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At one end, raw, telluric matter, at the other, the finished, human object; and between these two extremes, nothing; nothing but a transit, hardly watched over by an attendant in a cloth cap, half-god, half-robot.

—Roland Barthes, on plastic

Introduction

On the night of April 1, 1961, a spring snowstorm blew into Hamhung. All outdoor construction was ordered to be halted, but the workers of Ri Huisang’s construction team could not stop now, not when they had only five more meters to go to complete a forty-meter-tall smokestack. The smokestack would be a vital part of the new Vinalon Factory, functioning in funneling away the toxic gas produced when making the compound polyvinyl alcohol, the fiber form of which is vinalon (pinallon). The ten-person
A construction team, calling themselves the Phoenix Shock Troop (Pulsajo Tolgyŏkdae), had been working furiously for two weeks, and with only five meters left, they were not about to stop because of a snowstorm (297). Earlier that day, Kim Il Sung (Kim Ilso’ng) had visited the factory, for the second time since construction began in early June the previous year. After having watched, from the unfinished smokestack, Kim Il Sung touring the factory grounds, the Ri Hŭisang’s team resolved to “not come down until a red flag is flying from the top.” The night was so cold that their clothing froze and lightbulbs burst, and it was so windy that molding plates blew away (Chunggongŏp Wiwŏnhoe, 300). But concrete continued to flow, and when the sun arose the next day, as they had vowed, a red flag flew from the top. The forty-meter smokestack was built by hand in thirteen days.

The Vinalon Factory was where the revolutionary elements of North Korea’s state-led socialism came together to produce extraordinary results, the construction being completed in just fourteen months. As the five-year plan wound down (1957–60, finishing a year ahead of schedule), as the state nationalized all industries and farmland (by October 1958), and as the Ch’ŏllima Work Team Movement to increase production swept across the land (beginning in March 1959), the Vinalon Factory came to symbolize the new dawn of socialist economic progress determined largely by industrialization. The completion of the factory was part of the birth of an industrial narrative in postwar North Korea that forged a unity between socialist revolution, national independence, and productivity in factory work.

The most extraordinary element was vinalon itself: vinalon as a purely Korean product and produced in a factory built from the toils of Korean workers. Vinalon was the name given in North Korea to the synthetic fiber spun from the common chemical compound polyvinyl alcohol (PVA). The first successful production of vinalon was carried out by a research team at Japan’s Kyoto (then Imperial) University in 1939, as the Japanese empire waged war in China. A principal member of this team was a Korean chemist named Ri Sŭnggi. In 1950, as the Korean War broke out, he was recruited by North Korea, where he became a national hero as the inventor of vinalon. The factory, in Hamhŭng City of South Hamgyŏng Province, too, has colonial origins. Built in 1936, it was a fertilizer factory of Nihon Chisso, the largest Japanese chemical company and one of the largest inves-
tors and builders in colonial Korea. Furthermore, Hamhŭng was the location of post–Korean War reconstruction efforts led by East Germany.

The history of vinalon is thus a confluence of at least five historical trajectories. The first is the colonial industrial system driven by market-imperial motives of profit and resources from the colonies. The second is the merger of science and technology with Japan’s imperial discourse and practice, as Hiromi Mizuno writes, unified and controlled research programs toward a new order of “science-technology” in the empire. The third is the post-liberation nationalist ideology of state building, in which the recruitment of scientists and engineers, especially from South Korea, became an important mission of the young socialist state. The fourth is the dynamics of multinational postwar reconstruction that saw the socialist states of Eastern Europe and China leading and assisting the infrastructural recovery of major cities of North Korea. And the fifth is the monopoly of production and politics by the regime of Kim Il Sung that eliminated competing groups and erased the truly international history of North Korea’s beginnings. Vinalon City, as the immense factory was called, was a transnational object par excellence, but at the same time, it was immutably localized for ordinary North Korean people, replete with its work heroes who achieved superhuman levels of productivity.

While each trajectory is addressed, this essay is primarily about the history of the factory’s construction and the function of vinalon in relation to the everyday reality of postwar North Korea. Everyday life in this relationship is the concept and space in which practice and ideology meet. The ideological force of vinalon is sustained in everyday life as a concrete object—produced by the workers and worn by the public. Workers like Ri Hŭisang and his team, who built the factory and labored within it, emerge in everyday life as dialectical beings who, through their extraordinary acts, anticipate the negation of the planned system from which they are born. The work hero and vinalon are essentially indeterminate in their function. The very moment when the extraordinary worker represents the ideal socialist being is also the moment of breakdown of the central plan that must depend on the spontaneous acts of individual workers. Similarly, vinalon is both the object of labor and its cause, supporting the ideology of work whose aim is not so much the satisfaction of need but the reproduction of work itself. The
ambiguity of their function is precisely what Michael Burawoy sees as the ideological effect of the industrial labor process that generates the “complicity of workers in their own subordination.” Ambiguity is thus not only an abstract characteristic but a concrete practice embedded in everyday life that upholds a certain ideological activity—in this case, industrial work.

Turning labor power and its products into ideological means for the very regeneration of labor power, the only real source of surplus, was, of course, a worldwide phenomenon highlighted by industrialism in its global scale since the nineteenth century. What were analogous to the Vinalon Factory existed throughout the world—from Soviet Union’s Magnitogorsk and China’s Anshan to the United States’ Gary and South Korea’s Pohang—all symbolizing the industrial might of their times. North Korea’s attempt at controlling work was, then, part of the code of industrialism that overwhelmed the entire modern world. Regardless of how surplus was appropriated (by the state in existing socialist countries and by private domains in existing capitalist countries), the principle method of producing surplus was the same. Industrial work was the universal ground in which North Korea’s particular style of socialist work exerted its hegemonic force. The critique of industrialism is thus how the particular analysis of vinalon is brought into the general critique of modernity. As such, in this essay, critique is aimed at both the particular historical condition of postwar North Korea, from which much of its current despotic qualities are born, and the universal condition of industrialism that has ordered a great deal of the modern everyday life.

Colonial Beginnings

The origin of the chemical industry in Korea as well as that of the Vinalon Factory is tied to one person: Noguchi Jun (1873–1944), the Japanese engineer-turned-entrepreneur who, in 1908, founded Nihon Chisso Hiryō Kabushiki Kaisha (Japan Nitrogenous Fertilizer Company) in Minamata, Japan’s Kyushu region. By the mid-1920s, Nihon Chisso was a dominant chemical company in Japan possessing a large amount of capital accumulated from selling fertilizer as well as stock shares. With capital in hand, Noguchi sought expansion into Korea after recognizing a real demand for
his product and after a policy change had made investment in the colony easier. First, following the Rice Riots of 1918, rapid agricultural development took place in colonial Korea to produce low-priced rice for Japan, creating a high demand for chemical fertilizer. Second, the abolishment of the Corporation Law in 1920 lifted many business regulations and made investment in Korea proper easier. In addition, there were the reasons of cheap labor, lower taxes, less competition, and availability of resources (and their intensive use)—all made possible by the colonial system.

In 1927, Noguchi established Chōsen Chisso Hiryō Kabushiki Kaisha (Korea Nitrogenous Fertilizer Company). Chōsen Chisso was the largest and most-invested business enterprise in colonial Korea, with over twenty subsidiary companies in diverse industries, including not only chemical but also power, steel, mining, and food processing. (Nihon Chisso acquired Chōsen Chisso in 1941 owing to financial reasons; this study treats the two as the same company.) One subsidiary of Nihon Chisso was a soybean processing factory located at the town of Pon’gung. In June 1936, the Pon’gung soybean factory was reborn as a chemical fertilizer factory, which would become in 1961 the Vinalon Factory. The Pon’gung Chemical Fertilizer Factory grew to be one of the largest factories in colonial Korea: by 1943, it had sixty-eight hundred employees and produced 30 percent of the fertilizer ingredient carbide consumed in the empire. What happened to the Pon’gung Factory when the Japanese empire dissolved? (One person who never got to find out was Noguchi, who died in February 1944.) With liberation on August 15, 1945, and with another foreign occupation of the peninsula by the end of September—this time the Soviet Union in the northern half and the United States in the southern half—North Korea inherited a colonial industrial system made up of over a thousand enterprises. The recovery and operation of these enterprises became a priority of the Soviets as well as the nascent government of North Korea made up of numerous people’s committees. The resumption of operation began immediately, with Korean, Soviet, and Japanese workers, technicians, and administrators working together. But it was an uneven process. According to one Soviet source, in September 1946, only 16 percent of the iron and steel industry and 21 percent of the mining industry were in operation, while the chemical industry was at 83 percent.
As part of the Hŭngnam Area People’s Factory, the Pon’gung Factory resumed operation at the end of August 1945. In its first few years, the production level of the entire Hŭngnam area remained at about half the level during the colonial period: in the summer of 1947, it produced seven hundred tons of ammonium sulfate a day (fifteen hundred tons in 1944) and three hundred tons of carbide a day (five hundred tons in 1944). The Pon’gung Factory suffered from lack of expertise and shortage of raw materials, but it retained its equipment and capacity as it became part of the postcolonial socialist world. Removed from the expansive industrial network of the empire, where input and output were determined by global market forces as well as a costly war, the factory found a new role determined by a different set of forces, one of which was the central plan, another, the ideological force of national independence.

**Reconstruction of the Hamhŭng Plains**

Vinalon City was built (and rebuilt) as part of the development of the entire Sŏngh’ŏn River Delta—more broadly known as the Hamhŭng Plains—into the center of North Korea’s chemical industry. The Hamhŭng Plains occupy the southeastern region of Hamgyŏng, which in 1896 split into north and south provinces. During the Chosŏn period (1392–1910), Hamgyŏng was considered as a kind of frontier, a rebellious place far from the administrative, economic, and cultural influence of the capital at Hanyang (modern-day central Seoul). At the same time, Hamgyŏng held a sense of mystique as the birthplace of Yi Sŏnggye (1335–1408), the founder of the Chosŏn Dynasty who was born in the town of Yŏnghŭng. After founding the new dynasty, Yi Sŏnggye built a palace with a shrine for his ancestors just south of Hamhŭng on the eastern bank of Sŏngh’ŏn River. In 1398, the aging Yi Sŏnggye, distraught by his sons’ bloody fight for the throne, briefly retired there to a life of Buddhism. Since the palace was occupied by the dynasty’s founder himself, it was called pon’gung, meaning “main palace.” The name eventually came to denote the area.

The next phase of modern development of the Hamhŭng Plains was the period of reconstruction after the Korean War (1950–53). As one of five original industrial targets of the US-led Strategic Air Command (along
with Wŏnsan, P’yŏngyang, Ch’ŏngjin, and Rajin), Hamhŭng’s Hŭngnam District was hit with both incendiary and demolition bombs from the beginning of the war. From a report by the then Industry Minister Chŏng Ilryong, we know that most factories critical for export-oriented products, including the Pon’gung Chemical Factory, stopped their operation by the end of 1950.\textsuperscript{14} The overall output of North Korea’s chemical industry for 1953—the war ended in July—was 22 percent of the prewar level; South Hamgyŏng fared slightly better than the national average, at 36 percent of 1949.\textsuperscript{15}

The reconstruction of Hamhŭng City officially began in 1954 with Cabinet Decision Number 42, which also included the cities Ch’ŏngjin, Wŏnsan, Sariwŏn, Kanggye, and Namp’o—all important industrial cities heavily damaged during the war.\textsuperscript{16} The basic city plan approved by the cabinet had the following items: the balance of educational, cultural, and welfare facilities; living space of six to nine square meters per person; green space of seven to twelve square meters per person; and the erection of administrative buildings, a plaza, a park, and a sports stadium in the center.\textsuperscript{17} In cities like Hamhŭng, the plan resulted in the construction of a large plaza near a train station with main roads radiating from it. On the main roads were usually multistoried administrative buildings and apartment complexes. Housing, an urgent problem in the postwar period, was based on the standardization of design, materials, and construction.\textsuperscript{18} Prefabricated housing thus became the typical housing style, whether as apartments in urban centers or tract houses in the countryside.

A vital part of urban and industrial reconstruction was the assistance of other socialist countries. Toward the end of the war, the Workers’ Party recognized the urgency of foreign assistance and passed a plan to accept a vast amount of material aid from “brotherly” states.\textsuperscript{19} Hungary took part in the reconstruction of P’yŏngyang. Poland played an important role in planning the merger of Ch’ŏngjin and Ranam into a larger Ch’ŏngjin City, where Romania built a pharmaceutical factory and Czechoslovakia built a hospital.\textsuperscript{20} Sinŭiju, in the northwest, is where the Chinese military helped to build around 100,000 houses before withdrawing from North Korea in 1958; the provincial hospital of Sinŭiju was built by Bulgaria.\textsuperscript{21}

The feel-good story about East Germany’s assistance in the reconstruc-
tion of Hamhûng involves Kim Il Sung’s thankful letter, on July 6, 1954, to the East German prime minister Otto Grotewohl on the selection of Hamhûng in response to Grotewohl’s willingness to help rebuild a city of North Korea’s choosing. Another story, more in tune with the socialist hierarchy of the time, is that East Germany’s assistance was part of its World War II reparation to the Soviet Union, forced by Stalin. Along with the factories and railways that were disassembled and sent to the Soviet Union, East Germany was ordered by Moscow to participate in North Korea’s post-war reconstruction. East Germany’s involvement lasted until 1962, and through four agreements, East Germany’s assistance entailed constructing the urban infrastructure of Hamhûng as well as setting up of a diesel engine factory, printing factory, textile factory, and steel factory.

An investigation team from East Germany arrived at the end of 1954, and actual planning and construction began in mid-1955 under the agency Baustab Korea (Construction Staff of Korea). Baustab Korea comprised numerous teams, including road construction, waterworks, bridge construction, drainage and irrigation, and public works. The first joint effort between North Korea and East Germany led to the erection, in 1955, of four hundred housing units arranged in four-storied apartment complexes in the city center. By the end of 1958, this site was expanded and providing housing for 100,000 residents of Hamhûng. Just outside the city, in 1957, an entire community rose up from 170,000 square meters of previously rural land, complete with a school, daycare center, and cultural facilities. The most symbolic structure of this international joint effort was Wilhelm Pieck Avenue, the wide street that runs through the center of Hamhûng, named after the first president of East Germany (fig. 1). As for industrial sites, East Germany helped to bring in new equipment at practically all the factories in the area, including the Pon’gung Factory. Education and training were also part of the assistance. In 1956, there were 938 different lectures for 17,750 North Korean workers, with topics ranging from agriculture and construction to chemistry and physics.

East Germany’s involvement in North Korea’s postwar reconstruction propelled the Hamhûng area within the decade into the center of North Korea’s chemical industry, whose size and capacity were among the largest in the world. The migration of workers and their families to Hamhûng
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Figure 1 Hamhŭng’s Wilhelm Pieck Avenue of today. Photo taken by the author on May 18, 2014

turned the area into the second largest city in North Korea, and in the 1960s its administrative districts came to encompass the entire Sŏngch’ŏn River Delta. With the technology gained from the reconstruction experience, urban development continued at a rapid pace in Hamhŭng after the East Germans left in 1962. With further development, however, the memory of modern Hamŭng’s international past gradually disappeared from its urban surface. Wilhelm Pieck Avenue, the symbol of North Korea’s joint effort with East Germany, now goes by the name Chŏngsŏng Avenue.31

Ri Sŭnggi and the Making and Use of Vinalon

Since the early 1970s, vinalon fiber has been called in North Korea the “cotton of self-reliance” (chuch’ě ūi som) because, as Ri Sŭnggi explains, it was “miraculously created in a short amount of time, with our own strength, with our own technology, and with our resources.”32 Vinalon made up more
than half of all fibers (natural or synthetic) produced in North Korea, and at least until the mid-1980s, North Korea was one of the largest producers of the fiber in the world.

The postwar North Korean economy was rife with shortages, of which fabric was a particular problem, enough so that Kim Il Sung said to the politburo of East Germany’s Socialist Unity Party, on June 8, 1956, “When it comes to relieving people’s hardship, what is lacking more than anything is textile goods.” One important reason for this shortage was that North Korea at the time could not spare large tracts of flat, arable land other than to grow food. It was calculated that at the end of 1950s, North Korea had 5 million acres of arable land, and it would take 10 percent of arable land to produce enough fabric for its 10 million people, which was at least 150 million meters of fabric annually (Chunggongŏp Wiwŏnhoe, 2–3). The same amount of fabric could be produced from twenty thousand tons of vinalon, a realistic production output for a single factory.

The birth of vinalon, however, occurred in a situation of a different kind of need, in altogether a different time: the wartime need of imperial Japan as the empire prepared for war with China. This birth was part of the empire’s tremendous push for, as Mizuno explains, a “‘scientific’ Japan . . . that would efficiently develop technology necessary to win the war and to maintain the empire.” In North Korea, the person who has come to be linked to vinalon more than any other is Ri Sŭnggi, a chemist whose career began in imperial Japan but who went to North Korea during the Korean War seeking a new opportunity as science and technology also became a crucial part of North Korea’s state-building process. In the postwar situation of political and ideological consolidation, he became a national hero as the inventor of vinalon.

Born in 1905, in Tamyang of South Chŏlla Province, in the southwest region of the Korean peninsula, Ri Sŭnggi received his undergraduate and graduate education from Kyoto Imperial University, specializing in polymer chemistry, a field he was able to study in English, German, French, Italian, and of course, Japanese. In the spring of 1938 (around the time when DuPont began to commercially produce nylon), Ri Sŭnggi joined the synthetic fiber laboratory headed by the chemist Sakurada Ichiro (1906–86) at the Institute for Chemical Fibers Research, Kyoto University. A year later,
the laboratory succeeded in obtaining a water-insoluble synthetic fiber from polyvinyl alcohol.\textsuperscript{36} Ri Sŏnggi was one of the main researchers of the project, and it is he who, in the fall of 1939, made the announcement of a new synthetic fiber to the public. The patent for the fiber is held by, in order listed on the patent, Sakurada Ichiro, Ri Sŏnggi, and Kawakami Hiroshi.\textsuperscript{37} In 1948, Japan’s scientific community gave the fiber the generic name \textit{biniron} (vinylon in English; \textit{pinillon} in Korean), a name that is a combination of \textit{biniru} (vinyl) and \textit{nairon} (nylon).\textsuperscript{38} The fiber took on a different name in North Korea, however. The story told is that, in 1957, Kim Il Sung gave it the name \textit{pinallon} (vinalon in English) to reflect the Korean word \textit{nal}, which means “thread.”\textsuperscript{39} This difference is absolutely clear, for in North Korea, the name is never spelled in English with a “y” and never written in Korean as \textit{pinillon}, as how vinylon is written.

Ri Sŏnggi remained at Kyoto University until the end of World War II, publishing a number of articles in Japanese academic journals. For a few months in 1945, he was jailed for allegedly saying to students that the empire would soon come to an end.\textsuperscript{40} Upon his return to Korea, he became a faculty member of the Chemistry Department at Seoul National University (established during the colonial period as Kyŏngsŏng Imperial University). But this was a job he did not hold for long. Starting in July 1946 (with the founding of Kim Il Sung University in P’yŏngyang and amidst an academic crisis in South Korea as the government attempted to consolidate several colleges into a single national university), the North Korean state launched a major campaign to recruit scientists and engineers from South Korea. This campaign lasted until the end of the Korean War and resulted in the northward movement of around eighty South Korean scientists and engineers.\textsuperscript{41} In the summer of 1950, during the initial phase of the Korean War, Ri Sŏnggi left his post at Seoul National and began working as a technical expert at a chemical factory in Hamhŭng.\textsuperscript{42} Four years later, Ri Sŏnggi and his team processed the first batch of vinalon ever made outside Japan (Chunggongŏp Wiwŏnhoe, 25) (fig. 2).

The three main raw materials—coal, limestone, and salt—required in the making of vinalon are all abundant in North Korea. The raw materials are baked, hydrolyzed, and catalyzed into vinyl acetate, which is the monomer that undergoes polymerization into polyvinyl acetate. The saponi-
fication of polyvinyl acetate results in the final compound polyvinyl alcohol (PVA). PVA is turned into fiber form as it is sent through a spinning machine where the fiber is extruded through spinnerets into a coagulating bath, in a process called “wet spinning.” Fiber extraction through wet spinning, not the discovery of vinalon, is what the Sakurada team accomplished in 1939. Once the fibers are washed and dried, they become the final product, vinalon fiber.

Vinalon is a quite remarkable chemical compound. The fiber is able to absorb more moisture (hygroscopicity) than any other synthetic fiber. It has high resistance against sunlight, UV light, solvents, oils, and salts. Vinalon fiber is lighter than cotton and yet several times stronger. It has many industrial uses because of its high strength, low elongation tendency, and high resistance to chemicals. In the rubber industry, vinalon is used as reinforcements in belts, hoses, and tires; in agriculture and fishing industries, it is used as fishing nets, ropes for ships, and shade cloth to protect vegetables; and in the paper industry, vinalon fibers are used to improve paper strength.
and make paper resistant to base.\textsuperscript{45} In the manufacture of clothing, polyester is the most common synthetic fiber in the world, while vinalon fiber is exclusively used in North Korea to make everything from suits, shirts, work clothes, and dresses to innerwear, sweaters, towels, and socks.\textsuperscript{46} For most of the world, owing to historical and market reasons, however, vinalon is known mostly for industrial purposes.

The Construction of Vinalon City

A popular saying about the construction of the Vinalon Factory is that if the earth that was dug during the construction is piled in cubic meter blocks, the height of the pile would be 150 times the height of Mount Paektu, the tallest mountain on the Korean Peninsula, at 9,022 feet. (That would be 256 miles high.) As it originally stood in colonial Korea, it was spatially a medium-sized plant, at two square kilometers. But as a chemical factory, Pon’gung was the largest, and its reconstruction the most ambitious and publicized in the postwar period. The official account boasted that the 50 buildings that made up Vinalon City had a total floor space of 130,000 square meters, 15,000 production machines, and 1,700 container tanks (Chunggongŏp Wiwŏnhoe, 31, 107). And that they were connected by five hundred kilometers of piping, long enough to make a roundtrip to P’yŏngyang (Chunggongŏp Wiwŏnhoe, 31). The annual production capacity in 1961, as the official claim went, was 20,000 tons of vinalon fiber, enough to make 25 million suits (Chunggongŏp Wiwŏnhoe, 33). The factory was also capable of making synthetic rubber for tires and herbicides to kill weeds. “Our ancestors suffered the cold and heat without much clothing, and they broke their backs fighting weeds. Their pain has forever become history,” the editors of the Heavy Industry Committee wrote (Chunggongŏp Wiwŏnhoe, 36). Vinalon had a historical mission to fulfill (fig. 3).

The most publicized aspect about the construction was its speed, which came to be known as “vinalon speed.” The official length of time from planning to completion was fourteen months, from March 1960 to May Day 1961. The plan to build the factory was first made public in March 1957, but the fervor of construction was not felt until the first voluntary group of workers—thirteen hundred of them—arrived, on January 20, 1959. They
were a team of ch'ŏngnyŏn (young adults) and held a rally on the factory grounds, resolving to act as “vanguards” and “shock workers” in the construction project (Chunggongŏp Wiwŏnhoe, 4). By the end of June, there had assembled a motley construction crew of eleven thousand people made up of not only construction workers but also farmers, students, and soldiers (Chunggongŏp Wiwŏnhoe, 4).

The Vinalon Factory Construction Planning Committee, the state agency that oversaw the project, was formed in January 1960, sending the message that in the official account, the planning committee was formed only after the masses had already heeded the call of the state and begun to organize themselves as shock workers. As such, the willful action and ingenuity of the people are heavily emphasized in the official history of Vinalon Factory’s construction. One early instance of workers’ rising to the challenge involved the design of blueprints. This was the task of Design Team Number Five of the Heavy Industry Committee, which had forty under-trained but devoted engineers. The committee reported that, beginning in March
1960, the design team made twelve thousand blueprints in six months, an amount that would normally have taken “three hundred engineers two to three years” (Chunggongŏp Wiwŏnhoe, 37). The notion of “vinalon speed” began with the design team.

The tallest building was the Acetic Acid Shop. It was thirty-two meters in height and included the forty-meter-tall smokestack built by Ri Hŭisang’s Phoenix Shock Troop; the vertical windows of the building exemplified the modern style of the entire factory complex (Chunggongŏp Wiwŏnhoe, 52). The largest building was the Spinning Shop. Situated in the western part of the factory site, near the river and the railway, this building turned polyvinyl alcohol into vinalon fibers and shipped them out to textile factories (fig. 4). The building was 160 meters in length and 117 meters wide, with 35,000 square meters of floor space. On the inside, one-third of the floor space was dedicated to the workers’ nonproductive time, including break rooms, showers, and recreational facilities. Outside, there was a water fountain, a flower garden, and a wide green area lined with trees. The spinning shop represented what Vinalon City was about—a “workers’ palace” that supported a healthy, productive culture (Chunggongŏp Wiwŏnhoe, 51).
The ceremony for the completion of the Vinalon Factory took place over two days, on May 6 and 7, 1961, with Kim Il Sung in attendance both days, the first one on factory grounds and the second one in Hamhung City. After fourteen months of planning and construction, the factory was ready for operation. It had taken a lot of materials, technical ingenuity, and above all, hard work of the people. On this last factor, the aggrandized account of the Vinalon Factory is not wrong. The factory was an enormous toiling ground of tens of thousands of volunteer workers made up of students, soldiers, farmers, fishers, medical workers, office workers, artists, homemakers, and workers on vacation from their formal jobs. In this situation, a new historical memory was born and took effect in everyday life.

“Each working hand flows with excitement”: Vinalon and Everyday Life

Vinalon Heroes and Sublime Danger

As workers from all over the country, a large portion of them voluntary, gathered at Pon’gung and pledged to execute the will of the party and the state, the site became a mass movement within a mass movement. The nationwide momentum of the year-old Ch’ollima Work Team Movement, in which a half-million workers were participating, was carried to the Vinalon Factory. In the course of fourteen months, the Vinalon City project gave rise to more than two hundred shock work teams, including the August Eighth Shock Troop, April First Shock Troop, Mount Paektu Young People’s Shock Troop, Poch’ŏnbo Torch Shock Troop, and Phoenix Shock Troop. These shock work teams were made up of mostly nonskilled workers, and what they essentially did was a great amount of nonmechanized work in a short amount of time, in a difficult environment. For example, the Mount Paektu Young People’s Shock Troop made a name for itself by shoveling and hauling fifteen cubic meters of dirt (fifty-seven thousand pounds) from the frozen ground in the span of a night, in negative twenty degrees Celsius.

As a mass movement of its own, the construction site was the stage for work heroism. Three months after construction was complete, the Supreme
People’s Assembly awarded twenty-two people who had participated in the construction of the Vinalon Factory with the title “work hero,” a group that included ordinary workers, technical experts, soldiers, and a certain famous chemist; one soldier, Ri Insik, was awarded the title Hero of the Republic. The most celebrated work hero was of course Ri Sŭnggi, but his story at the construction site is not dramatic, although his life certainly is; he did not become a hero because of a single superhuman act, as other work heroes demonstrated. Stories about these individuals are indeed heroic, and like true heroic tales, their stories fall on the verge of being tragic. No human being should have to go through what they did. One criticism about these mass movements is that their aestheticization of work led to the tolerance of atrocious work conditions.

Ri Insik’s story of how he earned the title Hero of the Republic deserves a mention here. On an off day in March 1961, Ri Insik, a twenty-year-old private in the Korean People’s Army, was thinking about how to speed up the installation of columns that support the floors of the Acetic Acid Shop (Chunggongŏp Wiwŏnhoe, 292–96). He noticed that the reason his squad took forty minutes to install one column was that the crane held the column as it was being welded into place, when the crane could be bringing another to the next column space. The column could be supported by ropes while it was being welded. He presented the idea to his squad leader, who implemented it immediately. The idea worked, and at the end of the day, the squad had installed three times the daily average number of columns. Just before the shift ended, the wind picked up and shook the one column still not welded. If the column fell, it would injure many workers and damage what had already been built. Ri Insik acted quickly and grabbed a loose rope from the slowly falling column. It was twelve meters high and weighed nine tons. As the column leaned, he wound the rope around his body and felt the ligaments in his hands and arms being torn. At that moment, the will to save the factory overwhelmed the pain he felt all over his body. The resistance of his body stopped the column’s leaning as he lost consciousness, and his squad rushed in to take control over the situation.

The official history of the Vinalon Factory entails the glorification of dangerous and risky actions through stories of work heroes. Dangerous actions are tolerated as long as they are done for the completion of state goals, as
long as they are the means to an end that corresponds to the expansion of state power. What do we make of the danger attached to the notion of heroism? How do we understand the aestheticization of danger that allows the state and society to accept what should be, to say the least, an atrocious violation of human and labor rights? A heroic deed is one of sublime danger—danger as a notion that transcends place and time to fall upon any person, whether a guerilla soldier in Manchuria or a worker at Pon’gung. The danger they face on the battlefield and the construction site is the same in that it is a stage for a greater cause—the supra-individual aim of the state.

Sublime danger, with its supra-individual consequence, is the aestheticization of what is arduous, painful, and often life threatening. In the discourse of work heroes, what is perilous becomes beautiful, and in the case of (but not limited to) North Korea, this beauty is often tied to the nationalist sentiment. (To be sure, nationalism as an aesthetic category is a universal phenomenon of twentieth century, especially in postcolonial countries, whether socialist or not.) A central component in danger as a sublime category is the body: the sensual body in practice with an abstract cause. The soldier Ri Insik certainly feels the pain of his torn ligaments, but he does not let go—not to become a hero, for that itself could never be the goal, but to repay his debt to the nation that had given him a new life. The destruction of his body is therefore not the giving up of what is expendable (not strictly a sacrifice) but making up for what had been due all along, as a worker and citizen of North Korea. The offering of the body evens out what had been owed. Susan Buck-Morss, looking at work heroes of the Soviet Union, has talked about the heroic body in a similar way: “The physical suffering that hollows out the individual for the sake of the collective is the ecstasy of the Soviet sublime. The triumph of the body is its destruction as well.”

The construction site of the Vinalon Factory was a frenzied environment of tens of thousands of mostly nonskilled workers from different regions and backgrounds and working under multiple chains of command and their various plans. The other side of blinding speed and ingenuity was therefore disorder. Burawoy has conceptualized this phenomenon as “anarchy of the socialist plan,” which requires a constant reorganization of the labor process. After all, the brave builders of the forty-meter smokestack, who finished building it in a snowstorm, made a name for themselves for
refusing to come down, even when they were ordered to do so. And the day when the work hero Ri Insik pitched his new idea and saved a falling column had been his day off. Heroic work of ordinary people emerged essentially from everyday disorder, in which state power—represented by the central plan—was ineffective.

Extraordinary acts of ordinary workers were, in other words, symptoms of an ineffective central plan, in which the goal is reached not so much by systematic adherence to detailed plans but by unplanned actions and creativity of ordinary nonskilled workers in everyday life who take no part in the actual making of the plans. The interaction between the workers’ everyday activities and the grand plan of the state is, as James Scott has shown, the domain of practical knowledge necessary for the realization of any centrally planned economy. Extraordinary acts of ordinary workers were, in other words, symptoms of an ineffective central plan, in which the goal is reached not so much by systematic adherence to detailed plans but by unplanned actions and creativity of ordinary nonskilled workers in everyday life who take no part in the actual making of the plans. The interaction between the workers’ everyday activities and the grand plan of the state is, as James Scott has shown, the domain of practical knowledge necessary for the realization of any centrally planned economy. It was none other than frenzied work itself, through its practical knowledge, that kept the plan functioning. But of course, the planners were not blind to the necessity of practical knowledge and actions. For instance, Deborah Kaple writes that Chinese Communist Party authorities considered the system of work heroism the most rational tool for the success of an enterprise. When the work hero system was functioning (and it equally was not), it did so while undermining the central plan, the hallmark of socialist economy. The destruction of the body in becoming a hero was, simultaneously, the dissolution of the plan. Work heroes and the system from which they are born existed in a dialectical relationship of negation.

Everyday Life and the Ideology of Work

The completion of Vinalon City in May 1961 was part of North Korea’s great industrial narrative that was rooted in actual economic transformation. This moment coincided with the proclamation of a socialized economy (January 1961) and the preparation for the Fourth Congress of the Korean Workers’ Party known as the “Congress of Victors” (September 1961). The story tells us that, at the dawn of a new decade, North Korea had proletarianized its citizens and nationalized all forms of production, thereby establishing a centralized system of appropriating total surplus. Furthermore, the emphasis is on the achievements of the North Koreans themselves. The industrial narrative for the new socialist era entails an origin story that
excludes international involvement. The transnational history of Vinalon City became immutably localized and took on a dimension of everyday reality. It is in everyday life that vinalon exerted its ideological force. As Sheila Fitzpatrick remarks about everyday life in 1930s Soviet Union, where tremendous change really occurred in people's lifetimes, the "utopian vision" was "part of everyone's everyday experience."  

"Everyday life" as employed here is Henri Lefebvre's concept — everyday life as a mode of production and administration, the base of domination in which the "tragic" is dissimulated. It is fundamentally ambiguous because it disguises the condition of domination while revealing the experience of the subject: "The everyday is a kind of a screen . . . it both shows and hides." Subjectivity and subjugation are both indistinguishably present in everyday life, as a dimension of living that involves, as the social historian Alf Lüdtke puts it, the "particular way in which participants [are] — or could become — simultaneously both objects of history and its subjects."  

Ri Sŏnggi once said the following about vinalon: "Please don't treat the vinalon fabric irreverently. And please don't think that it was made by one scientist. . . . When your children ask about how vinalon came to be, tell them not of a scientist's name but the history of the Workers' Party." Ri’s statement is precisely about the ideological effect of vinalon in the everyday as a common product. By linking the history of vinalon with the history of the Korean Workers’ Party, Ri is revealing an all-too-familiar ideological moment: the fetishism of the product. The everyday aspect of vinalon encompasses the fetishism of vinalon and the factory not because they are glorified emblems of North Korea but because they are misrecognized — in their glorification — as something they are not but appear to be.

Everyday life supports the fetishism of vinalon by making it appear as a product of an extra-social entity, in this case, the Korean Workers’ Party. Misrecognized in the fetishism are the historical and social aspects of vinalon. First, the complex, transnational history of vinalon that brings together the Japanese colonial industry, North Korea's postliberation effort to start its own chemical industry, and East Germany's reconstruction assistance is sublimated in the national narrative. Second, the enormous amount of collective labor that went in to start up the factory and to produce the fiber is misrecognized as something that originates from the party and the state.
Vinalon as a historical and social product appears as a product that justifies the hegemonic relationship between the party-state and the workers. The fetishism of vinalon supports its appropriation by an extra-social entity, the party-state.

Almost two years after the Vinalon Factory went into operation, a team of writers from the popular magazine *Ch’ŏllima* made a visit to the factory. Upon arriving at the spinning shop, they saw a “truly mysterious” sight: “From each spinning machine, the golden silk strips were flowing out like a seven-colored rainbow, as if to envelop our entire country in it.” The exaltation of vinalon is understandable, as by this time the factory was producing twenty thousand tons of vinalon fabric a year and beginning to satisfy the fabric needs of the population. This was still only about fifteen meters of fabric per person per year, but it was a major improvement from five meters of fabric per person per year in the mid-1950s. Here is their account of the aldehyde shop: “What surprised us when we were walking up to the fifth floor is that there was nobody in sight. There was only the sound coming from the myriad of pipes . . . as if we were in a fantastic world of science.”

The factory was an enterprise for the new socialist era in which the workers are liberated, through mechanization, from dangerous and difficult work (although through dangerous and difficult work was exactly how the factory was built). The visitors also write about a song sung by the women spinning workers:

> The golden star of Ch’ŏllima shines on,  
> as we, the women spinning workers, create fireworks.  
> Forever tended by our leader,  
> each working hand flows with excitement.

The spinners’ song brings us to the final point: the connection between vinalon and the *ideology of work*. The meaning of vinalon, as an everyday product of labor consumed by the public (“As we, the women spinning workers, create fireworks”), has a dimension of fetishism: vinalon appears as a manifestation of an extra-social entity, the party-state. The social labor contained in vinalon is misrecognized as the materialization of the party-state’s capacity (“The golden star of Ch’ŏllima shines on”). The everyday dimension is precisely where ideological power is hidden. It begins with the
misrecognition of the product—vinalon as a product not of social labor but of state capacity. Specifically, misrecognition is a process in the ideology of work in which work becomes the object-cause of desire. Vinalon supports the ideology of work by connecting work with desire (“each working hand flows with excitement”).

Work is the object toward which desire sets its course; at the same time, work is its cause. And the conceptually circular movement prevents the satisfaction of desire. Desire moves around the object but never attains it, and as such, the object-cause does not have a limit. (This circular notion is an application of Jacques Lacan’s concept of object petit a—the object that has broken away from the subject, around which desire moves without clinging to it.) Like its ultimate product—surplus—work does not have a limit (there is always more work to be done!). Work in real life is a finite human activity with physical limitations, but as ideology, it must detach itself from any kind of limitation. In actual labor process, whether socialist or capitalist in appearance, the circular movement of work as an object-cause takes on the characteristic of ambiguity, sustaining the complicity of workers within the unstable labor process while masking the subjugating reality of industrial production. The production of vinalon is the object-cause of workers’ desire that, like vinalon itself flowing out like a rainbow, can never be satisfied.

Everyday life is the concrete space in which practice and ideology meet, ultimately sustaining the condition for the desire to work. For ideology to take effect, they must exist in everyday life as practice. Fetishism, misrecognition, and object-causation are not merely concepts: they are essential stages in the production and consumption of objects like vinalon. What is more, in industrial work in general, they constitute the process by which the workers become, at least temporarily, complicit in the reproduction of their own working condition. Everyday life remains opaque as domination and subjectivity are enmeshed within it, neither, however, fully arriving at its intent.

**Conclusion: Critique of Industrialism**

By late 1960s, along with the Vinalon Factory, Hamhûng City boasted the full operation of a half-dozen large factories, employing tens of thousands of
workers and supporting the livelihoods of a half-million people. Some thirty years later, however, the industrial production of Hamhŭng came to a standstill. Raw materials, power, and trade had been dwindling since the early 1990s, but more than that, the workers stopped going to work in search of food and income, the two things the factories and the distribution system could no longer provide. Stripped machine parts as well as pure nickel and copper, taken from wires and pipes, began to appear at local markets. At the end of the twentieth century, the industries of Hamhŭng Plains suffered the same predicament as the rest of the country, but they were once the pride of North Korea’s economy, and some of the largest chemical factories in the world.

In his work on Magnitogorsk, the largest steel factory of the Stalin era, Stephen Kotkin writes that heavy industry was “pursued zealously by the Soviet leadership as the key to modern civilization.” The paradox in the pursuit of Stalinist industrialization, as Kotkin points out, was that it entailed the advice and aid of leading capitalist firms. For both existing socialism and existing capitalism of the twentieth century, industrialism was the road to their particular destinations. Whether the goal was to change the mode of production or to accumulate capital, the essential ingredient was the production of surplus, and nowhere was this production more effective and massive than in industrial work. The Vinalon Factory, Magnitogorsk, Gary Steelworks (United States), and Pohang Steelworks (South Korea)—all emblematic in their national situation—were fundamentally the same in subsuming life under work in order to pump out surplus from the worker. At the heart of modernization (the socialist kind or otherwise) was the logic of industrialism that treated work as sacred and productivity as the measure of human character. (The heroization of exceptional workers in socialism finds its equivalent in the idolization of self-made entrepreneurs in capitalism.) Ch’a Munsŏk is especially incisive when he says that industrialism is not a concept that describes the capitalist or socialist mode of production but a “modern obsession” that indiscriminately penetrated the political economy of both capitalism and socialism.

One aim of this essay is to contribute to shaping a critique in the study of North Korea that builds upon the routine method of searching out the failures and deviances of North Korea in relation to some ideal socialism.
or capitalism or democracy. To be sure, as much as has been done, it is important to criticize the fact that North Korea’s law on gender equality was hardly practiced in reality, that the promise of democracy was beset by an intense religionlike worship of the leadership, that human emancipation was overwhelmed by the culture of militarism, and that honorable work was really a mask of exploitative, back-breaking work.

A glaring problem that surfaces in such a style of critique is that all the problems found in North Korea are also found in all other countries, nations, cultures, and traditions. The demand for improvements in human rights in North Korea, for example, is faced with this exact situation: can a government or organization effectively condemn and demand changes in North Korea’s human rights when these rights are violated daily in their own places? The same logic is applied to other issues as well. A way out of this quandary is to place the critique of particularities of North Korea (its failures and deviances) within the general critique of modernity. Critique is to be imposed on the universal condition of the modern world by using particular, historical situations. The transnational history of the Vinalon Factory, its analysis in relation to industrialism, and the investigation of everyday life of work, all presented in this essay, are such an attempt.

Notes

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1. Chunggongŏp Wiwŏnhoe (The Heavy Industry Committee), Pinallon kongjang kŏnsŏl (The Construction of the Vinalon Factory) (P’yŏngyang: Kungnip Kŏnsŏl Ch’ulp’ansa, 1961), 297–300. Hereafter, citations are provided in the text.


3. The spelling of the fiber as “vinalon” and its corresponding Korean word pinallon are exclusive to North Korea. The fiber is more commonly known and spelled in the world as “vinylon.”

6. That ambiguity is a characteristic of everyday life, “constituted from contradictions which have been stifled,” is Henri Lefebvre’s thought. See Lefebvre, *Critique of Everyday Life*, vol. 2 of *Foundations for a Sociology of the Everyday* (London: Verso, 2008), 220.
7. The analysis on the dominance of industrialism in existing socialism, including North Korea, is found in Ch’a Munsŏk’s *Pannodongŭi yut’op’ia (The Utopia of Antilabor)* (Seoul: Pak Chongchŏl Press, 2001).
8. On Noguchi and his involvement in Japan’s chemical industry, see Barbara Molony, *Technology and Investment: The Prewar Japanese Chemical Industry* (Cambridge, MA: The Council on East Asian Studies at Harvard University, 1990). As it grew to be one of the largest chemical companies in Japan, Nihon Chisso also became one of the most notorious. A symbol of Japan’s reckless postwar industrial growth, Nihon Chisso emitted mercury in the town of Minimata, which caused the so-called Minamata disease.
13. Ibid., 246.
17. Ibid., 36.
18. Ibid., 37.
19. Kuksa P’yŏnch’an Wiwŏnhoe (National Institute of Korean History), *Pukhan kwan’gye saryo-
21. Ibid., 33.
23. T’ongil Yŏn’guwŏn (Korean Institute for National Unification), Togiljiyŏk Pukhan kimilmunsŏjip (Secret Documents on North Korea from the German Region) (Seoul: Sunin, 2006), 75.
25. Ibid., 96.
28. Ibid., 189.
30. Ibid., 99.
31. During my visit to the city in May 2014, a local guide told me that Chŏngsŏng Avenue is also popularly known as Pieck Avenue (p’ik’ŭ kŏri), but she was not sure where the name came from. I could not tell her what I know.
32. Ri Sŭnggi, Pinallon (Vinalon) (P’yŏngyang: Kwahak Ch’ulp’ansa, 1976), i. The term chuch’e refers to Kim Il Sung’s philosophical work that has since the early 1970s been the formal guiding principle for all state and party apparatuses. It can be translated as “subjectivity,” “independence,” or “self-reliance.”
33. T’ongil Yŏn’guwŏn, Togiljiyŏk Pukhan kimilmunsŏjip, 15.
34. Mizuno, Science for the Empire, 68.
38. Sakurada, “Sakurada Laboratory,” 84–85. Vinyl is a common plastic composed of carbon and hydrogen chains, while nylon is a DuPont-created synthetic fiber made up of nitrogen-
containing amide chains. The vinylon chain is different from the nylon chain, but the similarity in the ending sound seems to have been deliberate so that it would be immediately recognized as something similar to nylon.


42. Chŏng, “Pinallon’gwa Ri Sŭng-gi paksa,” 68.


47. The dates, August 8 and April 1, refer to the days when Kim Il Sung visited the factory. Besides being the tallest mountain, Paektu is a source of Korea’s origin myth. And Poch’ŏnbo is a border village where, in June 1937, Kim Il Sung’s most famous battle against Japanese imperial forces took place.


50. Burawoy, Politics of Production, 163. In comparison, Burawoy points out that the anarchy of the capitalist market is compensated through the direct control of labor power (the hiring and firing of workers).


53. Overachievement was equally met with intentional underachievement, so that production quotas would be kept low and the working environment more tolerable. Moreover, all too often, high levels of productivity resulted in low-quality products and waste of resources.


56. Ibid., 78.


59. Kim Ilchun, “Kiri charanghari” ("We Shall Forever Be Proud"), *Ch’ollima* 3 (1963): 32.

60. Ibid., 31.

61. Ibid., 31–32.


63. Choúnbótbul (Good Friends), *Pukhansaramduri malhanün Pukhan’iyagi (North Korean Stories by North Korean People)* (Seoul: Ch’ongt’o Ch’ulp’an, 2000), 108.

64. Ibid. The Vinalon Factory resumed operation in February 2010.


66. Ibid., 364.

67. Ch’a, *Pannodongūi yu’t’op’ia*, 16.