

When the Political Spotlight is On: Social Evaluations of Ri Sŭnggi and Ryŏ Kyŏnggu, Two Chemical Engineers in North Korea

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Introduction

In the history of North Korean chemical engineering, two scientists stand out above all others: Ri Sŭnggi (李升基, 1905-1996) and Ryŏ Kyŏnggu (呂慶九, 1913-1977). Ri and Ryŏ were both born in the southern region of the Korean peninsula, studied in Japan, and returned home after Korea's liberation from Japan in 1945. They were both professors at Seoul National University for some time and then went to the North. In North Korea, Ryŏ and Ri conducted experimental projects on polyvinyl chloride (PVC) fiber and polyvinyl alcohol (PVA) fiber respectively. Ryŏ was once a leading scholar in his field; however, his top position was taken over by Ri after the PVA fiber that Ri was researching was successfully industrialized. Despite the fact that Ryŏ Kyŏnggu also contributed to the development of the North Korean chemical industry, his name and whereabouts received little attention in North Korea for quite a while.

Experimental science is closely intertwined with society and politics. Socio-politics influences the direction of experimental science and the result of the experiment is connected to the evaluation of the political

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regime. A striking example is the competition for economic progress and the space race by way of the development of science and technology between the capitalistic bloc and the socialist bloc. Beyond the competition over legitimacy in the Cold War context, modern nation-states globally have utilized certain technological achievements as a means to strengthen their nationalism. Creating a heroic figure in science and technology is also in the same vein. In North Korea, science and technology are more deeply connected to politics, which often gives excessive prominence to certain things that North Korea considers exemplary. Vinalon is such a case.

Melissa Leach, a British social anthropologist, argues that experimentality is part of power relations and thus experimental projects have winners and losers.¹ Although her focus was to examine the development project as experiment in relation to disciplining governmentality, her insight offers a useful concept that can be applied to the analyses probing how experimental projects operate in each society in different ways. In this paper, I bring in the concept of winners and losers as a framework in analyzing how the evaluation of Ryō and Ri's research and as scientists was linked to North Korea's socio-political interests. In other words, the evaluation of these scientists was dependent more on how their research could be portrayed socially, rather than on their level of technological achievement.

This paper examines the stories of the two chemical engineers in relation to experimental projects propelled by North Korea, focusing on why Ri's PVA fiber (vinalon) had more appeal in the political narrative than Ryō's PVC fiber.² I argue that Ri's vinalon was more fit to strengthen North Korea's techno-nationalistic discourse in that Ri was the inventor

1 "Experimentality," Lancaster University, accessed November 10, 2018, <https://www.lancaster.ac.uk/experimentality/blog/workshop1-leach.html>

2 This paper is based on a section of the fifth chapter in the author's dissertation titled, "The Thread of Juche: Vinalon and Materially-Embodied Interdependencies in North Korea, 1930-2018" (Ph.D. Diss., Columbia University, 2020).

of the polyvinyl alcohol fiber and its successful industrial production in North Korea was the first among the socialist bloc countries. As North Korea highlighted Ri's vinalon and exaggerated the merits of vinalon, the prospect of developing Ryō's PVC fiber as a textile fiber was put aside for a fairly long time in North Korea. In addition, I investigate when Ryo's name resurfaced in North Korean media and why. In doing so, this paper will show that the evaluation of scientists depends on the political and social interests at a given historical juncture.

In regard to Ri Sūnggi, since he was a central figure in the history of North Korean science who even received the title of labor hero thanks to the industrialization of vinalon, Ri's life story has been covered by existing studies³ as well as the North Korean media. Likewise, vinalon has been dealt with in the ways that it related to Juche ideology, appropriated colonial legacies, played a role in weaving the North Korean nationalistic structure materially, and so forth. In contrast, Ryō Kyōnggu and PVC fiber have yet to be addressed in the North Korean historiography. This paper will be a new addition to the existing literature by bringing Ryō Kyōnggu in comparison to Ri Sūnggi.

This article mainly uses North Korean primary sources such as media reports, periodical articles, books, and memoirs. Although there are differences of degree depending on what kind of material, all publications in

3 For instance, Kim Kūnbae, "Ri Sūnggi ūi kwahak kwa pukhansahoe." *Han'guk kwahaksahakhoeji* 20, no. 1 (June 1998): 3-25; Kim Taeho, "Ri Sūnggi ūi pukhan esōūi 'vinalon' yōn'gu wa kong'ōp'wa," *Han'guk Kwahaksahakhoeji* 23, no. 2 (Dec. 2001): 111-132; Kim Dong'won, "Two Chemists in Two Koreas," *AMBIX*, vol. 52, no. 1 (March 2005): 67-84; Kim Kūnbae, "Nambuk ūi tu kwahakcha Yi Taekyu wa Ri Sūnggi," *Yōksabip'yōng* (Feb. 2008): 16-40; Kim Kūnbae, "50-60nyōndaebukhan Ri Sūnggi ūi pinallon kongōp'wa wa chuch'e hwangnip," *Yōksabip'yōng* (Aug. 2015): 111-131; Cheehyung Harrison Kim, *Heroes and Toilers: Work as Life in Postwar North Korea, 1953-1961* (New York: Columbia University Press, 2018); Eunsung Cho, "The Thread of Juche: Vinalon and Materially-Embodied Interdependencies in North Korea, 1930-2018" (Ph.D. Diss., Columbia University, 2020).

North Korea are propagandistic since they are issued under the control of the North Korean authorities. However, what this paper aims to look at is how Ryō and Ri have been described within North Korean society and how the evaluation of the two scientists has changed over time. Therefore, it is appropriate to analyze North Korean sources produced from its own perspective.⁴ In particular, there are two books written by Ryō and Ri, *P'olli yōmhwa pinil chejo* [The making of polyvinyl chloride] and *Hwahaksomyu iyagi* [The story of chemical fiber].⁵ Since these were published before their synthetic fibers were industrialized, we can see the prospect that Ryō and Ri had regarding their projects in the early stages.

The Early Lives and Careers of Ryō and Ri

Ryō Kyōnggu⁶ (left) was born in 1913 in Kwangju, Kyōnggi Province near Kyōngsōng (present day Seoul) to a wealthy family during the colonial era.⁷ He graduated from Chungang High School or *Chungang*

4 In regard to Ryō Kyōnggu, in particular, North Korean materials are almost the only way to trace his life after going to the North.

5 These sources are new source materials that I found at Lenin Library in Moscow.

6 Ryō Kyōnggu was the nephew of Ryō Unhyōng, to be specific, Ryō Unhyōng's younger cousin Ryō Unil's eldest son. Ryō Unhyōng was a very famous and popular independence activist who was categorized as a center-left leader in the South. He made a great effort to make the left and right as well as the North and South cooperate in post-liberation Korea; however, he was assassinated by a right-wing extremist in Seoul on July 19, 1947. It was the 12th attack on him, and news of his death was reported even in *The New York Times*. "Lyuh, Leftist Chief, Is Killed in Korea," *The New York Times*, on July 20, 1947. Although his last name is spelled as Yō in South Korea, I herein Romanize it as Ryō, since I refer to him in relation to Ryō Kyōnggu. Meanwhile, it is interesting that Ryō Kyōnggu was Ryō Unhyōng's relative and Ri Sūnggi was a distant relative of Rhee Syngman who was a right-wing politician and the first South Korean president.

7 "Salm ūi pogūmjari," Uriminjok kkiri, accessed October 10, 2018, <http://www.uriminzokkiri.com/index.php?ptype=book&no=2503&pn=4>

*kodŭng pot'ong hakkyo*⁸ in Seoul in 1929 and went to Japan to study. Ryō studied polymer chemistry and graduated from the Department of Applied Chemistry of Waseda University, Tokyo, in 1936. Waseda University was a school where a fair number of Korean



students who were interested in engineering studied during the colonial period, although not as many as went to Kyoto Imperial University.⁹ After graduation, Ryō worked at a research institute in Japan and returned to Korea before Japan surrendered in World War II on August 15, 1945.

He became a professor in engineering at Seoul National University immediately after liberation from Japan; however, his appointment period was not very long. Many professors at Seoul National University were disappointed with the forced restructuring of the university under the United States Military Government,¹⁰ and Ryō was one of those who

Rim Yich'öl's book entitled *Salm ūi pogŭmjari* [A place for happy living in one's life] (Pyongyang: Pyongyang Ch'ulp'ansa, 2009) was published in a series on the North Korean website Uriminjok kkiri. The North Korean media *Tong'il Sinbo* described that Ryō was born in Seoul, but the South Korean encyclopedia Doopedia stated that he was born in Kwangju, Kyōnggi Province. Kim Chōngju, "Minjok ūi kwahakcha rŭl akkigo naesewōjusiyō" [Cherishing and putting up a national scientist], *Tong'il Sinbo*, September 23, 2006; "Yō Kyōnggu," Doopedia, accessed November 1, 2020, https://www.doopedia.co.kr/doopedia/master/master.do?_method=view&MAS_IDX=101013000817869

- 8 During the colonial era, *kodŭng pot'ong hakkyo* meant secondary education, which was comprised of middle school and high school by today's educational system.
- 9 Kim Kŭnbae, *Han'guk kŭndae kwahak kisul illyōk ūi ch'ulhyōn* [The emergence of the modern Korean science and technical personnel] (Seoul: Munhakkwajisōngsa, 2005), 267.
- 10 This was called the "*Kuktae'an* (Seoul National University Building Proposal, *kuklip Seoultaehakkyo sōllip'an*) crisis." As for this, refer to Choi Hyaewol, "*Kuktaean P'adong*," *Nonjaeng'ūro ingnŭn han'guksa* [The Korean history reading through debates] (Seoul: Yōksapip'yōng, 2009).

opposed the proposal and as a result was removed from his teaching position. In September 1946, Ryō Kyōnggu along with some other scientists received an invitation to come to the North from an agent dispatched by Kim Ilšōng.¹¹ He decided to go to the North and put his plan into practice in the fall of 1946.¹² As a matter of fact, from the late 1940s to the year 1950, quite a number of scientists moved to the North. It was mainly because North Korea implemented active policies of supporting science and technology from its founding.¹³

As a chemical engineer, Ryō was called to the Hūngnam area, which had been the center of Korea's chemical production since the colonial period. North Korea was struggling to restore the factories destroyed shortly before the end of World War II,¹⁴ and Ryō was well suited to lead

11 Kim Chōngju, "Minjok ūi kwahakcha rŭl akkigo naesewōjusiyō," *Tong'il Sinbo*, September 23, 2006.

12 In regard to the period when Ryō went to the North, there are several different dates mentioned in North Korean materials. According to a North Korean weekly newspaper *Tong'il Sinbo*, it seems that Ryō Kyōnggu crossed the 38th parallel in September 1946 with other scientists who received the same invitation. The book entitled *Salm ūi pogŭmjari* describes that Ryō went to the North in October 1946. According to Ryō Unhyōng's daughter Ryō Wōngu's testimony in the interview with a South Korean magazine, however, Ryō Kyōnggu entered Pyongyang across the 38th parallel in March 1946. She also stated that Ryō Kyōnggu went to the North on the recommendation of Ryō Unhyōng. Sin Chunyōng, "Interview with Ryō Wōngu- ch'ongubaeksasipnyōn abōji Ryō Unhyōng, ilwang gwa chosōndongnip tamp'anhaetta," *Minjok 21* 2, May 2001, 29.

13 With regard to this, refer to Kang Hoje, *Pukhan kwahak kisul hyōngsōngsa I* [The history of the formation of the North Korean science and technology] (Seoul: Sōnin, 2007); Kim Kūnbae, "Wōlbuk kwahakkisulcha wa Hūngnam kongōptaehak ūi sōllip" [Scientists and engineers who went to North Korea and the establishment of Hūngnam Technical College], *Asea yōn'gu* [Asian Studies] 40, no. 2 (December 1997): 95-130.

14 As its defeat in the Second World War was approaching, Japan destroyed the factories that could be used by their enemies; after liberation, the Soviet army that entered northern Korea extracted equipment from the factories, which was recorded as a social problem by the Korean provisional people's committee. According to

the effort. He contributed to the reestablishment of the factories in this area and trained technicians as a chief engineer. In recognition for his work in restoring the factories in Hŭngnam, he won official commendation from Kim Ilsŏng and was made the director of the Hŭngnam Research Institute, under the Ministry of Industry, in 1948.¹⁵

Ri Sŭnggi (pictured on the right on page 259.) was born in 1905 in Tam'yang, South Chŏlla Province. When he was sixteen he moved to Seoul where his paternal aunt lived for a better education for there were no adequate schools in the countryside where he grew up.¹⁶ Ri graduated from *Chung'ang kodŭng pot'ong hakkyo*, which Ryŏ also attended, in 1925. At that time, Korean students could go to a three-year high school¹⁷ when graduating from *kodŭng pot'ong hakkyo*. At that time, most students wanted to go to Japan to study, including Ri. After he passed an entrance examination to Matsuyama High School (present day Ehime University) in Shikoku, Ri was able to attend the school with the financial support of a distant relative.¹⁸ Yet when the financial aid from his relative was cut

Pak Pyŏng'yŏp who was a high official of the Korean Workers' Party, in the Su'p'ung power plant there was an incident where a Korean technician who tried to stop Soviet soldiers from taking the generators off was shot. He also said that "while Soviet soldiers claimed that the facilities are the Japanese property, we stood against it by arguing that those are in fact ours." Pak Pyŏng'yŏp, *Chosŏn minjujuŭi inmin konghwaguk ūi t'ansaeng*, ed. Yu Yŏnggu and Chŏng Ch'anhyŏn (Seoul: Sŏnin, 2010), 28.

15 "Salm ūi pogŭmjari," *Uriminjok kkiri*, accessed October 10, 2018, <http://www.uriminzokkiri.com/index.php?type=book&no=2503&pn=4>

16 Although Ri Sŭnggi's memoir briefly touches on this, his biography, which was published in 2005, includes more details on the circumstances in which Ri went to Seoul for a better education. Ri Sŭnggi, *Kwahakcha ūi sugi* [A Scientist's Memoirs] (Pyongyang: Kungnip Ch'ulp'ansa, 1962), 4; Kim Hyesŏn, *Kkumŭl silhyŏnhan kwahakcha* [A scientist who realized a dream] (Pyongyang: Kŭmsŏng Ch'ŏngnyŏn Ch'ulp'ansa, 2005), 15-17, 20-23, 27-29.

17 This high school is equivalent to a current college education; to be specific, it is around the sophomore to junior level.

18 Kim Hyesŏn, *Kkumŭl silhyŏnhan kwahakcha*, 32. Ri's memoir mentions the fact

off, he barely managed to graduate from high school since he had to make his living and tuition fees by delivering newspapers and milk. Considering that the North Korean source about Ryō Kyōnggu narrated that he was born to a rich family, we can presume that Ryō did not experience such financial problems that Ri went through in his period of studying abroad.

Ri Sūnggi entered the Department of Industrial Chemistry of Kyoto Imperial University as the only Korean among a total of 24 students in 1928, and graduated from the university in 1931.¹⁹ While working at the Institute for Chemical Fiber Research at Kyoto Imperial University, he succeeded in the development of a new synthetic fiber made from polyvinyl alcohol in 1939. This fiber was titled “Synthetic Fiber No. 1 (合成一号),” which was the second synthetic fiber after nylon. Ri received his Ph.D. from Kyoto Imperial University in that year. He was the first Korean to earn a doctorate in engineering in Japan. Ri Sūnggi continued experiments to realize the industrialization of the polyvinyl alcohol fiber until Japan was defeated in World War II; however, he returned to Korea without attaining the object of his ambition for three reasons. One was that there was lack of resources for investment due to the war. The second reason was that the research institute to which Ri belonged was forced to support the armaments industry by the Department of the Army of Japan in 1944.²⁰ Another reason was that Ri was placed in the custody of a

that Ri’s father asked Ri Mongjae, who was a distant relative and a large landowner, to support Ri Sūnggi’s school expenses in Japan so Ri could go to Japan on the condition that Ri taught Ri Mongjae’s younger brother as private tutor in Japan. Ri Sūnggi, *Kwahakcha ūi sugi*, 6. Meanwhile, a slightly edited version of Ri’s memoir was serialized in the magazine *Choguk* (published by Ch’ongryōn in Japan) from the June issue of 1966 to the August issue of 1967. In this version of his memoir, the fact that Ri Mongjae was Ri’s relative was not mentioned, and it was only mentioned that Ri Mongjae was a large landowner.

19 Kim Hyesŏn, *Kkumŭl silhyŏnhan kwahakcha*, 43.

20 Ri Sūnggi, *Kwahakcha ūi sugi*, 19. Kim Taeho also briefly mentioned that Ri was ordered to switch his study to the study for military use, based on Ri’s memoir. Kim, *op. cit.*, 118.

military force in Osaka in July 1945 on the suspicion that he had seditious ideas against Japan, and he was not released until August 15, 1945.

After returning home, Ri began teaching as a Professor at Seoul National University and assumed the position of the Dean of the College of Engineering in 1948. Yet, the social environment including the *Kuktae-an*²¹ crisis made him very disappointed and he left Seoul to retire to his hometown. When the Korean War broke out in the summer of 1950, Ri Sŭnggi crossed the border to North Korea, finally accepting North Korea's invitation to come to the North that he had received since the middle of 1946. Compared to Ryō, Ri Sŭnggi's decision to go to North Korea was rather late. In his memoir, Ri described the anecdote of the day when Ryō came to his home and talked about the social situation of the South very critically;²² he wrote the following in retrospect:

“Ryō Kyōnggu (Ryō XX – marked in the text), his attitude was firm and his own view also clear. I could not give a definite answer. If I agreed with his opinion, I should have behaved like him, but I was not ready to do it at that time. ... I had no such courage to leave without having obvious knowledge about the North. So I could not but close my mouth and lower my head. ... Ryō Kyōnggu left for the North on the following day.”²³

Ri's memoir also tells the stories of which he went to North Korea and met Ryō. Herein Ri expressed his gratitude for the support of his research by the North Korean Party even during the war. In addition, Ri described that he felt sorry as well, mentioning his lack of contribution in comparison with Ryō; for instance, according to Ri's memoir, Ri said to Ryō, “You have a clear conscience because you have accomplished a lot al-

21 See on page 259, footnote 10.

22 Ri, *Kwahakcha ūi sugi*, 36-7.

23 Ri, *Kwahakcha ūi sugi*, 37.

ready.”²⁴ In North Korea, Ri strived to realize the industrialization of the polyvinyl alcohol fiber that he invented, and later succeeded in the industrial production of the fiber, which I will discuss in the following section.

Between Competition and Cooperation

During the war, Ri and Ryō conducted their own research in laboratories with the support of the North Korean authorities, looking forward to the day when they could (re)construct the North Korean chemical industry. In the case of Ryō and Ri, in particular, there was a cooperative aspect since both PVC and PVA are based on carbide produced from limestone and anthracite. After the war was over, they began their own research project in earnest and a sort of tension between the two gradually formed. It was because they had a strong desire to succeed in their projects as soon as possible and both required resources from the Party. If one received more support required for his research, that scientist would be in an advantageous position for the success of his research. Aside from this support issue, in general there is a certain amount of rivalry between scientists in the same field.

In North Korea, the Academy of Sciences, which was established in 1952, forms the core institution of scientific and technical studies. After the war, Ryō Kyōnggu worked at the Institute for Chemical Research of the Academy of Sciences as the director. Given that war-ravaged North Korea suffered from a lack of daily necessities such as clothes, shoes, bags, toothbrush handles, and cases for cosmetics, Ryō launched a research project on vinyl chloride and polyvinyl chloride. Vinyl chloride is used as feedstock in the production of the standard plastic material polyvinyl chloride. His research, like Ri Sūnggi's, received full support from the Party even during the Korean War. This was because polyvinyl chloride, commonly abbreviated as PVC, is one of the most widely produced

24 Ri, *Kwahakcha ūi sugi*, 85.

synthetic plastic polymers and is used in many applications, such as pipes, electric cables, construction, and clothing. Furthermore, PVC fibers are also produced from carbide, which is made from anthracite and limestone which are abundant in the North.

With high expectations for PVC products, the Third Party Congress held in April 1956 made a decision to include the construction of a polyvinyl chloride factory within the First Five-Year Plan from 1957 to 1961.²⁵ In the Third Party Congress, Kim Ilsŏng said that “by restoring the Pon’gung carbide workshop completely, we will produce alcohol from carbide, and have to prepare for producing organic synthetic industry products such as synthetic fibers, vinyl chloride, and so on. Since our country has a lot of electric resources and abundant raw materials like limestone and anthracite, we have the potential to develop a large scale electric chemical industry.”²⁶ This suggests Kim Ilsŏng’s blueprint for the path that Korea should take instead of blindly following a pre-existing path established by the colonial powers.

The reason that the word vinalon did not appear in Kim’s speech above was that in those days the word did not exist yet. North Korea’s brand name for polyvinyl alcohol fibers, vinalon, was coined in 1957. Until that point, Ryŏ’s PVC research had appeared to have greater prospects for developing the chemical fiber field as compared to Ri’s vinalon research. Yet, since Ri Sŭnggi’s experiments for vinalon’s industrial production in a pilot plant produced positive results and the Kim Ilsŏng group nearly overpowered the pro-USSR/pro-China factional groups,²⁷ a Cabinet deci-

25 Ryŏ Kyŏnggu, *P’olli yŏmhwa pinil chejo* [Producing polyvinyl chloride] (Pyongyang: Kungnip Kongŏp Kisul Sŏjŏk Ch’ulp’ansa, 1960), 8.

26 Kim Ilsŏng, “Chosŏn rodongdang che 3ch’a taehoe esŏ han chung’ang wiwŏnhoe saŏp ch’onggyŏl pogo (April 23, 1956),” in *Pukhan munhŏn yŏn’gu: munhŏn gwa haeje I*, ed. Suh Daesook (Seoul: Kyŏngnam University Press, 2004), 118; originally from *Chosŏn rodongdang che 3ch’a taehoe chuyo munhŏnjip* (Pyongyang: Chosŏn Rodongdang Ch’ulp’ansa, 1956), 3-105.

27 The Kim Ilsŏng group pushed forward to the industrial production of vinalon, while the other political groups were against the idea.

sion on accelerating the construction of vinalon and vinyl chloride factories was reached on October 9, 1958. The decision stipulated that the Party would build a 6,000 ton-scale vinyl chloride factory and a 10,000 ton-scale vinalon factory by 1959 and 1960 respectively.²⁸

With regard to the vinyl chloride factory, North Korea constructed a pilot plant that had the capacity to produce 6 tons yearly in 1954 and then barely succeeded in building a bigger pilot plant with an annual production capacity 10 times higher than the previous one in 1957.²⁹ Given that in the second half of 1958, North Korea made plans to operate a 6,000 ton-scale vinyl chloride factory in 1959,³⁰ it seems that Ryŏ Kyŏnggu's research on manufacturing the PVC products attained significant progress in 1958. The vinyl chloride factory (*yŏmhwa pinil kongjang*) was completed in Hŭngnam in 1960, a year later than originally planned. The science movie titled "*Yŏmhwa pinil*" or "Vinyl Chloride" was produced in 1961,³¹ and many North Korean newspapers and magazines reported a variety of products being made from PVC, such as raincoats, bags, shoes, combs, cosmetic cases, children's toys, pipes, and so forth.

In the case of the vinalon factory, it was not until a year after the 1958 Cabinet decision that factory construction was undertaken. As experiments for the industrial production of vinalon began to bring about positive results, the factory site located between Hŭngnam and Hamhŭng was chosen by Kim Ilsŏng on March 25, 1959.³² In 1960, the North Korean leadership changed plans for the factory from an annual production ca-

28 Cabinet decision No. 122 "Pinallon mit yŏmhwapinil kongjang kŏnsŏl ūl ch'okchinsik'ilde kwanhayŏ" (October 9, 1958); "Pinallon mit yŏmhwapinil kongjang kŏnsŏl ūl tŏuk ch'okchinsik'ija [Let's accelerate the construction of vinalon and polyvinyl chloride factories]," *Sŏndongwŏn such'ŏp -sanŏp pumun* [Agitators' notebook - industry sector] no. 22 (November 1958), 17-8.

29 Ryŏ Kyŏnggu, op. cit.

30 Pang Ponghwal, *Illyu e pongmuhanŭn hwahak* [Chemistry being in the service of humankind] (Pyongyang: Adong Tosŏ Ch'ulp'ansa, 1958), 119.

31 *Chosŏn yŏnghwa* [Korean film] reported about this movie in September 1961.

32 Kim Hyesŏn, *Kkumŭl silhyŏnhan kwahakcha*, 160.



The production of vinyl chloride products. [Left-top] The polymerization workshop of the Hüngnam vinyl chloride factory. Source: *Chosŏn nyŏsŏng* (February 1961). [Left-bottom] Members of the Wŏnsan cooperative for producing necessities are making various vinyl chloride products. Source: *Chosŏn nyŏsŏng* (April 1961) [Right] Two members of the Hamhŭng cooperative for the production of industrial goods are making raincoats from vinyl chloride. Source: *Chŏllima* (February 1961).

capacity of 10,000 tons to one of 20,000 tons.³³ This was to make the vinalon factory a symbol of the North Korean economy that was rapidly developing. The factory, with an annual production capacity of 20,000 tons, was the largest polyvinyl alcohol fiber factory in the world in 1961. Moreover, the estimated completion date moved up from August 15, 1961 to May 6, 1961. As for why the North changed the completion date, it may be construed as North Korea's strong determination to make sure it was done before the Fourth Party Congress scheduled for September 1961,

33 Cho Ch'ŏnho, "Ri Sŭnggi paksa rŭl ch'ajasŏ [Looking for Dr. Ri Sŭnggi]," *Chŏllima* (March 1960), 31. In the interview with this magazine, Ri Sŭnggi said that he and other researchers were conducting research not only on vinalon but also on nylon and nitron in the laboratory within the Pon'gung chemical factory.

so that they could boast about vinalon as a representative achievement of their development in science and technology. At the time, the Kim Ilsŏng group pushed forward the idea of an independent national economy and vinalon was considered a perfect fit for it.

After the construction of the vinalon factory hit its full stride in 1960, reports of vinalon began to overtake those of vinyl chloride in the media. After the February 8 Vinalon Factory was completed, vinalon products virtually monopolized the spotlight. There are a few cases that suggest the shifting positions of the two chemists. For example, Ryŏ Kyŏnggu was the director of the first North Korean chemical research station, the Hŭngnam Research Institute; however, in the Hamhŭng branch of the Academy of Sciences established in September 1960 as the expanded version of the Hŭngnam Research Institute, Ryŏ Kyŏnggu was appointed as vice-director while Ri Sŭnggi was made the director.

Although Ri Sŭnggi took the spotlight and was extolled as the greatest scientist after the industrial production of vinalon, Ryŏ Kyŏnggu was elected as a representative of the third and fourth Supreme People's Assembly, which were held in 1962 and 1967, along with Ri Sŭnggi. It is clear that Ryŏ was a prominent scientist and held an important position in the development of North Korean science and technology. Interestingly, however, from the late 1960s, it becomes very hard to find Ryŏ's name in the North Korean media. For instance, in *Rodong Sinmun*, the organ of the Central Committee of Workers' Party of Korea as well as a daily newspaper, the news about the result of the Supreme People's Assembly representative on November 27, 1967 was the last report where Ryŏ's name was mentioned.³⁴ After that, there are no reports mentioning his

34 "Kim Ilsŏng tongji rŭl suban ũro hanŭn tanggwa chŏngbu chuwi e kutke mungch'in chosŏn inmin ũi widaehan sŭngni manse! Chŏnch'e sŏngŏjadŭl ũi 100% ka t'up'yo e ch'amga chŏnch'e sŏngŏjadŭl ũi 100% ka ch'ansŏngt'up'yo ch'oego inminhoeŭi taeŭiwŏnsŏn'gŏ sungnijŏk ũro chinhaeng," *Rodong Sinmun*, November 27, 1967, 1-2. Ryŏ's name appeared as the representative of the election district of Hamju.

name in the *Rodong Sinmun* until the report that introduced three scientist sons of Ryō on May 15, 1986.³⁵ The social context in which Ryō's name reemerged in the late 1980s will be discussed in the next section.

Ryō and Ri's research were highly interlinked in that the products of polyvinyl chloride and polyvinyl alcohol are both formed from carbide, which is made from anthracite and limestone that are abundant in North Korea. The process of making vinyl chloride is much simpler than the making of vinalon; to be specific, acetylene is created by reacting carbide with water, and reacting acetylene with hydrogen chloride produces vinyl chloride. Since the processes of making carbide and acetylene are shared in the manufacturing processes of PVC and PVA, the vinalon factory was built alongside the polyvinyl chloride factory, which had been completed earlier. In fact, the completion of the vinyl chloride factory was the first



The spinning shop within the February 8 Vinalon Factory area. Source: *Vinalon kongjang kōnsōl* (1961).

35 “3hyōngje chunbaksa – Ryō In’ung, Ryō Insūng, Ryō Ingwang tongmudūl,” *Rodong Sinmun*, May 15, 1986, 4.



[Left] Vinalon was produced for the first time on August 25, 1961, which was 111 days from the completion of the factory. In the picture, Ri Sŭnggi and workers are rejoicing at the sight of the first produced vinalon. Source: *Rodong Sinmun*, on August 27, 1961, 2. [Right] Workers producing vinalon fabrics for coats at the Shinŭiju Textile Mill, *Rodong Sinmun*, July 12, 1962, 1.

step towards constructing the vinalon factory.³⁶ This shows that the building of the vinalon factory, which comprises various but connected workshop buildings, was carried out step by step. Yet, as the sociopolitical interests spotlighted the vinalon factory, it was inevitable it would eventually overshadow the vinyl chloride factory (which is located next to the vinalon factory). The vinyl chloride factory and the initial February 8 Vinalon Factory were consolidated into the current February 8 Vinalon Complex (*2.8 pinallon ryŏnhap kiŏpso*) in 1974.

The Winner and Loser?

It is true that the manufacturing process of vinalon is much more complex than that of polyvinyl chloride; in that sense, it could be argued that Ri accomplished more than Ryŏ in terms of his technological breakthrough. Also, since polyvinyl chloride fiber was not considered a textile

36 Yim Kijae, “Vinalon kyobok e pulgŭn nekt’a’i rŭl hwinallil saehae rŭl ch’uk’ahamnida” [Congratulations on the new year when red neckties are flying in vinalon school uniforms], *Adong munhak* (January 1961), 7-8.

fiber in North Korea at the time, for North Korea there was no comparison with the accomplishment of PVC fiber and PVA fiber. In fact, the fibers which competed with vinalon in regard to the synthetic fiber to be industrialized first as textiles were nylon and acryl,³⁷ not polyvinyl chloride. Although PVC fiber was used in making raincoats and swimsuits, its initial major production use was for daily necessities, not for everyday wear. Yet, considering that polyvinyl chloride fiber could have been developed as textiles and eventually developed in that way during the 1980s, such interpretations are not enough to explain the context in which Ri Sŭnggi was praised as a heroic scientist and why vinalon monopolized media attention. The fundamental reason that North Korea brought vinalon to the forefront was that for the North, vinalon was a much greater example of what a scientist of a former colony was capable of achieving in the liberated fatherland. In particular, vinalon's attractiveness was based on the fact that Ri Sŭnggi was the inventor of the fiber by which North Korea claimed.

According to Edgerton's definition, invention is "the creation of a new idea" and innovation is "the first use of a new idea."³⁸ These two are core components of techno-nationalism.³⁹ Although Ryŏ contributed to the creation of a manufacturing system suited for domestic circumstances in

37 Ri Sŭnggi, *Kwahakcha ūi sugi*, 125. In terms of this, refer to Kim Taeho, "Ri Sŭnggi ūi pukhan esŏui 'vinalon' yŏn'gu wa kong'ŏp'wa," 127; Eunsung Cho, "The Thread of Juche," 66. In his book *Hwahaksŏmyu iyagi*, Ri Sŭnggi introduced potential synthetic fibers, such as polyamide, polyester, polyacrylonitrile, and polyvinyl alcohol; however, PVC was not on the list. Ri Sŭnggi, *Hwahaksŏmyu iyagi* (Pyongyang: Kungnip Ch'ulp'ansa, 1957).

38 David Edgerton, *The Shock of the Old: Technology and Global History since 1900* (London: Profile Books, 2006), ix.

39 Mahatma Gandhi's promotion of homespun textiles by using *Charkha* (spinning wheel) is a good example. The *Charkha* was "re-introduced into India in the twentieth century as a result of a campaign led by Gandhi to promote production by the masses," and became a great symbol of Indian nationalism. David Edgerton, *The Shock of the Old: Technology and Global History since 1900*, 107.

North Korea, polyvinyl chloride was already a commonly used industrial chemical worldwide at the time. In contrast, Ri was the inventor of a fiber of polyvinyl alcohol for textile products, and the industrial production of the polyvinyl alcohol fiber succeeded only in Japan and North Korea in 1961. Thus, vinalon had more attractive selling points in the political narrative than vinyl chloride even though North Korea was not the first country that industrialized polyvinyl alcohol fiber.

According to North Korea's records, Ryŏ Kyŏnggu died in April 1977. His death was not reported in any press at the time, although he currently lies buried at the Patriotic Martyrs' Cemetery.⁴⁰ This is in sharp contrast to the case of press reports when other famous scientists died. For instance, when the chemist Ma Hyŏng'ok who led the industrial production of reed fiber during the 1960s died on April 28, 1993, the *Rodong Sinmun* reported this news on the front page with Kim Ilsŏng and Kim Chŏngil having sent wreaths to the deceased comrade Ma Hyŏng'ok.⁴¹

When it comes to the death of Ryŏ Kyŏnggu, a South Korean historian of science, Pak Sŏngrae claims that Ryŏ Kyŏnggu committed suicide;⁴² however, the source of his claim is unknown. The Federation of American Scientists (FAS)⁴³ also claims that Ryŏ committed suicide. On its website posting about Ryŏ Kyŏnggu, the FAS claims that Dr. Ryŏ Kyŏnggu pro-

40 The Patriotic Martyrs' Cemetery, which is located in Sinmi-li in Pyongyang, was founded in 1986 at 33 square meters. In North Korea, the Patriotic Martyrs' Cemetery is placed on a lower level than the Revolutionary Martyrs' Cemetery where the people who took part in anti-Japanese struggles are buried.

41 *Rodong Sinmun*, May 1, 1993, 1. In regard to Ma Hyŏng'ok, refer to Eunsung Cho, "Pidansŏm ūi kaltaebat: Pukhan ūi kalsŏmyu gong'ŏp yŏn'gu [The field of reeds on silk island: A study on North Korea's reed fiber industry]," *Taegu sahak* 142 (Feb. 2021).

42 Pak Sŏngrae, "Ri Sŏnggi ūi sŏnggong, Ryŏ Kyŏnggu ūi chasal, wŏlbuk kwahakchadŭl ūi myŏng'am [Ri Sŏnggi's success and Ryŏ Kyŏnggu's suicide, light and shade of the scientists going to the North]," *Chu'gan Tong'a* 476, March 15, 2005, 65.

43 The Federation of American Scientists (FAS) was founded in November 1945 by Manhattan Project scientists who built the first atomic bombs; the initial name of this organization was the Federation of Atomic Scientists.

tested against the prospect of vinalon.⁴⁴ According to this posting, Ryŏ contended that the vinalon industry would not guarantee a future for light industry and so a nylon factory instead should be constructed; owing to this, Ryŏ was later subjected to ideological struggle by the Kim Ilsŏng group and finally killed himself in 1977.⁴⁵ Since this website does not present any proof, we do not know whether Ryŏ really opposed the vinalon factory or not, and whether he committed suicide or not. North Korean sources report that Ryŏ died of an incurable illness. Whether or not it is true that Ryŏ was not in favor of vinalon at the outset, it was clear that as North Korea gave political meaning to vinalon and Ri received the spotlight as a national hero, whereas Ryŏ's presence waned and his name eventually disappeared from North Korea publications, resulting even in the absence of an obituary.

In regard to Ryŏ's sudden disappearance from the public domain, one hypothesis is that he was demoted to the provinces when the people from the South were relegated to less important posts in the provinces during the process of developing the succession system in the mid-1970s.⁴⁶ In the early 1980s, a considerable number of people from the South returned to Pyongyang after Kim Ilsŏng noticed that Ryŏ Unhyŏng's son and daughters were dispatched to the provinces. Ryŏ Unhyŏng's adult chil-

44 "Vinalon, the North's Proud Invention," Federation of American Scientists, accessed January 10, 2019, <https://fas.org/nuke/guide/dprk/facility/industry38.htm>

45 Ibid.

46 For example, in the 1970s, there was an evacuation operation in Pyongyang led by Chang Sŏngt'aek who was the husband of Kim Chŏngil's younger sister. At the time, North Korea categorized people according to their social component or *sŏngbun* (成分) stemming from family background or social class, which is divided into three strata: core (核心) stratum, agitation (動搖) stratum, and hostile (敵對) stratum. The evacuation operation led by Chang was seen as an attempt to make Pyongyang a city of the core stratum. A lot of the people from the South, such as the first Minister of Health Lee Pyŏngnam, were evacuated from Pyongyang. In this manner, Ryŏ might have been swept away to the localities of less importance at this time.

dren and their sons and daughters returned to Pyongyang around this time, and their pictures were published in the North Korean media.⁴⁷ According to North Korean press reports, Kim Ilŏng met Ryŏ Unhyŏng's adult children in 1991 again and asked them how the grown-up children of Ryŏ Kyŏnggu were.⁴⁸ Yet, it is hard to know the exact reason why Ryŏ was erased from North Korean official publications from the late 1960s to the mid-1980s.

In fact, Ryŏ Kyŏnggu's name, which was difficult to find from the late 60s onwards, reappeared along with the greater emphasis on the discourse of *Juche* science, due to the reinforcement of the *Juche* idea in the mid to late 1980s. Ideology is often called into play by a state in a time of crisis. In North Korea, the reemphasis on *Juche* science was an ideological response to the crisis within the socialist bloc at the time. As we know, protests to resist the USSR were taking place in the Eastern Bloc countries from the late 1980s and the Berlin Wall fell in 1989, which led to the official dissolution of the Soviet Union in 1991. *Juche* ideology became strengthened and rigid in 1986 with the addition of the theory of the socio-political organism (*sahoejŏngch 'ijŏk saengmyŏngch 'e ron*). This theory argued for oneness of the body and soul of the Supreme leader (*suryŏng*), Party, and the People and thereby demanded loyalty to the Party and supreme leader from the people.⁴⁹ By emphasizing one's eternal

47 Ryŏ Yŏn'gu, *Na ūi abŏji Ryŏ Unhyŏng*, ed. Sin Chun'yŏng (Seoul: Kim'yŏngsa, 2001), 284.

48 Kim Chŏngju, "Minjok ūi kwahakcha rŭl akkigo naesewŏ chusiŏ," *T'ongil Sinbo*, September 23, 2006.

49 According to this theory, people's political life is given by the supreme leader and nurtured by the party, although their physical life is given by their parents. As Sonia Ryang stated, "in a society like North Korea, the body is always socially appropriated and never individually owned, yet, at the same time, the individual is held responsible for its maintenance improvement, and transformation. This is the logic that sustains the socialization of the body in North Korea." Sonia Ryang, "Biopolitics or the Logic of Sovereign Love - Love's Whereabouts in North Korea," Sonia Ryang ed., *North Korea: Toward a Better Understanding* (New York:

socio-political life, unlike one's finite physical life, this theory was designed to play a role in reinforcing social integration, which was North Korea's response to the critical situation of the socialist bloc in the late 1980s. The creation of the Patriotic Martyrs' Cemetery in 1986 should also be understood in this context.

On May 15, 1986, a *Rodong Sinmun* article mentioning Ryö reappeared in the report that shed light on his three sons who were contributing to the field of science.⁵⁰ According to this report, Ryö's first son In'ung and second son Insüŋ⁵¹ graduated from Hamhüŋ College of Industry and both were working at the Hamhüŋ branch of the Academy of Sciences, while Ryö's third son Ingwang graduated from Kim Ilsöŋ University and was working at the Institute of Physics of the Academy of Sciences as deputy director. The article introduced that these three brothers were born into the family of a scientist, adding that their father was Professor Ryö Kyöŋŋu who contributed to the inaugural development of the vinyl chloride industry in North Korea. Although Ryö Kyöŋŋu's name appeared in tandem with his sons' services to science, there is again no mention of him until 1992 in the *Rodong Sinmun*.

Another important context that should be noted in terms of the reevaluation of Ryö is that the workshop of polyvinyl chloride fiber, which was named *Mobiron*, was completed within the Vinalon Complex in 1981 and began to produce cotton for blankets. In the book *Polli yömhwa pinil che-jo* that Ryö wrote in June 1959 and published in 1960, he suggests the development prospects of polyvinyl chloride fiber; one of them was that the synthetic fiber produced from polyvinyl chloride could be used for

Lexington Books, 2009), 76.

50 "3hyöŋŋe chunbaksa – Ryö In'ung, Ryö Insüŋ, Ryö Ingwang tongmudül," *Rodong Sinmun*, May 15, 1986, 4.

51 Ryö Insüŋ, in particular, was described that he played a role in solving some technical problems in the development of vinalon industry. "3hyöŋŋe chunbaksa – Ryö In'ung, Ryö Insüŋ, Ryö Ingwang tongmudül," *Rodong Sinmun*, May 15, 1986, 4.

making overcoats and cotton batting since the fiber was thermal.⁵² Such prospects, however, were realized much later.

When the Mobiron Factory was constructed in the city of Hamhŭng on October 10, 1981, North Korea propagated that mobiron was a new chemical fiber and the mobiron factory was completed with North Korea's own technology, equipment, and resources per the usual.⁵³ Before the construction of the mobiron factory, the new name *mobiron* was given to the synthetic fiber produced from polyvinyl chloride. In the *Rodong Sinmun*, the word mobiron appeared for the first time on June 6, 1979.⁵⁴ The story that Kim Ilsŏng named the fiber mobiron in the sense that this fiber can substitute wool (*mo* in Korean) and cotton (*som*) was added later.⁵⁵

According to North Korea's explanation, in July 1980 Kim Ilsŏng received a report that the scientists at the Hamhŭng branch under the Academy of Sciences obtained promising results from the research project on vinyl chloride fiber and were operating a pilot plant.⁵⁶ The scientist who led this project was Dr. Ryŏm Sŏnggŭn who decided to go to the North from Japan in 1961.⁵⁷ Ryŏm Sŏnggŭn was born in Seoul in 1923, was trained as a chemist at Kyoto University, and worked at the laboratory of the February 8 Vinalon Complex, belonging to the Hamhŭng branch of the Academy of Sciences. After the mobiron factory was completed and

52 Ryŏ Kyŏnggu, *Polli yŏmhwa pinil chejo*, 108.

53 "Widaehan suryŏng Kim Ilsŏng tongjikkesŏ mobiron kongjang kŏnsŏlchadŭl ege ch'ukhamun ŭl ponasiyŏtt," *Rodong Sinmun*, October 11, 1981, 4; Chu Hanryul, "T'ŏpshi malkko kkekkuthan ch'ungsŏngsim ŭl an'go – sumŭn yŏng'ungdŭl ŭi mobŏm ŭl chŏkkuk ttarabaeugo yitnŭn kwahakwŏn hamhŭngbunwŏn kwahakchadŭl," *Rodong Sinmun*, December 14, 1981, 4.

54 "Widaehan suryŏng Kim Ilsŏng tongjikkesŏ Hamkyongnamdo anui inmingyongje yoro pumun saop ul hyonji eso chidohasiyotta," *Rodong Sinmun*, June 6, 1979, 1-2.

55 Kim Ch'anho, "Choŭn kŏsŭl yŏnguhayŏttago kippŏhasimyŏ," *Rodong Sinmun*, December 4, 1986, 2.

56 Ri Gŭn, "Inmin ŭi ch'ungbok ũro ilkundŭl ŭl k'iusimyŏ," *Rodong Sinmun*, June 29, 1983, 2.

57 Ryŏm Sŏnggŭn, "Chŏguk ũn nae hŭimang ŭl kkotp'iwŏjun kot," *Chosŏn Sinbo*, November 26, 1984.



Workers in the workshop of mobiron under the February 8 Vinalon Complex. *Rodong Sinmun*, March 20, 1983, 1.

began producing mobiron cotton that was used for quality blankets, Dr. Ryöm received the title of Merited Scientist for his contribution to the development of the vinyl chloride industry.⁵⁸ Since then, mobiron has been placed next to vinalon whenever North Korea displays its proud chemical fibers. Yet, North Korea does not celebrate mobiron as much as it extols vinalon. Accordingly, it is presumed that there was a need to reevaluate Ryö's contribution to the initial development of the vinyl chloride industry.

As the Patriotic Martyrs' Cemetery was completed in 1986, North Korea moved the graves of some patriots that were scattered throughout the

58 Ryöm Sönggün, "Chöguk ün nae hüimang ül kkotp'iwöjun kot," *Chosön Sinbo*, November 26, 1984.; Ryöm's contribution to mobiron was mentioned in the *Rodong Sinmun* too. Che Hanryul, "T'ïöpshi malkko kkekuthan ch'ungsöngsim ül an'go – sumün yöng'ungdül üi moböm ül chökkuk ttarabaeugo yitnün kwahakwön hamhüngbunwön kwahakhadül," *Rodong Sinmun*, December 14, 1981, 4.



Gravestones of Ryō Kyōnggu (left) and Ri Sūnggi (right) in the Patriotic Martyr's Cemetery in Pyongyang. © Chōng Ch'anghyōn

country. Ryō Kyōnggu was laid in this cemetery as one of the figures who greatly contributed to the development of North Korean science and technology. However, it is uncertain whether North Korea laid Ryō in state when the Cemetery opened, because initially only 190 bodies of the deceased were laid to rest.⁵⁹ Ri Sūnggi was also laid in state here when he died in 1996. The rehabilitation of Ryō took place in earnest after Kim Chōngil visited the Hamhŭng branch of the Academy of Sciences, where Ryō had worked, in 1999 and praised Ryō's research accomplishments highly.⁶⁰ As of 2002, 14 percent of those who were laid in the deceased patriots' cemetery were associated with the realm of science and technology; this indicates that scientists have been highly rated as national heroes in North Korean society.⁶¹ Currently, in North Korea media Ryō

59 "Ch'oe Chaeyōng moksa pangbukki 17," *T'ong'il News*, March 9, 2015.

60 Ibid.

61 Kim Taeho, "Tarūn killo tūrōsōn nambukhan kwahak kisu [North and South Ko-

Kyönggu's name ranks third among the scientists who greatly contributed to the development of *Juche* science,⁶² preceded only by Kang Yöngch'ang⁶³ and Ri Sünggi. However, it is still difficult to find specific documents about Ryö Kyönggu compared to other scientists. Even in the book entitled "The Scientists of Contemporary Chosön" edited by a Professor of Chosön University in Japan,⁶⁴ there were only two sentences about Ryö Kyönggu.⁶⁵ In a similar vein, North Korea has never issued a memorial postage stamp featuring Ryö Kyönggu while various stamps featuring Ri Sünggi have been issued.⁶⁶ This again shows the special position of Ri, who is celebrated alongside vinalon.

Conclusion

This paper investigated the rise and fall of the two chemical engineers Ri Sünggi and Ryö Kyönggu in North Korean society, focusing on the way in which North Korea's socio-political goals and interests affected their path in life, research products, and particularly the social evaluation

rea's scientific technology that went another way],” *Kūnhyöndae kwahak kisul kwasalm üi pyönhwa* [Contemporary scientific technology and changes in life] (Kwach'ön: Kuksa p'yöngch'an wiwönhoe, 2005), 156.

62 Ryo Myöngghüi, “Widaehan t'aeyang üi ryöksa, pulmyöl üi öpchök – öböi suryönnim maryönhayöjusin juche kwahak palchön üi mannyön t'odae,” *Rodong Sinmun*, March 27, 2007.

63 He was appointed as the President of the Academy of Sciences in March 1961, and served as the Minister of the Metal Industry of the Party. Kang Hoje, “Nambukhan kwahakkisulsa,” in *Nambuk kwan'gyesa* (Seoul: Ehwa Womans University Press, 2009), 291.

64 Chosön University is operated by *Chongryön* (chaeilpon chosönin chongryönhaphoi, the General Association of Korean Residents in Japan).

65 Im Chöngghyök ed., *Hyöndae Chosön üi Kwahakchadül* (Seoul: Kyoyuk Kwahaksa, 2003), 50; this book was originally published in Japanese in 1997.

66 As for the scientists on the stamps of North Korea, there are only two: Ri Sünggi and Kye Ŭngsang.

of their research and the men themselves. As for the reasons why Ri Sŭnggi received greater veneration than Ryŏ beginning around the late 1950s, this article highlights the fact that Ri Sŭnggi was an inventor of vinalon. It is true that vinalon was a great example to showcase that North Korea, a former colony, was very successful in catching up with the advanced industrial nations at the time. More importantly, however, the fact that Ri was an inventor of vinalon and North Korea succeeded in the industrial production of vinalon first among the socialist bloc countries functioned as important factors with regard to constructing a technonationalistic narrative in North Korea. Furthermore, Ri's life story was more dramatic than Ryŏ and thus offered a richer story capable of attracting popular attention.

What this research focused on was the social description of scientists rather than the synthetic fibers themselves. Thus, I did not cover the technical specifications for PVC and PVA fibers in this paper. For further research, going beyond the discussion of the relationship between politics, research projects, and scientists within North Korea, it would be a fascinating project to expand the scope and explore how the social descriptions of scientists were constructed in relation to the dimensions of inter-Korean competition and the global Cold War.

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<Abstract>

When the Political Spotlight is On: Social Evaluations of Ri Sŭnggi and Ryŏ Kyŏnggu, Two Chemical Engineers in North Korea

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Dr. Ri Sŭnggi is celebrated alongside vinalon (also known as vinylon) in North Korea. As a synthetic fiber produced from polyvinyl alcohol, vinalon was invented by the research team to which Ri Sŭnggi belonged in 1939, and industrial production began in North Korea in 1961. Yet, until 1958, it was another chemist by the name of Ryŏ Kyŏnggu whose project on polyvinyl chloride was deemed to have the potential for further rapid advancement and thus received more media attention than Ri's research on polyvinyl alcohol fiber. Once the polyvinyl alcohol fiber was dubbed vinalon and its industrial production was accelerated, however, the social evaluation of the two chemists' research and even of the chemists themselves changed. This paper addresses North Korea's two famous chemical engineers, Ri Sŭnggi and Ryŏ Kyŏnggu, paying attention to how the sociopolitical context of technology in North Korea conditioned the evaluation of these two chemists in accordance with vinalon's symbolic importance. This research will demonstrate that North Korea's evaluation of scientists was contingent upon its shifting socio-political interests.

Keywords: North Korea, Ri Sŭnggi, Ryŏ Kyŏnggu, experimental project, techno-nationalism

〈국문초록〉

정치적 스포트라이트가 켜질 때: 북한의 두 화학공학자 리승기와 려경구에 대한 사회적 평가 연구

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리승기 박사는 북한에서 비날론과 함께 기념되는 인물이다. 폴리비닐알콜계 합성섬유 비날론은 1939년 리승기가 소속돼 있던 교토제대 연구팀에 의해 발명되었고 1961년 북한에서 공업화되었다. 그런데 1958년까지는 또다른 주목받던 화학자 려경구가 있었다. 려경구의 폴리염화비닐섬유 연구는 빠른 발전 가능성이 있는 것으로 여겨졌고 한때는 그의 연구가 리승기의 폴리비닐알콜섬유 연구보다 언론의 관심을 더 받았다. 그러나 폴리비닐알콜섬유에 비날론이라는 이름이 붙고 공업생산이 시작되면서 리승기와 려경구 이들의 연구와 화학자로서의 사회적평가는 차이를 보이게 되었다. 이 논문은 비날론의 상징적 중요성과 같은 북한에서의 기술의 사회정치적 맥락이 리승기와 려경구라는 두 유명 화학공학자에 대한 평가에 어떤 영향을 미치게 됐는지를 다룬다. 이를 통해 본 연구는 과학자들에 대한 북한의 평가가 변화하는 사회정치적 관심에 따라 달라졌다는 것을 보여줄 것이다.

주제어: 북한, 리승기, 려경구, 실험 프로젝트, 기술-민족주의

