middle, and high schools in North Korea for their advancement despite the material plight that the country faced.⁸⁴ To Kim’s view, “complete independence of the country” could be attained only when “cadres and technical talents, armed with scientific knowledge” entered the workforce. Therefore, the North Koreans had to “unflinchingly develop themselves by honing science-technology.” What Kim repeatedly emphasized was the issue of “talent 인재,” which was to educate the masses to become like experts. This simple yet ambitious expectation to “scientize 과학화” the masses would continue into the 1950s and beyond.

Understandably, North Korean experts supported the country’s leader for their own reasons. For example, Sin Geon-hui 신건희, who served as the first chief of Kim Il-sung University’s engineering department, and the first rector of Hungnam Institute of Technology, summarized his thoughts under the title “Measures for the Revival of Science-Technology” in the cabinet bulletin *People 인민* in January 1947.⁸⁵ While stating that a “scientific Korea 과학조선” should be established, he asserted that without science, the welfare of the people could not be pursued,⁸⁶ suggesting five primary measures to build a “scientific Korea.” Unsurprisingly, some technocrats, including Jeong Jun-taek, Gang Yeong-chang 강영창, and Ri Mun-hwan 리문환, were exonerated from their pro-Japanese pasts for their expertise, continuing to serve the Party.⁸⁷ According to Ri’s file in the Russian archive, for example, he was born from a landowning family, building his career as an electrician from 1928, to become the person in charge of financial activities at the Western

⁸⁴ Kim Il-sung, “Reporting to Those Graduating in North Korea 북조선 각급 학교 졸업생에게 고함,” NIKH ed., *SBNK* 27, 24-31.

⁸⁵ *People 인민* 2:1 (January 1947), reprinted in NIKH ed., *SBNK* 8, 270-274. For a pioneering account that used the same material, see Kim, “The Foundation and Division of Kim Il Sung University in North Korea,” 200. For Sin Geon-hui’s brief biography, see Kang, *op. cit.*, 86, 89, 102-103.

⁸⁶ A similar focus was repeated later. See “A Note for the First Edition 첫 호를 내면서,” *Natural Science 자연 과학* 1 (February 1949), 4.

⁸⁷ For Jeong Jun-taek’s short bibliography, see RGASPI, f. 495, op. 228, d. 966, ll. 18-18ob. For Gang Yeong-chang’s short bibliography, see RGASPI, f. 495, op. 228, d. 978, l. 3. According to Gang’s file, he worked for what is now Mitsubishi Electric Corporation, before 1945. For Ri Mun-hwan’s short bibliography, see RGASPI, f. 495, op. 228, d. 673, l. 2. For a brief description of the rise of technocrats in this period, see Seo, *op. cit.*, 296-299.

Korea Electrical Company Inc. 西鮮合同電氣株式會社. During the colonial period, Ri himself was a landowner and possessed a “capital asset of 200,000 dollars.” Despite this problematic past, he served as the director of the Industry Bureau at the NKPPC and the North Korean People’s Committee 북조선인민위원회. While it is difficult to ascertain such experts’ personal thoughts, it is safe to assume that those experts’ viewpoints, resonating with Kim Il-sung’s 1946 instructions, were much more a pledge to work harder than a concrete policy.

These expectations of the North Korean political and techno-scientific circles were disseminated through various media, shaping a particular message that all members of society should play their roles in constructing a new nation. Accordingly, specific directions on how to cover issues related to science-technology were given to the media, as well as in lectures, seminars, and gatherings. For example, one *Rodong Shinmun* article relayed a statement by a North Korean biologist, who stated that his fellow scientists worked to “popularize 인민화” science under the Party’s guidance. Instead of explaining what “popularization” or “science” meant, he argued that scientists should realize that only under the current North Korean regime could they spread the results of their efforts to the masses. That is, experts were expected to rigidly support the Party.⁸⁸ Similarly, the UITNK urged its members to exhibit “patriotic zeal and noble techniques.”⁸⁹

A close reading of a North Korean journal offers a glimpse into how North Korean workers exhibited “people’s science-technology.” On June 6, 1947, young workers between the ages of nineteen and twenty-seven gathered for a discussion on “honing science-technology” in Pyongyang.⁹⁰ The session discussed 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 a closer investigation for understanding how the “people’s science-technology” project envisaged a model worker. Most participants began working as low-level technicians because of poverty and the lack of educational opportunities in colonial Korea. Jang Gwan-pil 장관필, 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, revealing that “measuring invisible coal seams in the great, majestic ground” was so enjoyable. Yi Yeong-hi 이영희 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 were fond of their specific vocations, which became the core message to be relayed to the masses. Indeed, the participants had one thing in common: they

⁸⁸ “Requesting the Establishment of the Provisional Government that Could Popularize Science 과학을 인민화할 수 있는 임시정부의 수립을 요구,” *Rodong Shinmun*, May 29, 1947.

⁸⁹ NIKH ed., *SBNK* 27, 353-355.

⁹⁰ *Mass Science* 1 (August 1947), 22-26.

were ready to put more effort into improving labor productivity and utilizing raw materials more efficiently. It seems that the UITNK continued to host these types of discussion sessions until the second half of 1949.⁹¹

With growing expectations for the country's first two-year plan, North Korean leadership in early 1949 began promoting "people's science-technology" in earnest. This project coincided with Kim Il-sung's judgments that there existed a long way to go in eradicating "technical poverty" in North Korea and that a number of qualified engineers were required to manage industry in South Korea after the unification. 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" given by the Soviet Union in "acquiring advanced science-technology";⁹² though the details of such help, particularly those that would harm Kim's authority as a national leader, were not revealed to the people. Accordingly, the two-year plan stipulated the publication of more newspapers, magazines, and books as a way to involve the masses with modern science.⁹³ North Korea also began to publish serial publications of science and technology such as "Science World Library 과학세계문고" and the "Natural Science Series 자연과학총서." While the former was comprised of translations of Soviet publications, the latter was North Korean scientists' writings. Namely, North Korea embarked on mobilizing leading scientists to popularize "people's science-technology."

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* 자연 과학, founded with Toh Sang-rok as the chief editor, explained why all North Koreans should learn the natural sciences.⁹⁴ One of the key elements in "people's science-technology" was enlightenment, or the overthrow of "myth," which was a crucial part of the plan to improve productivity by creating "working people 근로 인민."⁹⁵ Within the framework of this project, Toh emphasized the example of a "developed country 선진 국가."⁹⁶ As such, the dominant view that science-technology could solve all ills formed the core of North Korea's culture of science and technology in the late 1940s.

⁹¹ *Industrial Knowledge* 9 (September 1949), 30-34.

⁹² Kim Il-sung, "A concluding remark," *Worker* 3 (February 1949), reprinted in NIKH ed., *SBNK* 47, 445.

⁹³ "The summary of the execution of the 1948 plan to develop the 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 조선민주주의인민공화국 북반부의 인민경제 부흥발전을 위한 1948년 계획실행 총결과 1949년~1950년 2개년 계획에 관한 법령," *Worker* 3 (February 1949), reprinted in *Ibid.*, 456-457.

⁹⁴ *Natural Science* 1 (February 1949), 9-13, 18.

⁹⁵ Bukjoseon Rodongdang Jungang Bonbu Seonjeonseondongbu Gangyeongwa, *Science and Superstition* 과학과 미신 (Pyongyang: Bukjoseon Rodongdang Chulpansa, 1949). Lee, "The Recognition of Scientific Technologies and People-Making in North Korea, 1945-1950."

⁹⁶ Toh Sang-rok, *Dynamics* 역학 (Pyongyang: Gungnip Inmin Chulpansa, 1949), 3.

“People's science-technology” that urged all North Koreans to build an advanced country reflected the fact that North Korea strove to learn from the Soviet Union's science and technology. The propaganda on Soviet scientific achievements took place simultaneously in both Moscow and Pyongyang, which instilled a sense of envy of the Soviet Union, a “people's country” where science and technology were being applied to build communism.⁹⁷ Indeed, North Korean leaders made an important reference to Stalin in preparing for the leap into a socialist country. One of the most detailed accounts of the Soviet Union written in Korean in the 1940s stated that the “Great Stalin” had paved the way for scientific developments in Soviet Russia.⁹⁸ According to the same publication, advanced science was nothing but an attitude, meaning that experts should serve the people at any time, handing over all their “achievements” to them. As Stalin's “teaching” was explained as an instruction that played a key 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 North Korean planners not to embrace this message that defined science as an attitude.⁹⁹

Therefore, “people's science-technology” that was emphasized by North Korean leadership by the late 1940s with the goal to increase industrial productivity following the example of the Soviet Union, became a dominant mobilization mechanism to create a “democratic base 민주 기지.” *Rodong Shinmun* frequently penned that Kim Il-sung University students, who were recognized as model student-intellectuals, devoted themselves to advanced scientific research under the great expectation of the state.¹⁰⁰ Entering 1950, the same newspaper announced the news of academic conferences for university students and teachers in Pyongyang, which were held for the first time,¹⁰¹ and likewise proclaimed desirable cases of applying science-technology in rural areas, construction sites, and military bases.¹⁰²

⁹⁷ Joso Munhwa Hyeopoe Hamheung Jibu, *On the Soviet Union* 조선 사정 (Hamheung: Hamnam Sinmun Chulpansa, 1946), 22-23.

⁹⁸ Kim Ye-yong, *People's Country – the Soviet Union* 인민의 나라 - 소련 (Pyongyang: Munhwa Chulpansa, 1949), 145-148.

⁹⁹ Bukjoseon Rodongdang Jungang Bonbu Seonjeonseondongbu, *Stalin is the Great Founder and Leader* 스탈린은 쏘베트 동맹의 위대한 창건자이며 령도자이다 (Pyongyang: Bukjoseon Rodongdang Chulpansa, 1949).

¹⁰⁰ “Study harder in research of science-technology! 과학기술 탐구에 더 한층 분투!,” *Rodong Shinmun*, June 11, 1949; “Devote yourself harder to research of advanced science in the struggle for the unification of the country 조국통일 위한 투쟁 속에서 선진과학 연구에 더욱 정진,” *Rodong Shinmun*, October 1, 1949.

¹⁰¹ “The opening of the first conference for students' scientific research 제1회 학생과학연구 콘페런찌야 개최,” *Rodong Shinmun*, April 16, 1950.

¹⁰² “I acquired advanced science from the army 나는 군대에서 선진적 과학을 소유하였다,” *Rodong Shinmun*, February 9, 1950; “The successful implementation of the irrigation work is an attack of science that breaks through nature's accidental tidewater damage 관개 공사의 성공적 실시는 농촌에서의 자연의 우연적 조해를 돌파하는 과학의 공격이다,” *Rodong Shinmun*, February 12, 1950; “The widespread application of advanced scientific farming methods in order to prevent natural

Nevertheless, none of these practitioners of “people’s science-technology” would have thought that they would soon be exposed to one of the most disastrous wars to take place during the Cold War period.

Concluding Remarks

It is important to understand that the pursuit of advanced science and technology, shown as the enactment of “people’s science-technology” in this study, was universal across the Cold War divide. This historical background makes it difficult to see the progression of early North Korea’s culture of science and technology, based on techno-scientific exchanges between North Korea and the Soviet Union, simply as either Sovietization or the realization of North Korea’s own capabilities. Rather, a “people’s science-technology” project was a historical outgrowth of North Korea’s effort to learn from the Soviet Union to become an advanced industrial power, which was directly but insufficiently supported by Stalin’s Russia. From the late 1940s, North Korean planners prioritized enriching the country’s poor status and pursuing the rapid expansion of manpower with expertise, which exonerated the country’s experts from their suspicious pasts. These experts, while growing politically and professionally, grew closer to the advanced Soviet Union at the expense of a total rupture from such networks of science and technology managed by Japan.¹⁰³ Meanwhile, the Soviet Union achieved its intended goal to establish a pro-Soviet regime on the Korean Peninsula, creating a reliable buffer zone for socialism at the tip of East Asia. In this vein, it was profitable for Moscow to provide limited assistance to North Korea.

With an assertive, unwavering attitude in matters of science and technology, North Korea’s “people’s science-technology” met a major turning point during and after the Korean War. In the post-war 1950s, North Korean planners adhered to a developmental strategy amid chronic material scarcity, which led to the enforcement of a “squeezing a dry rag” type of capital accumulation.¹⁰⁴ Within this trend, North Korean experts would be directly mobilized to production sites in the late 1950s.¹⁰⁵ Moreover, a division between elite science-technology and mass science-technology 대중의 과학기술 would be made, the topic of which requires another space to be examined.

Throughout the 1950s, North Korea had opportunities to increase the scale of its interactions in science and technology with other socialist countries, which were

damage in advance 자연의 피해를 미연에 방지키 위해 과학적 선진영농법을 광범히 적용,” *Rodong Shinmun*, April 1, 1950.

¹⁰³ Mizuno, Moore, and DiMoia eds., *op. cit.*

¹⁰⁴ Jo, *op. cit.*, 247, 251.

¹⁰⁵ Kang, *op. cit.*

critical to improving the country's industrial production. However, as in the 1940s, it meant a subsequent increase in the price which North Korea had to pay. Under these circumstances, Kim Il-sung enacted a strategy that would base the development of science-technology primarily on its own strength, minimizing costly cooperation with foreign countries, a topic of which lies beyond the scope of this article. The "people's science-technology" as a state-endorsed cultural attitude on science and technology in the 1940s was a convenient strategy that would pave the way toward mobilizing the nation into developmental projects that would be carried out under the name of *Juche* starting in the early 1960s.

Abstract

This article examines how North Korean leadership in 1945-50 strove to popularize “people’s science-technology 인민의 과학기술,” equipping an assertive attitude in matters of science and technology, arguing that the Soviet Union served as the most important point of reference that tremendously inspired, and to a lesser degree materially supported, North Korean planners to employ this attitude as a mobilization scheme. Drawing upon a range of previously unexamined Soviet archival sources and relevant North Korean publications, it is this author’s intent to offer original narratives of how limited but crucial Soviet assistance undergirded North Korean leaders’ quest for an advanced economy and how various North Korean actors understood and acted upon “people’s science-technology.” Charting the intentions and roles of North Korean policy-makers, North Korean expert communities, and the Soviet authorities in the making of the culture of science and technology in early North Korea, the expectations and goals as perceived and practiced by the North Koreans are revealed in this research. Additionally, North Koreans’ understanding of science and technology, which greatly boosted the country’s extended engagement with the socialist bloc in the search for its own mode of continuing industrial development in the subsequent decade, is examined.

Keywords: North Korea, the Soviet Union, North Korean science and technology, assistance, North Korean culture of science and technology, the Cold War