

The Argus

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Since 1954

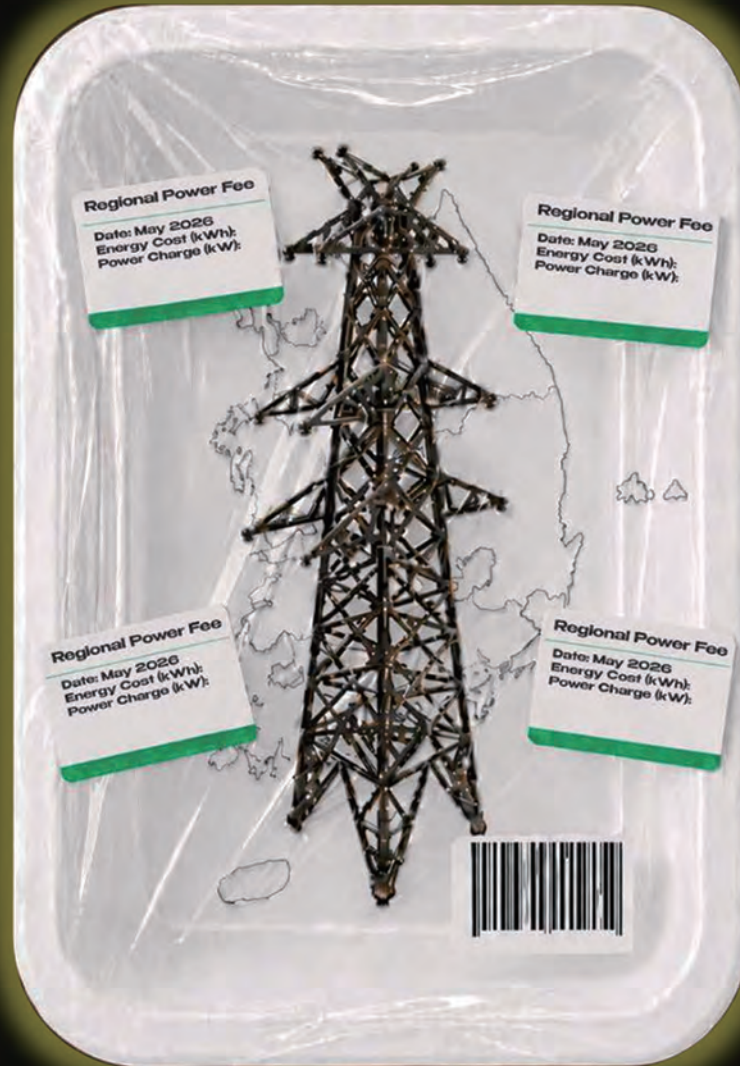
South Korea's New Electricity Pricing: A Region-by-Region Breakdown

How Regional Supply and Demand Could Reshape South Korea's Energy Costs

The Hidden Cost: Small Businesses Caught in the Middle

The Physics Behind Power Bill: Understanding Transmission Losses

When Clean Energy Complicates the Grid



HANKUK UNIVERSITY OF FOREIGN STUDIES

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Editorial

The Weight of Choice

Every society inevitably faces moments of choice. This is because every decision carries both advantages and disadvantages, making it impossible to pursue one value without affecting another. Some choices may bring greater efficiency and convenience, while others may prioritize stability, fairness, or safety instead. As a result, individuals and societies continuously weigh competing values in an effort to determine which direction should be given greater consideration. Rather than searching for a perfect answer, people move forward through the ongoing process of balancing benefits and limitations under changing circumstances.

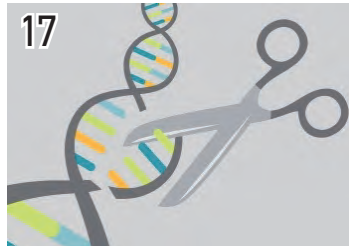
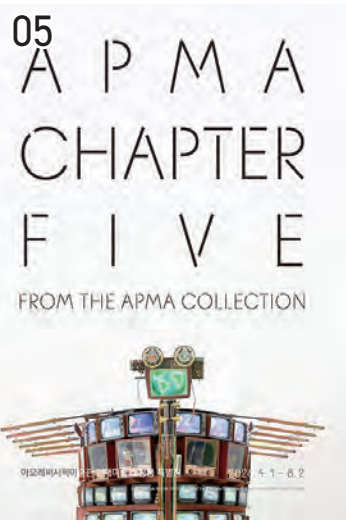
This June issue explores the different ways in which such choices are made within society. In some cases, societies proceed with certain decisions even when clear disadvantages exist, believing that the social benefits they may produce are greater than the potential risks or limitations involved. In such situations, choices are often driven by the expectation that the advantages gained will outweigh the negative consequences that may follow. At the same time, these processes reveal how choices are rarely determined by a single standard, as priorities may shift depending on the values and circumstances involved.

Elsewhere, societies may take a far more cautious approach when making decisions, especially in areas closely connected to ethical concerns or potential social harm. In such cases, even highly beneficial changes are often not fully accepted unless there is sufficient confidence that the possible risks and negative consequences have been adequately addressed. However, in rapidly changing social environments, decisions are not always given enough time for careful consideration. As change accelerates, societies may struggle to fully evaluate both advantages and disadvantages before being forced to respond quickly to new circumstances.

Ultimately, the choices societies make reflect more than simple judgments between right and wrong. They reveal what people are willing to prioritize, what kinds of risks they are prepared to accept, and what values they believe should be protected even amid rapid change. As societies continue to face new technologies, shifting environments, and increasingly complex questions, the process of balancing benefits and disadvantages will remain an unavoidable part of moving forward. Amid these continuing changes, reflecting on how societies make such choices may offer a deeper understanding of the values, priorities, and sacrifices that continue to shape the direction of society. 

By Lee Seeun
Editor-in-Chief

이 세 언



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Cover Story

>> South Korea (hereafter Korea) is undergoing a quiet but consequential transformation in how it prices electricity. For decades, consumers across the country paid the same rate regardless of where their power was generated or how far it traveled. That is about to change. Special Act on Activation of Distributed Energy, which took effect in June 2024, lays the groundwork for a locational marginal pricing system – one that ties electricity rates to the actual costs of generation and transmission in each region. The shift reflects a stark reality: while Seoul produces just 7.5 percent of the electricity it consumes, regions like North Gyeongsang and South Jeolla generate more than twice their local demand. This article examines the three cost components embedded in the new pricing system – energy marginal cost, marginal loss cost and marginal congestion cost – and asks what each means for households, industries, and the future of Korea’s energy transition. The answer, it turns out, depends entirely on where you stand.

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Between Achievement and Regret

HUFS GSC, Faculty Council Protest Against Appointment of Chairman's Son-in-Law



©Lee Joon-woo / The Argus

▲ HUFS GSCs and Faculty Council members picket at Seoul Campus, demanding the cancellation of the Chairman's son-in-law's board appointment.

During the school board meeting on March 5, Chairman Kim Jong-chol of Dongwon Educational Foundation — the school's governing body — recommended his son-in-law as a new board member, citing his administrative experience and understanding of the university. In response, the Seoul and Global Campus General Student Councils (GSCs) and the Faculty Council of HUFS have protested the move, arguing that it violates the school's long-standing principles of public management.

The controversy stems from a history of corruption under the founder's family, including embezzlement and admissions fraud, which led to the "Second Founding Declaration" in 1998 and an agreement to limit the influence of the founder's family and relatives in 2004. Under these principles, Chairman Kim — the nephew of the founder — was allowed on the board as a representative of the founding side, provided that no additional relatives would participate in school management. However, the GSCs, representing the students, pointed out that Chairman Kim had already expanded family influence by hiring one brother as a professor and another as a company executive and by removing the term limit for his chairmanship in 2021. They argued that appointing his son-in-law would fundamentally collapse the public governance structure established through decades of struggle.

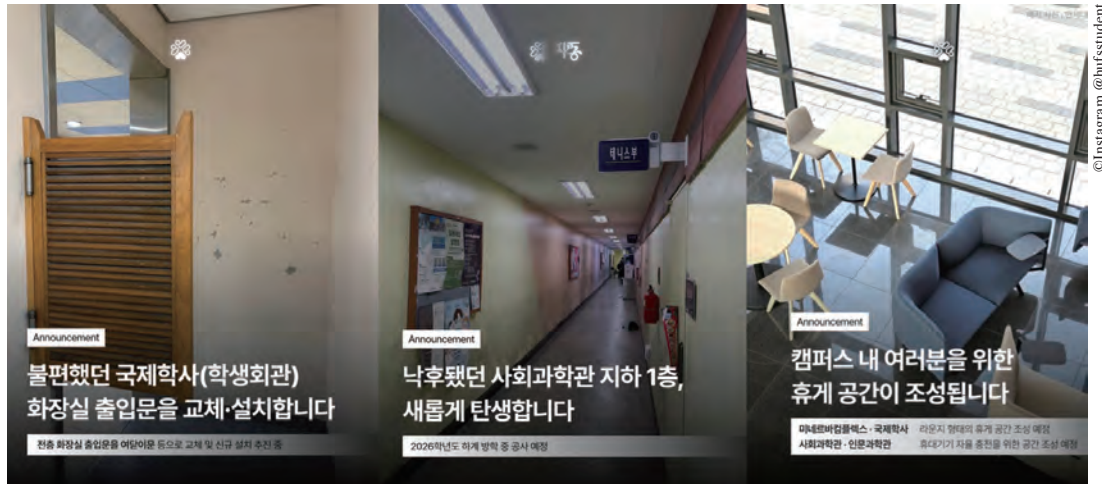
To block the appointment, the GSCs have submitted official petitions to the Ministry of Education and the National Assembly on April 20, demanding transparent criteria for board selection. During a meeting with the foundation on May 11, students voiced concerns over privatization, though the foundation responded that the son-in-law has not been officially designated yet. On May 7, 8, 12, 13 and 15, the GSCs and the Faculty Council engaged in joint actions, including picketing and distributing press releases, to inform external media of the situation.

Regarding the controversy, Jeong Min-chaе, a sophomore at the Ingenium College of Convergence Studies, said, "The foundation must honor the promises made under the Second Founding Declaration. There must be a clear, persuasive justification for recommending the chairman's relative as a board member; otherwise, it risks undermining fairness in school governance." Ensuring that the board remains public and transparent, rather than returning to family-centered management as in the past, will be a crucial test for the future of HUFS's founding spirit. 🇰🇷

Editor's Note: After this article was finalized, the chairman's son-in-law was neither nominated nor appointed as a board member, and the issue discussed herein was subsequently resolved.

By Lee Joon-woo
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HUFS to Upgrade Campus Facilities During Summer Vacation



▲ From left, newly installed restroom doors at GlobeeDorm, the Social Science Building scheduled for renovation, and a lounge-style rest area planned for students on campus during summer vacation.

The HUFS Seoul Campus General Student Council (GSC), Sunmyeong, announced plans to carry out major facility improvement projects during the June summer vacation. The plan includes upgrades such as restroom renovations in GlobeeDorm, elevator accessibility in the Center for Foreign Language Teaching and Learning Development, and remodeling in the Social Science Building.

For a long time, many students at the GlobeeDorm have experienced inconvenience due to old restroom doors that were difficult to lock properly. According to the GSC, some restroom entrances were not properly fixed and were small in size, causing privacy and safety concerns for students. In some cases, doors shook while in use or were not installed at all. The replacement and installation of restroom doors in older buildings are expected to improve both safety and privacy while providing a cleaner and more comfortable living environment for resident students.

At the Center for Foreign Language Teaching and Learning Development, the installation of elevators addresses a long-standing accessibility issue. Many students have experienced inconvenience due to the lack of elevators. Seol Yeo-jin, a junior of the Department of Spanish said, "Moving between floors during classes was often uncomfortable and physically tiring." The project is expected to reduce inconvenience for students and staff who regularly move between floors for classes and administrative work. The new facilities are expected to improve accessibility and convenience for both students and staff.

Meanwhile, the previously outdated basement level of the Social Science Building is undergoing renovation. The area is currently used by several central student clubs, but concerns over deteriorating facilities and humidity have continuously been raised. According to the plan, the area will be remodeled into a more practical and student-friendly space equipped with improved lighting, new seating areas, and upgraded interior facilities for study and relaxation. Additional self-governing spaces are also expected to be created by utilizing former shower rooms and unused areas. Furthermore, new lounge-style rest areas and phone charging spaces will be established in buildings such as the Minerva Complex, GlobeeDorm, the Social Science Building, and the Humanities Building. Through these upgrades, HUFS aims to enhance overall student welfare and campus conditions. 📍

By You chae-hyeon
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HUFS Korean Language Center Opens 2026 Summer Program Recruitment

Center for Korean Language and Culture of HUFS began recruiting international students for its 2026 summer Korean language short-term course from May 4 to June 19. According to the center, the short-term course will run from Aug. 6 to 26 for approximately three weeks, while the regular summer program will operate from June 4 to Aug. 13. Placement tests for each program are scheduled for June 26 and May 22, respectively.

Center for Korean Language and Culture has continuously operated seasonal Korean language programs for overseas students and foreign residents in South Korea. While the short-term course focuses on intensive Korean language education during vacation periods, the regular course offers systematic language classes in speaking, listening, reading, and writing over a longer academic schedule. The regular course also includes level-based language courses, cultural activities, and exchange programs with Korean students. Students are divided into different levels through placement tests before classes begin. In addition to regular language courses, the program provides activities designed to help students better understand Korean traditions and everyday life, including traditional culture programs, cultural field trips and exchange activities with Korean students.

A representative from the center explained that “The program aims to provide not only Korean-language education but also opportunities for students to directly experience Korean culture through cultural activities and exchange programs.” As global interest in Korean culture continues to grow, the program is expected to provide foreign students with opportunities to experience both Korean language and culture firsthand. 📸

By Jang Yeseo
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HUFS Global Volunteers Takes a New Leap After 4 Years

Pre-training for the 2026 Summer HUFS Global Volunteers activities, for 20 participants selected from May 6 to 20, begins on June 23. This pre-training will be conducted for participants who will volunteer for 8 nights and 9 days at elementary and middle schools in Ulaanbaatar, Mongolia. All participants will receive four pre-training sessions on June 23, July 3, 14, and 30. The pre-training will cover volunteering practices as well as safety training and education about Mongolia.

“HUFS Global Volunteers” is an active journey in which volunteers plan and implement educational and cultural programs for local children based on pre-training guidelines, and even improve the local educational environment. The activities of the HUFS Global Volunteers had been suspended for four years due to COVID-19, but it resumed activities in 2026. The breadth of the initiative includes educational, regional and cultural volunteer work. In addition, cultural experience activities are planned for students to tour major attractions and historical sites in Mongolia.

A representative of Sunmyeong, the General Student Council of HUFS Seoul Campus, said, “We hope the participants can get out of the comfort zone of their campus life and have meaningful experiences in Mongolia. Also, we hope that they will have time to seriously think about what they can gain from it, beyond just a ‘volunteering’ line on their resume.” This June will be the starting point for participants to go beyond the borders of campus and find themselves. 📸

By Kim Ye-won
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Reframing Reality Through Contemporary Art

Lee Seun

Editor-in-Chief

Amorepacific Museum of Art was founded on the basis of the Pacific Museum, which was established in 1979, and has continued to research, collect, and exhibit both traditional South Korean (hereafter Korea) art and contemporary art from Korea and abroad. Under its founding vision of serving as “an open space where beauty can be discovered in everyday life,” the museum has sought to communicate with the public through art while expanding contemporary cultural discourse. This special exhibition, “APMA, CHAPTER FIVE — FROM THE APMA COLLECTION,” reflects the museum’s vision by examining both Korean and global contemporary art and demonstrating how contemporary art has evolved within different cultural and historical contexts. Through paintings, sculptures, installations, and media art, the exhibition explores the relationships between the human body and identity, space and materiality, technology and society, and ideals and reality in diverse ways. Through this exhibition, The Argus seeks to provide readers with an opportunity to reflect on various questions surrounding contemporary society and human existence while experiencing the expanded possibilities of contemporary art.



Viewing Information

Location

Amorepacific Museum of Art
(1-minute walk from Exit 2 of Sinyongsan Station)

Period

2026. 04. 01 - 2026. 08. 02
(Closed every Monday, January 1, and during Seollal and Chuseok)

Opening Hours

Tuesday to Sunday, 10 a.m. to 6 p.m.

Admission Fee

Adults: 13,000 won (US\$8.90) / Undergraduate and Graduate
Students: 10,000 won (US\$6.80) / Children: 6,500 won
(US\$4.45) / Children Under the Age of 3: Free

| Raising Questions Through Art

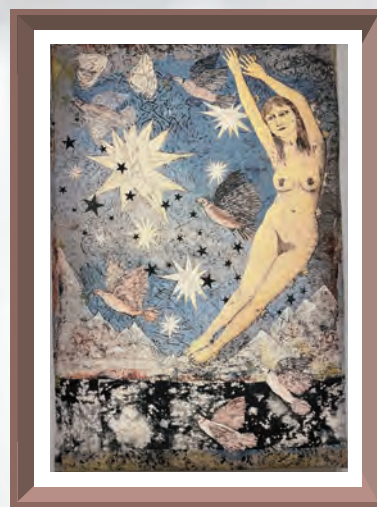


▲ Caribbean Tea Time (1987)

Upon entering the first exhibition hall, the first work that captures visitors' attention is a folding screen-shaped piece positioned at the center of the space. The work is "Caribbean Tea Time" (1987) by David Hockney, one of the most influential contemporary artists from the United Kingdom. The front side of the folding screen is filled with vivid colors and geometric shapes, creating the impression of being inside a cafe in the Caribbean. In contrast, the back side consists of simple geometric forms such as lines and shapes placed against a white background, giving a more restrained and calm atmosphere. The idea that a folding screen itself could become a single artwork feels rather fascinating. David Hockney was a British painter, draftsman, printmaker, stage designer, and photographer. He was also one of the British artists who contributed to the Pop Art movement, an artistic genre that emerged primarily in New York during the early 1960s. Pop Art was a tendency within figurative art that actively embraced images from popular culture into the realm of art. Hockney is an artist who has continuously expanded the ways visual experience and spatial perception are understood by working across various media, including painting, drawing, photography, printmaking, and stage design. While

emphasizing sensory experience through bold colors, he also developed a distinctive visual language that combines photographic perspectives with painterly composition, allowing multiple viewpoints and layers of time to coexist within a single image. Through its fragmented composition and continuous shifts in perspective, "Caribbean Tea Time" reflects Hockney's exploration of photographic collage and theatrical space during the 1980s. The work condenses his experiments with space developed across printmaking, photography, and stage design, ultimately revealing his continued interest in how images construct spatial experience.

Behind the folding screen stands "Sky" (2012) by Kiki Smith, a contemporary artist born in Nuremberg, Germany, who is currently based in New York. On the right side of the work, the image of a floating female nude appears to



▲ Sky (2012)

swim across the composition, while birds and stars spread throughout the space like a night sky. The human body and cosmic elements seem to drift beyond the constraints of gravity and linear time, suggesting that humanity, nature, and the universe exist as part of a single interconnected continuum rather than as separate entities. Through such works, Smith has continuously explored the relationships between life, death, femininity, mythology, and nature by using the human body as her starting point. Rejecting the idealized body, she instead encourages viewers to reflect on the conditions of human existence through physical forms marked by mortality and imperfection. For Smith, the body is not simply an object of representation, but a sensory and political space where social norms, power structures, and religious and mythological narratives intersect. Upon closer inspection, viewers can see that the work is entirely stitched with thread. This further intensifies the sense of continuity that Smith seeks to convey.

Opening New Possibilities for Space and Sculpture



▲ Untitled (1991)

Entering the left side of the first exhibition hall, visitors encounter a bright white space illuminated like fluorescent lighting. Unlike the previous gallery, this exhibition space creates a calm atmosphere. Compared to the earlier gallery filled with vivid colors, the works displayed here appear restrained rather than extravagant. Along the left wall, 12 units made from materials resembling those found at construction sites are arranged at regular intervals in various colors. This is “Untitled” (1991) by Donald Judd, an artist born in Missouri, United States. The work is made of anodized aluminum. Judd was one of the key figures who defined the direction of late 20th-century contemporary art while representing Minimalism. Minimalism was an art movement that emerged during the 1960s and 1970s after World War II, emphasizing simplicity and conciseness. It pursued restraint by minimizing technique and decoration, and later became one of the origins of the philosophy of “living simply.” “Untitled” concisely demonstrates Judd’s minimalist philosophy. Each unit maintains the same size and form while being placed at equal intervals and identical heights, directly revealing the relationships between objects, light, and space. The repeated aluminum forms function as minimal units of color and shape while simultaneously shaping the surrounding space and the viewer’s mode of perception. In this way, Judd moved beyond the traditional distinction between painting and sculpture by presenting a new form of three-dimensional work based on simple industrial materials.

At the point where the final aluminum unit of “Untitled” ends, three square-shaped works are placed side by side. Inside each square are lines of varying thicknesses and styles. These works are “Parallèles horizontales sans virage,” “Virage à 10° de parallèles horizontales,” and “Doubles virages à 25° de parallèles horizontales” (2010)

by François Morellet, a French artist born in Cholet who played a leading role in Minimalism and geometric abstraction. Produced between 1926

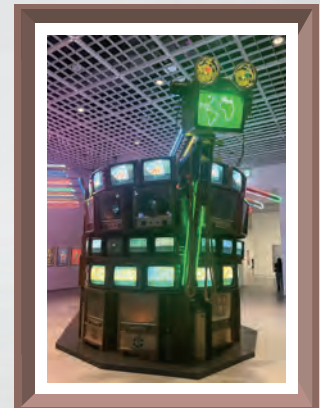


▲ Parallèles horizontales sans virage, Virage à 10° de parallèles horizontales, and Doubles virages à 25° de parallèles horizontals (2010)

and 2016, the series clearly reveals geometric structures using only black lines. Each title directly describes the arrangement and angular shifts of the lines themselves. By doing so, the titles eliminate narrative and symbolic meaning while emphasizing that the works are generated according to predetermined rules and conditions, making the visual outcome the direct result of the system itself. Morellet minimized artistic intervention by strictly following pre-established rules while excluding personal emotion and expression, allowing form and structure to emerge on their own.

Paik Nam June: Raising Questions About Reality Through Art

Entering the next exhibition hall, visitors encounter flashing LED lights in various colors. At the center of the room stands a work resembling a turtle ship. The body of the ship is composed of old television sets, while both sides of the vessel are lined with LED lights in different colors. The televisions



▲ Kon-Tiki (1995)

and lights that make up the sculpture continuously flicker, immediately drawing viewers’ attention. This is “Kon-Tiki” (1995) by Paik Nam June, who was a central member of the international avant-garde art movement Fluxus during the 1960s and 1970s and is widely regarded as the “father of

video art.” The title “Kon-Tiki” originates from the name of an exploratory raft symbolizing an indomitable spirit. The television monitors display three types of footage featuring turtle ships, Michelangelo, and various ships. Meanwhile, antique television boxes placed below contain objects such as dolls, Buddhist statues, and black-and-white photographs that transcend nationality and culture. By crossing the boundaries between East and West, science and art, the work visually presents the interaction between “art, technology, and humanity” within a global media environment. Through such works, Paik brought television and media into the realm of contemporary art while transforming popular media such as music, performance, and broadcast imagery into an artistic language that expanded the boundaries of traditional art.



▲ TV Vertical Flower (2000)

Across from the work is another installation that appears as though televisions have been planted throughout a natural landscape. This is Paik’s “TV Vertical Flower” (2000). Television monitors placed throughout structures composed of flowers and plants play “Global Groove,” (1973) allowing rhythms of music, dance, and imagery from around the world to flow throughout the entire space. The work suggests that television functions not merely as a single screen, but as an element that constructs space itself while proposing the possibility of nature and media coexisting within a shared ecological environment. A woman in her 50s from Cheonan who visited the exhibition said, “I liked the work because it seemed to convey the message that nature and technology can coexist in harmony without destroying one another.” Paik overturns the conventional perspective that views nature and technology as oppositional forces, revealing how media can operate sensorially within ecological spaces.

Lee Bul: Exploring the Tension Between the Individual and Society, Ideals and Reality

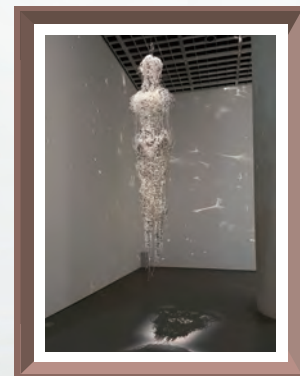
Inside the dark exhibition hall, white sculptures reflect the occasional light entering the room, creating a mysterious atmosphere. At the center of the space stands a sculpture



▲ The Secret Sharer (2012)

resembling fragments bursting from the mouth of a dog-shaped figure. This is “The Secret Sharer” (2012) by Lee Bul, an artist who grew up amid Korea’s political and social transformations while continuously exploring the tensions between the individual and society, ideals and reality. The work recreates the artist’s deceased companion dog, expanding the private experience of loss into a reflection on human existence. The fragments pouring from the figure’s mouth symbolize condensed traces of communication between the artist and her companion animal while also representing the moment when finite life transforms into a lasting form through the passage of time. The reflective crystals and glass fragments mirror the faces of viewers and the surrounding environment, encouraging reflection on the persistence of memory and the conditions of existence in the present.

To the left hangs a sculpture resembling a human figure suspended from the ceiling. This is Lee Bul’s “Crush” (2000). Through representations of the human body, Lee Bul has continuously explored humanity’s longstanding desire for perfection and its limitations. “Crush” made from crystals and glass



▲ Crush (2000)

beads, resembles a knight wearing a shining suit of armor. Although the work evokes the image of an idealized female body, its partially absent form simultaneously reveals an ambiguous state in which completeness and incompleteness coexist. Through a body that embodies both beauty and anxiety, Lee metaphorically presents humanity’s attempt to resist limitations, conditions, and fate.

| Raising Questions About Reality

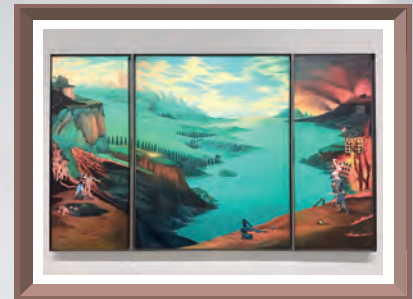


▲ Table of Joy (2025)

Passing through the restrained exhibition space and entering the next gallery, visitors encounter works filled with a wide range of colors. Among them, one work on the right wall immediately stands out for its unfamiliar atmosphere. Although it depicts what appears to be a greenhouse bathed in warm light, the scene simultaneously conveys a strangely cold feeling. Inside the greenhouse, unsettling elements such as human hair and giant forks appear out of place, creating a sense of discomfort and disconnection from reality. Everyday objects are enlarged into monumental forms that assert a powerful presence, while the braided hair stretching across the composition wraps around objects and space, generating tension. This is “Table of Joy” (2025) by Sun Woo. Sun Woo is an artist who explores how technology transforms sensation and everyday life through themes of consumer culture, identity, and the human body. By reconstructing images collected from various sources into digital collages and sketches using Photoshop, the artist creates layered surreal scenes in which different devices and objects coexist. Within these transformed compositions, familiar objects and environments lose their original functions and acquire unfamiliar atmospheres and new meanings. Through this process, the artist questions how the human body, labor, and identity are reorganized within technological environments. In this way, “Table of Joy” layers elements from different contexts within a single scene, simultaneously evoking ideas

of nature and machinery, protection and control, and rest and labor. Through this, the work encourages viewers to reconsider the meaning of familiar living environments and social roles.


Among the various works in the gallery, another piece that immediately captures attention through its striking mint



▲ Post Truth (2023)

color is “Post Truth” (2023) by Yoo Sinae. The work consists of three panels of paintings. Resembling a medieval altarpiece, it visualizes a contemporary environment in which emotions and beliefs take precedence over facts. Different scenes and images are arranged side by side within the composition, suggesting conditions in which truth and fiction are intertwined, while the nonlinear narrative reflects the ways information is produced and consumed. By borrowing the format of an altar traditionally associated with reverence and sublime messages, Yoo layers fragmented images within a single composition. Through this process, the artist explores the moral standards and structures of self-censorship imposed on individuals within capitalist society. Yoo examines the pressure and anxiety individuals experience as they are continuously required to prove their identities within consumer society. In particular, by appropriating and reconstructing images from both popular and subcultural media, the artist traces how people come to believe in and desire certain things while simultaneously reflecting on the conditions of individuals pushed to the margins in the process.

Photos above are taken by Lee Seeun

By bringing together works that explore the relationships between the human body and identity, technology and society, memory and space, the exhibition demonstrates how contemporary art continuously responds to changing social environments and human experiences. Rather than presenting fixed interpretations, the works encourage viewers to reconsider familiar realities from new perspectives while reflecting on the tensions between ideals and reality, humanity and technology, and the individual and society. Through this exhibition, readers may gain an opportunity to think more deeply about the contemporary world and the various questions surrounding human existence through the language of art. 

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The Transformation of Society in the Age of AI

Lee Seeun
Editor-in-Chief

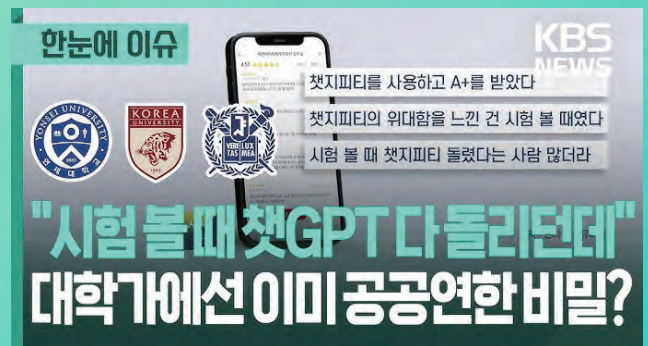
Artificial intelligence (AI) is increasingly becoming embedded in everyday life. From school assignments to simple daily questions, many people have come to rely on generative AI, making it part of their everyday lives. However, AI is now expanding beyond the individual level and reshaping the overall structure of society. In response, governments and companies are seeking ways to adapt to the rapidly changing social landscape. On June 16, “Industrial AX Korea 2026” will be held under the theme, “AI Transformation: Reshaping Industrial Decision-Making Structures,” to discuss ways of applying AI, data, robotics, and automation technologies to actual workplace operations and production systems. In light of these changes, The Argus aims to examine how society is being transformed by the emergence of AI and provide readers with an opportunity to consider how they can respond to the changes ahead.



Changes in Education

Phenomenon Improper Use of AI in Education

Since the emergence of AI, the classroom environment has been changing. Students are using recording tools based on generative AI and actively relying on AI to complete assignments and better understand class materials. Teachers are also utilizing AI in various ways, such as summarizing lesson topics and preparing lesson plans. As AI continues to develop, it is becoming a basic infrastructure for both students and teachers in educational settings. According to a survey conducted by *Nature* in 2024, 86 percent of university students worldwide reported using AI for learning. However, cases of students misusing AI are also increasing. In 2025, group cheating using ChatGPT and other AI tools was discovered during online large-scale midterm exams at Yonsei University and Korea University. In addition, in early November 2025, a high school in Gangseo District, Seoul, discovered cases of students using generative AI to complete performance assessment reports on book summaries. As incidents of AI-related cheating spread even to high schools, debates over educational methods in the AI era intensified.



▲ Students use ChatGPT and other AI tools during online university exams in South Korea.

Does this mean that using AI in education is necessarily harmful? Not entirely. According to “A Meta-Analysis of the Effectiveness of AI-based Adaptive Learning Systems” (2023) by Cha Eun-joo, a master’s student in the Department of Educational Technology at Ewha Womans University Graduate School, the use of AI had significant positive effects on cognitive areas such as academic achievement and problem-solving ability, with stronger effects observed among upper-grade students. This is because AI-based learning is built on self-directed learning, meaning that upper-grade

students, who generally possess stronger abilities to plan and regulate their own learning, tend to show greater improvement in learning performance. However, AI does not have positive effects on everyone. According to “Your Brain on ChatGPT: Accumulation of Cognitive Debt when Using an AI Assistant for Essay Writing Task” (2025) conducted by researchers at Massachusetts Institute of Technology, people who used ChatGPT showed lower brain activity compared to those who did not. This was because participants who used ChatGPT gradually became less engaged while writing essays and, by the end of the study, often relied on copy-and-paste methods. In particular, an analysis of dDTF connectivity, an indicator that measures the strength of information transfer between different regions of the brain, found that the ChatGPT group showed connectivity levels up to 55 percent lower than those of the other groups. These findings suggest that AI can be effective when used to support understanding, but when used for generating outputs such as essays and assignments, it may lead to declines in brain activity and academic performance.

However, many students are currently using AI for tasks focused on generating outputs, which has been shown to negatively affect brain activity, and as this occurrence increases, professors are also facing difficulties in preventing and evaluating this behavior. At the colloquium titled “Students Hiding Behind ChatGPT, Professors Standing Before Them,” held on January 20, 2026, the presenters commonly stated that it is impossible to prevent university students from using AI and that it is meaningless to remain fixated on questioning whether submitted assignments were generated using AI. Professors are also experiencing various difficulties following the emergence of AI, explaining that although many assignments clearly appear to have been generated by AI, they are unable to impose separate sanctions because such criteria were not specified in the grading standards.

Cause The Absence of Educational Methods and Evaluation Policies

What, then, is causing this confusion within the education sector? On February 27, 2026, the Ministry of Education and the Korean Council for University Education held a discussion session to establish ethical guidelines for the use of artificial intelligence. The session introduced a draft version of the “University Artificial Intelligence (AI) Ethical Guidelines” and collected opinions from experts and university officials. The draft was structured around five core principles

— academic integrity, human-centered responsibility, transparency and trustworthiness, fairness, and information protection and security — along with 12 detailed principles. It also included examples of lesson, assignment, and evaluation designs for instructors. However, these guidelines still lack practical effectiveness at the school level. Sun Aekyoung, Research Professor of Innovation Center for Engineering Education of Korea University, explained, “This draft should also be understood as reference material that universities may use when establishing their own guidelines, rather than as mandatory regulations uniformly applied to all universities. Therefore, even after the draft is finalized and announced, the actual level of implementation and specific operations will likely continue to depend on individual universities, colleges, and instructors.”

In this context, professor Sun identified three major reasons why the current guidelines struggle to achieve practical effectiveness. First, although broad agreement may exist regarding ethical principles, there remains a significant gap between these principles and their actual implementation as operational norms within educational settings. Second, even within the same department and required major courses, professors often maintain entirely different standards regarding AI use. Third, universities have continued to regulate only the “scope of use” while leaving the overall structures of assignments and evaluation systems largely unchanged. Professor Sun explained, “For guidelines to become truly effective, the question should not be ‘To what extent can AI be used?’ but rather ‘How should we teach and evaluate students?’ Although the current draft meaningfully expands recommendations to include evaluation design, additional steps that institutionalize and standardize these recommendations at the operational level must follow in order for them to function effectively in actual classrooms.”

Furthermore, another cause of the problem is the lack of effective technology capable of accurately detecting students’ use of AI. According to “Heads We Win, Tails You Lose: AI Detectors in Education” (2026) by Mark Andrew Bassett of the Office of Academic Quality, Standards, and Integrity at Charles Sturt University and seven other researchers, AI detectors designed to identify AI-generated assignments are ineffective, and their technical limitations make them inappropriate for use in educational settings. AI detectors statistically estimate the probability that a text was generated by AI. Therefore, unlike in controlled

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experimental environments, real educational settings lack independently verifiable ground truth data that can confirm whether an assignment was actually written using AI, making it impossible to objectively validate the results. In addition, these detectors are based on the binary assumption that a piece of writing is created either by a human or by AI. However, in actual assignment processes, students often use AI as a supplementary tool at various stages, such as brainstorming ideas, making such binary distinctions inherently contradictory. Although many AI detection programs have been developed, similar to plagiarism detection software, they are not only ineffective, but students also use AI detection evasion tools. As a result, it has become practically difficult to determine how much and in what ways AI has been used.

Prospect Establishing Guidelines to Encourage the Proper Use of AI

If students continue to use AI indiscriminately, various problems may emerge within educational settings. Professor Sun explained, “The most immediate consequence of uncritical AI use is the decline of critical thinking skills.” Although generative AI is known to produce hallucinations that generate plausible but inaccurate information, students often lack the expertise necessary to sufficiently verify the accuracy of such information and may therefore accept it without criticism. Professor Sun also pointed to the phenomenon of the “Normalization of Mediocrity,” in which students gradually become accustomed to average-level AI-generated outputs. While students’ assignments may appear increasingly polished and sophisticated, this does not necessarily indicate deeper learning. Furthermore, excessive AI use may weaken academic integrity and the reliability of evaluation systems, ultimately leading to the “outsourcing of thinking,” in which students increasingly rely on AI throughout their thinking processes.

How, then, can these problems be prevented? In the AI era, simply prohibiting or restricting the use of AI is unlikely to solve the problem. Professor Sun emphasized that future AI guidelines should evolve beyond declarative regulations into practically operable systems. Professor explained, “The quality of guidelines should not be evaluated by the length of prohibited-item lists, but by the clarity of responsibility allocation, the feasibility of source citation and disclosure rules, the specificity of verification and inspection procedures, and the degree to which they are aligned with evaluation standards.” Professor Sun further emphasized, “The core

issue is the clear allocation of responsibility, which requires five principles to function together: transparency, traceability of evidence, verifiability, academic integrity, and responsible use.”

At the instructor level, the permitted scope of AI use should be clearly presented according to functional categories such as idea generation, structuring, draft writing, sentence revision, and data analysis, while students’ records and disclosure of AI use should also be reflected in evaluation standards. Educational methods for students must also change. Students should internalize the process of checking AI contributions, verifying the sources of AI-generated information, and reviewing potential errors as part of their learning activities. Professor Sun added that behavior-based documentation tools such as “Large Language Model Usage Reports” or AI self-assessment checklists should be actively utilized for this purpose. Regarding the value of these tools, professor Sun explained, “They can transform AI ethics from the burden of rule compliance into learning norms that promote learners’ metacognition and self-regulation.”

Furthermore, Reducing differences in AI guidelines among universities and establish minimum common standards at the policy level is also needed. Risks such as information leakage, copyright issues, bias, and inaccuracy are difficult to manage solely through individual caution, stressing the need for governance systems that integrate support, education, and monitoring through regular instructor training, continuous AI literacy education for students, procedures for reviewing and responding to high-risk situations, and periodic updates to university-approved AI tool lists. Professor Sun also noted that future government-level AI guidelines should move beyond simple declarations of principles and develop toward standardized, implementation-oriented regulations.

Changes in Labor

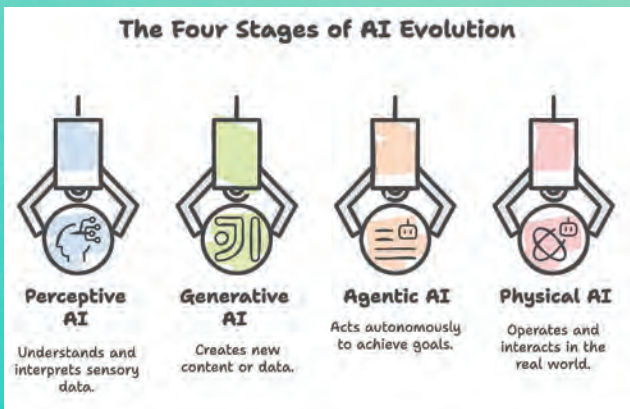
Phenomenon The Restructuring of Labor

As AI technology develops exponentially, people are becoming increasingly anxious about whether their current jobs will continue to exist in the future, while younger generations are facing growing concerns about employment. What kinds of jobs, then, will disappear because of AI, and what new types of jobs will emerge? The development of AI is no longer limited to the evolution of a specific technology, but is expanding into a structural transformation that is reshaping labor and the industrial order as a whole. With the introduction



▲ An AI-based customer service chatbot system demonstrates how AI automates responses and information retrieval processes.

of AI, the automation of repetitive tasks such as chatbots that automatically respond to customer inquiries, AI systems that classify and summarize documents, and systems that analyze data in real time to generate reports has already become widespread. In addition, Agentic AI, which can support complex decision-making with a certain degree of autonomy and function as a personal assistant, has become an everyday workplace tool. AI has recently expanded beyond software into Physical AI, systems that can act and interact in the real world, and is now at the stage of practical testing and early deployment.



▲ A diagram illustrates the four stages of AI evolution: Perceptive AI, Generative AI, Agentic AI, and Physical AI.

According to the Corporate Informatization Statistics Report released in January 2025 by the Ministry of Science and ICT and the National Information Society Agency, the AI adoption rate among domestic private companies in Korea with 10 or more employees reached 30.3 percent as of the end of 2023. In particular, adoption rates were especially high in finance at 52.4 percent, information and communications at 49.5 percent, and educational services at 48.7 percent. In the finance and insurance industry, AI is being used in various fields such as robo-advisors, robotic process automation, and fraud detection

systems. In the information and communications industry, AI services are being utilized for research and development and business management processes. As AI is introduced into practical workplaces, labor structures are being reorganized through both the replacement of existing labor and the creation of new forms of work. According to data released by the Bank of Korea in October 2025, of the 211,000 jobs lost among people aged 15 to 39 over the past three years, 208,000, accounting for 98 percent, were concentrated in industries highly affected by automation and AI adoption. This reflects a trend in which the risk of replacement is increasing for low-skilled and entry-level workers, while demand is growing for highly skilled workers and those capable of utilizing AI.

The problem is that this restructuring of skill-based labor centered on job replacement is causing severe employment instability and difficulties for young people entering the labor market. Youth unemployment in the first quarter of 2026 reached a five-year high. According to March employment trend data released on April 15 by the National Data Agency, the average number of employed people during the first quarter reached 28.938 million, an increase of 183,000 compared to the previous year. However, employment among young people aged 15 to 29 decreased by 156,000.

Cause AI-Driven Automation and the Restructuring of Skill-Based Labor

The biggest reason AI is restructuring labor is that it can perform repetitive and predictable tasks at a much lower cost and at a much faster speed than humans. In particular, following the development of generative AI, AI can now handle not just simple calculations but cognitive tasks like document writing, information summarization, and data analysis. According to the 2023 report “The Potentially Large Effects of Artificial Intelligence on Economic Growth” published by the American global investment bank Goldman Sachs, generative AI could affect approximately two-thirds of current labor tasks, with structured office work such as administrative support, accounting, legal administration, and customer service being especially vulnerable to automation. This is because AI can process rule-based tasks more quickly and efficiently than humans.

Another reason AI is replacing labor is that technological change operates not at the level of entire occupations, but at the level of individual tasks within occupations. According to “A Study on Estimating the Possibility of Job Replacement

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Due to Work Automation Caused by Technological Development and Policy Measures” published by the Korea Information Society Development Institute, labor replacement caused by technology occurs differently depending on the specific tasks within a job rather than the occupation itself. In other words, even within the same profession, repetitive and standardized tasks are highly likely to be automated, while tasks requiring judgment, face-to-face communication, and creativity are relatively less likely to be replaced. In “Prospects for the Restructuring of Industry and Employment Caused by Digital Transformation Including Artificial Intelligence (AI),” released on November 12, 2024, the Ministry of Employment and Labor noted that simple repetitive tasks face the highest replacement risk, particularly among office workers, sales staff, machine assemblers, and manual laborers.

The reason young workers are affected first in this process is that the tasks typically performed by people entering the workforce are concentrated on entry-level and standardized work that can easily be replaced by AI. “AI Expansion and the Decline of Youth Employment: Focusing on Seniority-Biased Technological Change” (2025) published by the Bank of Korea explains that AI is primarily replacing repetitive entry-level tasks such as organizing data, responding to customers, and drafting documents rather than replacing mid- and high-career workers whose experience and expertise have accumulated over time. In contrast, highly skilled work requiring problem-solving abilities, social interaction, and decision-making skills tended to be complemented by AI rather than fully replaced. In other words, AI is not replacing all forms of labor equally, but is selectively automating standardized and repetitive tasks first. As a result, low-skilled and young workers are being affected more significantly within the labor market.

Prospect Expanding Job Transition and Retraining to Adapt to the Labor Market

In the future, the restructuring of labor caused by AI is expected to accelerate even further. According to the “Future of Jobs Report 2025” published by the World Economic Forum, 86 percent of companies worldwide predicted that AI and information-processing technologies would change the way businesses operate by 2030. In addition, occupations such as AI and machine learning specialists, big data specialists, and fintech engineers are expected to grow rapidly, while jobs centered on repetitive tasks, such as data entry clerks, administrative assistants, and simple office workers, were

classified as occupations with a high likelihood of decline. This shows that the future labor market will not simply experience a reduction in the number of jobs, but that the required job competencies themselves may shift toward AI utilization and data interpretation skills.

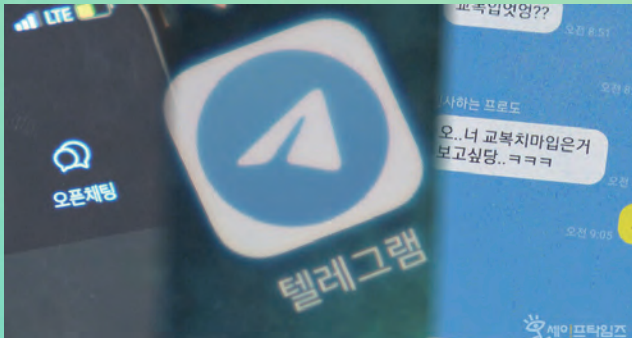
Accordingly, the important task is not to reduce labor that can easily be replaced by AI, but to transition jobs in ways that allow workers to work alongside AI. According to the 2024 report by the Ministry of Employment and Labor, AI was identified as the digital transformation technology expected to have the greatest impact on future employment. The report also found that if digital technologies are successfully introduced, the scale of employment is expected to decrease by 8.5 percent within five years and by 13.9 percent within 10 years. In particular, the food and accommodation industry and the transportation and logistics industry are expected to experience especially large declines in employment. Therefore, in response to the expansion of AI, it is necessary to identify which jobs will decrease and which new jobs will be required in each industry, while also providing retraining and job transition support tailored to these changes.

Training opportunities that help young people become AI-capable workers are expected to grow increasingly important. According to the 2025 report published by the Bank of Korea, the early stage of AI expansion showed a seniority-biased technological shift in which employment for new and junior workers decreased, while employment for senior workers with greater experience and expertise increased. However, the same report also found that even in industries with high exposure to AI, youth employment declined relatively less in sectors where AI was more likely to assist humans rather than replace them. Ultimately, the goal is not to leave young people roles vulnerable to AI displacement, but to develop them into complementary workers capable of improving productivity through the use of AI.

In other words, AI’s impact on labor should be understood not simply as job loss, but as a restructuring of both jobs and the skills they require. While repetitive and standardized tasks are likely to decrease, the need for workers who can understand, utilize, and review AI-generated outcomes will continue to grow. Therefore, rather than attempting to prevent the development of AI technology itself, the key challenge for the future labor market will be establishing education, job transition, and industry-specific workforce reallocation policies that help young and low-skilled workers adapt to changing job structures.

Changes in the Forms of Crime

Phenomenon The Rise of Crimes Utilizing AI



▲ Telegram, a cloud-based messaging platform, appears in relation to the Inha University group deepfake crime case involving the distribution of illegal AI-generated videos.

Since the emergence of AI, anyone can easily generate digital media such as images, videos, and audio. Consequently, along with the development of AI, various new forms of crime have also begun to emerge. In April 2025, the “Inha University Group Illegal Deepfake Case” occurred. From November 2022 to August 2024, Mr. A and others at Inha University created around 90 fake videos targeting 17 female university acquaintances and distributed them approximately 270 times through Telegram, a cloud-based secure messaging application. As a result of the case, the perpetrators were sentenced to one year in prison during the first and second trials held in June and November 2024. Additionally, according to data from the Korean National Police Agency, the number of reported sex crimes involving the production of sexual exploitation materials using deepfake technology reached 1,202 cases in 2024 alone, representing an approximately seven- to eightfold increase from 156 cases in 2021.

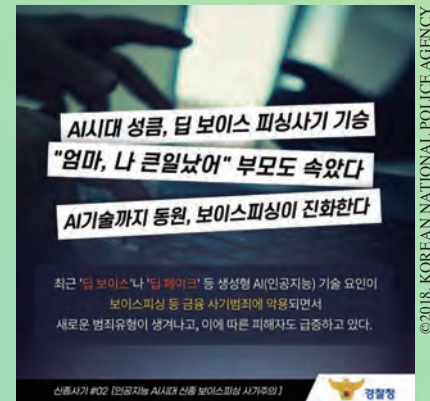
AI is also increasingly being used not just for image generation but also for voice phishing crimes. Previously, voice phishing was mainly carried out through simple methods such as impersonating prosecutors or other professionals. However, following the emergence of AI, these crimes have evolved into far more sophisticated forms by precisely replicating the voices of victims’ family members. In 2023, in Busan, a woman in her 60s received a phone call claiming that her daughter had been kidnapped, and she transferred 20 million won (US\$13,326.76) after believing the voice she heard was her daughter’s. However, it was later revealed that the voice was not actually her daughter’s, but an AI-generated deepfake voice. The Financial Supervisory Service issued a consumer alert regarding voice phishing scams using deepfake voice

technology, including cases in which criminals manipulated a child’s crying voice with AI and threatened victims by claiming that their child had been kidnapped and demanding money. In “Cyber Threat Outlook 2026,” the Ministry of Science and ICT and the Korea Internet & Security Agency identified AI-based cyber threats, attacks exploiting cloud vulnerabilities, secondary voice phishing using leaked personal information, and the growing risk of smishing as major threats.

Cause Regulatory Ambiguity Surrounding AI-Generated Content

One of the main reasons these phenomena have occurred is the lack of effective regulation. On January 22, 2026, the Act on the Development of Artificial Intelligence and the Establishment of a Foundation for Trust, commonly referred to as the Framework Act on Artificial Intelligence, officially came into effect. However, critics have continued to argue that the law lacks practical effectiveness.

With the rapid advancement of generative AI technology, deepfake sex crimes in which a person’s face is superimposed onto explicit imagery have risen sharply, emerging as a new form of sexual violence that seriously infringes upon victims’ personal rights and sexual self-determination. In response, the government came to recognize that the previous legal standard requiring “the intent to provoke sexual desire or humiliation” made it extremely difficult to prove criminal intent when perpetrators claimed their actions were “simple jokes” or “artistic creations.” In addition, there had been no legal concept broadly encompassing crimes committed through AI technology. To prevent digital sex crimes exploiting deepfake technology, the government revised the Act on Special Cases Concerning the Punishment of Sexual Crimes in 2020. The revision amended Article 14-2, Paragraph 1 of the law to state that “a person who creates, edits, synthesizes, or processes sexual image materials



▲ A public warning image highlights AI-based voice phishing crimes that use deepfake voice technology to imitate family members’ voices.

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created by synthesizing or manipulating another person's sexual image, face, or body (hereafter sexual digital forgeries) without the victim's consent, while recognizing or being able to recognize that such actions may cause sexual humiliation, sexual insult, or sexual degradation to the victim, shall be punished by imprisonment for up to seven years or a fine of up to 50 million won (US\$33,316.90)." Through this revision, the government expanded the legal scope from simple filmed materials to "sexual digital forgeries" and from filming itself to acts of synthesis and manipulation, demonstrating efforts to prevent digital sex crimes exploiting deepfake technology.


However, institutional mechanisms capable of fundamentally blocking such crimes have still not been sufficiently established, resulting in the continued increase of AI-related crimes. In the past, video synthesis and voice manipulation required professional skills and equipment. Today, however, ordinary users can easily synthesize other people's faces, voices, and images through generative AI programs. The September 2, 2024 article "What Is the Fundamental Cause of the Deepfake Epidemic?" published by *Hankyoreh* pointed out that although the misuse of deepfakes can be regulated through individual laws such as the Act on Special Cases Concerning the Punishment of Sexual Crimes or the Public Official Election Act, it remains difficult to fundamentally block the use of the technology itself. The article also explained that because deepfake-generated materials can be continuously and repeatedly reproduced, responding through deletion requests to Internet service providers is also challenging.

Prospect Platform Regulation and Technological Prevention

How, then, can digital crimes utilizing AI be prevented?

In order to prevent AI-based digital crimes, strengthening preemptive blocking systems at the generative AI platform level is becoming increasingly important. In fact, generative AI service companies are introducing safeguards that restrict users when prompts or uploaded images are likely to be used for illegal purposes such as producing pornography, fraud, or generating false information. For example, OpenAI has stated in its policy documents that it prohibits sexual deepfakes, the creation of non-consensual explicit materials, and voice imitation for fraudulent purposes, while blocking requests that may violate these policies.

In addition, the development of technical detection systems is also expanding. The Korea Internet & Security Agency is advancing AI-based deepfake detection and digital sex crime response technologies, while the Korea Communications Standards Commission operates a 24-hour deletion support system for deepfake sexual exploitation materials. Accordingly, rather than focusing only on punishment after crimes occur, strengthening the responsibilities of AI platform operators and establishing international cooperation systems are expected to become increasingly important in the future. "Foreign Legislation and Implications Regarding AI-Based Deepfakes" (2024) by Choi Jin-eung, a legislative researcher at the National Assembly Research Service, explained that other countries are expanding policies such as mandatory labeling of deepfake-generated content, strengthening platform operators' responsibility for deletion, and regulating AI-generated materials during election periods. This demonstrates that responses to AI-related crimes are shifting away from focusing solely on punishing individuals and toward platform regulation and technological prevention.

AI is rapidly reshaping the structure of education, labor, and even crime, bringing both new opportunities and serious social challenges. While AI has improved learning accessibility and workplace efficiency, it has also raised concerns over academic misconduct, employment instability among young workers, and increasingly sophisticated digital crimes such as deepfakes and AI-based voice phishing. However, these problems do not stem from the technology itself, but from society's lack of sufficient systems, guidelines, and institutional responses to manage it effectively. As AI advances, the key challenge will not be whether to reject or embrace it, but how to help people to use it responsibly and adapt to the changes it brings. 

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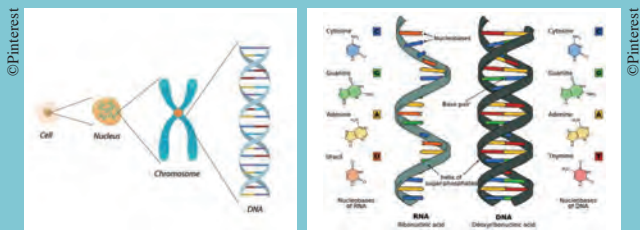
Editing a Better Tomorrow: Mechanisms of Gene Editing Technology

By **Kim Yi-eun**
Editorial Consultant

What if all babies are born tailor-made according to their parents' wishes, with customized appearance, intelligence, and health? What if a time comes where no one suffers from intractable diseases? Such a world is possible through gene editing technology. Commonly referred to as genetic scissors, gene editing is a technology that recognizes and cuts or corrects specific target areas of a gene. It is highly acclaimed as a solution to disease, food shortages, and energy issues, being utilized for treating genetic and intractable diseases, as well as improving plant and animal breeds. Gene therapy technology using base editing was selected in the life sciences sector for the 10 Breakthrough Technologies of 2026, an annual list compiled by the Technology Review of the Massachusetts Institute of Technology. Under what principles can genes be manipulated in this way? The Argus aims to enhance readers' understanding of gene editing technology by examining the biological mechanisms utilized in gene editing, the technologies involved, and the ethical dilemmas surrounding them.

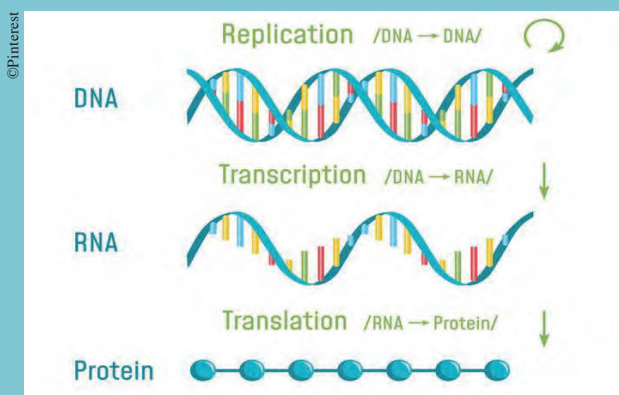
Principles of the Human Body Utilized in Gene Editing Technology

What is a Gene?



▲ DNA locates inside the cell nucleus. ▲ DNA features a double-helix structure, whereas RNA possesses a single-stranded structure.

Humans have their own unique characteristics, such as appearance, constitution, and health. It is genes that give rise to these characteristics. The human body is made up of cells, and inside the cell nucleus lies Deoxyribonucleic Acid (DNA), which stores and transmits the genetic information of a living organism. DNA is shaped in a twisted double-helix structure containing four types of bases: adenine (A), thymine (T), guanine (G), and cytosine (C), and biological traits are determined by the sequence of these bases, which are small molecular pairs that form the connections between the two strands. As such, a gene is an information sequence located at a specific part of DNA; the human body utilizes this base sequence to form cells and produce proteins necessary for maintaining organic life processes. Protein is one of the components of the human body and plays critical roles, including the growth and maintenance of body tissues, as well as the generation of enzymes and hormones.



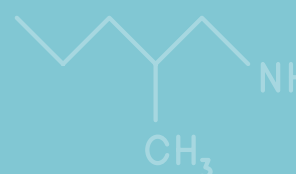
▲ The sequential processes of transcription and translation produce protein.

The genetic information stored in DNA utilizes Ribonucleic Acid (RNA) to produce proteins that can express these specific traits. Unlike DNA, RNA is a single strand that contains the base uracil (U) instead of T. The very first step in making a protein is copying the genetic information required to produce a specific protein inside the nucleus. Messenger RNA (mRNA) copies the genetic information from DNA inside the cell nucleus and transmits it. The reason genetic information can be accurately transmitted during this transcription process lies in the principle of complementary base pairing. As the DNA double-helix unwinds, it uses one strand as a template, where each base pairs exclusively—A with T, and G with C. Subsequently, the process of translation from RNA into protein takes place in the cytoplasm, a space inside the cell, rather than inside the nucleus. The mRNA exits the nucleus and moves into the cytoplasm, which is enclosed by the cell membrane. The cytoplasm contains various cellular organelles, including the nucleus, which contains DNA, and ribosomes, which are organelles responsible for protein synthesis. Here, the mRNA binds with a ribosome, which reads the mRNA bases in groups of three, known as codons, and sequentially assembles the corresponding amino acids to create a protein.

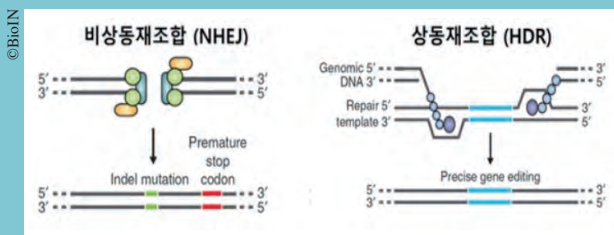
The DNA base sequence is highly sophisticated, making it simultaneously fragile. If even a single part of the billions of base sequences is altered or missing, the RNA that copies it will transmit incorrect information. As a result, proteins essential to the human body are either not produced or abnormal proteins are created, leading to diseases such as genetic disorders and cancer. To fundamentally treat these diseases, it is necessary to edit genes to prevent the generation of abnormal proteins. That is why researchers are focusing on gene editing, which involves artificially correcting errors in DNA to enable cells to produce normal proteins.

The Self-Repairing Characteristics of Cells

Gene editing technology alters traits or disease states by inducing modifications such as removing, correcting, or inserting genes at specific locations. Tools commonly referred to as “genetic scissors” recognize a specific



DNA sequence to induce a double-strand break (DSB) in the DNA strands, exploiting the cell's trait to repair this damaged DNA to guide the generation of desired mutations during the repair process. The broken DNA strands are repaired through two mechanisms: non-homologous end-joining (NHEJ) and homology-directed repair (HDR). Because the NHEJ repair mechanism simply joins broken DNA ends together, random base insertions or deletions can occur during this process. Gene therapy approaches that utilize this NHEJ repair mechanism include gene knockout.



▲ The repair mechanisms of HDR and NHEJ drive successful gene therapy.

Originally, genetic information possesses a reading frame grouped into units of codon, owing to the system where a sequence of three bases forms a single amino acid. However, if insertions or deletions of bases occur during the NHEJ process, this rule of reading the frame is disrupted. This triggers a frameshift mutation, where the reading frame of the DNA is shifted forward or backward. As a result, normal proteins cannot be synthesized, causing the gene to lose its function. Treatments utilizing the knockout method capitalize precisely on this mechanism. By intentionally inducing a frameshift, an error in the cell's natural repair process, scientists can turn off the gene's function, thereby blocking the expression of disease-causing proteins. This approach can be employed when the over-expression of a specific protein is the primary cause of a disease. The DNA fragment deletion method is utilized as a means to either induce the knockout or restore the disrupted reading frame to recover the function of damaged genes. This technique employs two guide RNAs (gRNAs), nucleic acid molecules that help recognize the target DNA sequence, to cleave both ends of a specific segment simultaneously; the intervening DNA fragment

is then removed, and the remaining ends are rejoined via the NHEJ pathway. In the case of diseases arising from a broken reading frame, the system restores normalcy by removing the exon segment, the region containing the amino acid information that harbors the problematic genetic code. As a result, genetic scissors induce cellular errors to cause a knockout, turning off the gene's function, and by inserting a donor template containing the desired genetic information, it is possible to induce a knock-in.

Unlike NHEJ, which removes genes, the HDR pathway is used for gene editing or insertion. Knock-in is a method that inserts new genetic information through the HDR repair mechanism following DSB. Unlike NHEJ, a donor template containing the sequence to be inserted must be introduced simultaneously with the genetic scissors. Depending on the scope of editing, this template is delivered as a single-stranded oligodeoxynucleotide for minor mutations, or in the form of a plasmid or viral vector for large sequence insertions. This enables the precise insertion, deletion, and substitution of bases. However, it only occurs at specific stages of the cell cycle – the process from a cell's formation to its next division – resulting in significantly low efficiency. Additionally, HDR does not occur in differentiated cells where cell division has ceased, nor in organs such as the liver or brain. In other words, while the NHEJ pathway offers rapid repair, it does not rely on a repair template and simply joins the broken ends, which induces various modifications in the gene sequence. Conversely, based on the principle of complementary base pairing, the HDR pathway enables accurate repair via the template strand, which serves as the basis for determining the nucleotide sequence during the synthesis of nucleic acids, which encompasses both DNA and RNA.



The Process of Delivering Genetic Scissors into Cells

Where Does Gene Editing Take Place?

For gene editing to occur, the genetic scissors must be delivered inside the cell. Gene editing methods are broadly classified into two categories based on the location

where the editing takes place. There are *ex vivo* editing, a method where genes are corrected with genetic scissors outside the body and then reintroduced, and *in vivo* editing, where genetic scissors are delivered directly into the body. In *ex vivo* editing, cells are extracted from the body, and the mutations are removed and corrected using genetic scissors in a culture dish and then the modified cells are infused back into the body. While *ex vivo* gene correction carries relatively fewer safety concerns, such as side effects, it is limited to specific types of cells that can retain their original functions once returned to the body, because the cells have to be cultured and manipulated outside the body. This requires keeping the target cells alive outside the body while delivering the genetic scissors to induce the correction, and then reintroducing them into the body for successful engraftment. Due to these characteristics, in reality, its application is restricted to certain cells, such as stem cells and immune cells, which are capable of being cultured outside the human body. In particular, a technology that uses gene-edited blood cells as a therapeutic agent after re-infusing them has been commercialized.

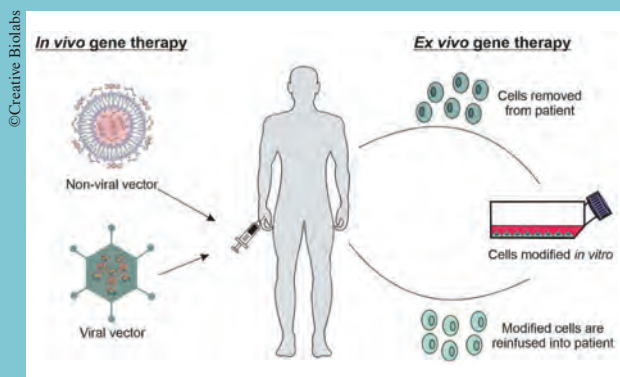
On the other hand, for diseases originating in organs such as the liver or brain, it is practically impossible to extract the tissues of the organs from the body for treatment. Therefore, these conditions must be treated using *in vivo* editing technology, a method where genetic scissors are introduced directly into the body, specifically administered to the target tissues or organs, to eliminate and correct mutations. Although the *in vivo* approach offers a

significantly broader scope of application than *ex vivo* technology, a method to precisely deliver genetic scissors to specific organs throughout the body has not yet been fully realized. Consequently, rigorous safety validations are required to address side effects and the risk of off-target effects, where genes unrelated to the disease may be inadvertently edited.

Genetic Scissors Entering the Cell Nucleus Through Delivery Vectors

For genetic scissors to function, they must enter the nucleus of the cell where the target DNA resides. It can be delivered into the body in various forms, such as DNA, RNA, or proteins. However, biomolecules such as DNA or proteins struggle to cross the cell membrane on their own. The cell membrane is composed of a phospholipid bilayer, so the interior of the membrane is hydrophobic with affinity for oil, while the surface of the membrane carries a negative charge. Conversely, these molecules are hydrophilic and have an affinity for water, and genetic materials like DNA and RNA also carry a negative charge. Furthermore, because the molecular size is too large to penetrate the membrane, it is difficult for genetic scissors to cross into the cell in their raw form. Therefore, genetic scissors reach the cell nucleus through delivery vectors. Gene delivery methods can be broadly categorized into those that use viral vectors and those that use non-viral vectors.

First, the method utilizing viral vectors exploits the natural process by which viruses infect cells. Viruses, which are microorganisms composed of genetic material and a surrounding protein coat, use their surface proteins to attach to specific cells, fuse with the cell membrane, and inject their genetic material inside. Once inside, the viral DNA or RNA, which carries the information necessary for viral replication, hijacks the host cell's functions by utilizing its transcription, translation, and replication machinery to synthesize viral genetic materials and proteins, allowing the virus to replicate. Genetic scissors are delivered into the body by capitalizing on these very characteristics of viruses. For safety reasons, certain essential genes are removed from the viral genome to limit viral replication and eliminate its pathogenicity; instead,



▲ Gene therapy methods include *in vivo*, which injects the genetic scissors into the body, and *ex vivo*, which injects cells into the body after editing them outside the body.

the genetic information to be delivered is inserted.

Viral vectors are broadly classified into DNA viruses and RNA viruses based on the type of nucleic acid they contain. Adeno-associated virus (AAV), adenovirus (AV), and herpes simplex virus (HSV) are widely used as DNA viral vectors. Among them, AAV is the most prominent and widely utilized for in vivo gene delivery due to its high expression efficiency across various cells and its stability. However, since the maximum transfer size is limited to 4.7 kb,* there are limitations to carrying large genetic scissors. On the other hand, while AV can deliver up to approximately 7.5 kb, it carries the risk of triggering an acute immune response upon entry into the body. Because many individuals have already been exposed to AV, which typically causes common cold symptoms accompanied by eye discharge. HSV can carry a size of about 20 kb and is advantageous for treating neurological disorders due to its ability to specifically infect the central nervous system. However, like AV, most people have a history of HSV infection, which causes symptoms of cold sores, and this leads to reduced efficiency due to an immune response.

Retro viruses and lentiviruses, which are RNA viral vectors, can deliver a size of up to 8 kb. While retro viruses offer sustained gene expression, they exhibit lower delivery efficiency in vivo. Conversely, lentiviruses allow for regulated expression depending on the target cells and have low immunogenicity. However, RNA viral vectors have the tendency to insert DNA into the main chromosome, which could potentially cause unexpected mutations. Consequently, in vivo genome editing research primarily utilizes AAV for stable gene delivery considering the location and safety of the target cells, HSV for specifically infecting the central nervous system, and lentiviruses to target neurons because they do not provoke an immune response. Although viral vectors demonstrate high delivery efficiency into infected cells, safety concerns regarding immune responses, vector-induced mutagenesis, and toxicity, along with the restrictions on cargo size, remain unresolved.

Non-viral vectors offer the advantages of easy manufacturing, relatively low concerns regarding immune responses, and no limitation on the size of the genetic

material they can deliver. The most widely used non-viral vector is the lipid nanoparticle (LNP). Composed of cationic lipids, LNPs exhibit a high capacity to penetrate cell membranes and possess low antigenicity; they were notably utilized in COVID-19 vaccines such as those from Pfizer and Moderna. Other methods include electroporation, which delivers genes into cells using electrical shocks, and the gene gun method, which coats genetic material with microscopic metal particles and shoots them into cells. Unlike viral vectors, non-viral vectors lack viability and cannot persist in the body for long periods. Consequently, this lowers the probability of off-target effects, where genetic scissors remain inside the cell and inadvertently cleave other unintended genes.

*Kilobase (kb): It is a unit of measurement for the length of the chain of bases that make up nucleic acids; 1,000 bases equal 1 kb.

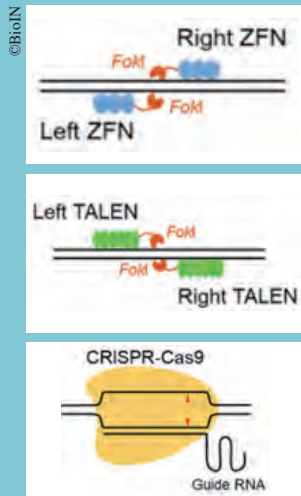


Gene Editing in Practice

Evolution of Gene Editing Technologies by Generation

In the early 1960s, the discovery of restriction enzymes existing in nature opened up new possibilities for gene editing. Restriction enzymes are enzymes that recognize specific base sequences in double-stranded DNA and cleave those sites or their surrounding regions. Gene editing technology has continuously evolved, improving both accuracy and efficiency based on the methods used to recognize target DNA and the enzymes used to cut it. Following the first-generation Zinc Finger Nucleases (ZFNs) and the second-generation Transcription Activator-Like Effector Nucleases (TALENs), the third-generation Clustered Regularly Interspaced Short Palindromic Repeats/CRISPR-associated endonuclease 9 (CRISPR/Cas9) system is now the mainstream technology.

The first-generation gene editing technology features genetic scissors created by fusing zinc finger proteins, which recognize target DNA base sequences, with the FokI restriction enzyme that induces DSBs. The term “zinc finger” originates from a finger-shaped protein structure



▲ The schematic diagrams illustrates first-, second-, third-generation gene editing technologies.

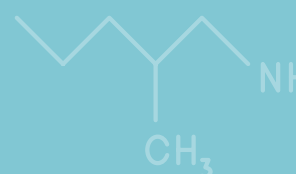
holding a zinc ion, which was discovered during genetic research on the African clawed frog. By combining this structure with the FokI restriction enzyme, a technology capable of simultaneous DNA recognition and cleavage was developed. Since the early 2000s, it has gained significant attention by opening up new possibilities for treating genetic disorders such as hemophilia, Alzheimer’s disease, and

AIDS. However, this approach was limited by high costs driven by the complex processes required to design and produce the proteins. Second-generation gene scissors were developed in 2010, which utilize TALEN proteins and the FokI restriction enzyme to recognize and cut DNA. While they share a similar structure to ZFNs, they feature certain improvements in terms of design and production. This system was engineered by fusing the FokI restriction enzyme with TAL, a gene-recognition domain discovered in the plant pathogen *Xanthomonas*. Because the sequence of constituent amino acids in TALENs corresponds to the target DNA base sequence on a one-to-one basis, modifying the system to target specific DNA becomes far more straightforward simply by adjusting the amino acid sequence. This technology contributed significantly to creating disease models for conditions like hepatitis C and hypercholesterolemia. However, just as with the first generation, the process is complex and costly because a new protein had to be designed for each target gene. Furthermore, its low editing efficiency made it difficult to obtain desired genetic mutations, and limitations persisted regarding its simultaneous application to a large volume of genes.

Third-generation gene-editing technology, which emerged in 2012, is currently the most widely used. Unlike previous generations that relied on protein structures to locate DNA

and employed the FokI restriction enzyme for cleavage, the third-generation CRISPR/Cas9 system utilizes a gRNA to recognize the target DNA sequence, while the Cas9 protein cleaves the designated site. The Cas9 protein is a type of restriction enzyme that cuts specific viral DNA in the CRISPR system, an adaptive immune response used by bacteria to prevent reinfection by viruses. This technology can be applied to treat diseases such as sickle cell anemia, Huntington disease, and color blindness. The CRISPR technology offers dramatically high editing efficiency, and because it lacks complex protein structures, it is easy to design and manufacture, as well as highly cost-effective. However, the DSB carries risks of structural variations, such as chromosomal instability and large-scale deletions. Furthermore, while genetic scissors recognize and cleave specific target sequences, there remains the limitation of off-target effects; out of the billions of base pairs in the human body, the system can misread similar sequences and inadvertently edit unintended sites. To overcome these limitations, next-generation editing technologies are rapidly emerging, aiming to minimize DSBs, reduce off-target effects, and improve delivery efficiency to achieve greater precision, safety, and scalability.

According to a report, *Next-Generation Gene Editing Technologies and Market Trends (2026)* by the National Biotech Policy Research Center, six major next-generation DNA rewriting technologies were highlighted: prime editing, base editing, epigenome editing, bridge RNA, seek RNA, and gene writing. Single-base editing, known as base editing, does not induce DSBs, freeing it from the risks associated with complete DNA cleavage. This technology allows for the replacement of a single base without causing a DSB, specifically by substituting C and A with T and G, respectively. Consequently, diseases caused by a single-base mutation can be effectively treated using this method. However, it carries the drawback that all bases within a specific range from the genetic scissors, a region referred to as the “window,” are substituted indiscriminately, raising concerns about RNA off-target effects. Furthermore, its application scope remains limited because it can only substitute bases without the ability to insert or delete them, and it is restricted solely to converting C and A into T and G. Prime editing has




emerged as a solution that similarly avoids DSBs while successfully enabling all forms of base modifications, including deletions, insertions, and substitutions. Instead of using a separate donor template as seen in HDR, this system integrates the template function directly into the gRNA, creating a prime editing gRNA (pegRNA). Capable of executing all 12 possible combinations of base conversions, prime editing is highly anticipated as a potential treatment for 90 percent of known genetic diseases. Nevertheless, it faces constraints regarding large-scale insertions, and challenges persist in optimizing pegRNA design as well as improving in vivo delivery efficiency. In addition, active research and development are underway for other advanced platforms: bridge RNA technology, which uses RNA to simultaneously recognize two DNA fragments to perform large-scale genomic rearrangements; epigenome editing, which turns gene expression on or off via methylation and histone modification without altering the underlying DNA sequence; gene writing, which allows for the insertion of large-scale, gene-sized sequences; and seek RNA, which can independently execute targeted cleavage and insertion using only small RNA molecules and proteins.

Applications of Gene Editing Technology

Gene-editing technology is currently opening up new horizons for the treatment of diseases, including intractable ones. Currently permitted gene-editing technologies are limited to cutting, editing, and inserting DNA for therapeutic purposes after birth. Prime Medicine, a biotech company of the United States, has treated a teenager suffering from chronic granulomatous disease, a rare disorder, using prime editing technology. The treatment involved correcting the patient's blood stem cells outside the

body and then reinfusing them, resulting in the restoration of immune function just one month after treatment. In some countries, such as the U.S., advancements in gene editing technology and the approval and application of gene therapies are proceeding more actively. In contrast, South Korea (hereafter Korea) has imposed restrictions on the approval of gene therapy clinical research and trials. Lim Donghyun, a professor of the Department of Bioengineering at Hanyang University, explained, "It is not that there is a lack of technology or that gene therapies are too risky to be widely used. Rather, commercialization and clinical application are relatively delayed because Korea reviews the introduction of these therapies usually after the U.S. Food and Drug Administration, which leads in gene editing technology, approves them and verifies the safety."

However, applying this technology at the embryonic stage raises ethical dilemmas. Until now, there has been only one documented case of babies born from genome-edited embryos. In 2018, a Chinese scientist He Jiankui sparked intense global debate by modifying genes to grant immunity against the Human Immunodeficiency Virus (HIV), resulting in the birth of the world's first gene-edited babies. There are still scientific challenges to be addressed regarding gene editing at the sperm, egg, or embryo stage. Professor Lim explained, "In the case of embryo editing, since the process involves removing specific genes rather than correcting a disease, one cannot predict what impact this will have in the future, so long-term follow-up is necessary." Furthermore, it raises ethical dilemmas regarding the artificial manipulation of the genes of unborn embryos. Beyond treating diseases, there are concerns that indiscriminate genetic designing could lead to the creation of custom-made babies.

Gene editing technology, which began as research into the minute mechanisms of the human body, now offers a key to treating human diseases and holds great promise. However, the power to artificially manipulate the human genome comes with not only technological advancements but also ethical responsibilities. Moving forward, clear regulations and consensus will be necessary, alongside scientific advancements in this technology. 

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The Price of Power: Inside Shift to Regional Electricity Pricing

By Cho Subin

Editor of Theory & Critique Section

Is it truly fair for electricity rates to be the same across all regions? Until now, electricity rates have been the same in Seoul and in Dangjin City, South Chungcheong Province, where power plants are concentrated in South Korea (hereafter Korea). However, considering the entire process from power generation to transmission, it may be fairer to reflect the costs incurred during the production process in the price. The government now plans to change the method of calculating electricity rates to impose different rates by region. In June 2024, the enactment of the Special Act on Activation of Distributed Energy established the legal basis for this change. Two years later, in June 2026, the government plans to announce detailed guidelines for the regionally differentiated electricity rate system following the local elections. With the implementation of this system approaching, The Argus aims to analyze the pros and cons of the regionally differentiated electricity rate system to encourage critical thinking among readers.

Before Reading

Regionally Differentiated Electricity Rate System

The regionally differentiated electricity rate system currently being promoted in Korea is based on the Locational Marginal Price (LMP) method and centers on setting different electricity rates for each region. Currently, electricity rates are calculated using the System Marginal Price (SMP) method, which determines the wholesale price based on the variable costs of the last power plant needed to meet hourly demand. The LMP's main components are the marginal energy cost, marginal congestion costs, and marginal loss costs. Unlike the United States and Sweden systems, Korea's regional pricing is specifically designed to resolve inter-regional energy bottlenecks. The goal is to reduce electricity demand concentration in Seoul and correct regional imbalances in self-sufficiency, ultimately incentivizing industrial relocation to non-metropolitan areas.





The Bright Side of the LMP

⚡ Marginal Energy Cost: Market Efficiency and Social Welfare Optimization

Once the regionally differentiated electricity rate system is implemented, each region’s marginal energy costs will be directly reflected in its electricity rates. Previously, the electricity supply curve was set by considering all power generators nationwide, and the electricity demand curve was set by considering the total national electricity demand. Consequently, the varying generation costs and demand levels across regions were not fully reflected in electricity rates. Excluding renewables, Seoul’s entire generation capacity consists of liquefied natural gas (LNG) plants. LNG emits far fewer air pollutants than coal or oil, though at higher fuel costs; because of these lower emissions, Seoul – a densely populated area – relies on renewables and LNG.

In contrast, 28 of the nation’s 74 coal-fired power plants are located in South Chungcheong Province, and 81 of the 216 oil-fired power plants are in South Jeolla Province, as of 2024 – a result of siting thermal plants in low-density coastal areas. When electricity demand at a given location increases by 1 megawatt (MW),* power generators are deployed to the market in order of lowest marginal cost, defined as the cost of the generator that is deployed last to balance supply and demand. Since North Gyeongsang Province and South Jeolla Province are dense with nuclear and coal plants, which carry low marginal generation costs, generators in these regions become the marginal units that set the clearing price.

In contrast, LNG plants often serve as the marginal generators in urban areas with high demand density. Under the previous single nationwide SMP, Seoul’s marginal cost was uniformly applied to rates across the country – meaning factories in North Gyeongsang Province, where generation costs are low, bore LNG costs incurred in low self-sufficiency regions.

However, Under the LMP system, electricity prices are determined by supply and demand curves specific to each region’s generation and demand volumes. The marginal



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▲ An LNG power plant in Seoul operates with underground facilities to reduce pollutant emissions.

cost of energy – the cost of balancing regional supply and demand – is thus calculated per region, accurately reflecting the economic value of local generation resources. Consequently, decoupling marginal energy costs by region allocates each region’s actual generation costs solely to its own rates, improving distributional efficiency and raising social welfare.

From a welfare economics perspective, this constitutes a Kaldor-Hicks improvement – a change where the gains to beneficiaries exceed the losses to those disadvantaged, making it theoretically justifiable. With the LMP, the benefit of lower rates for consumers in regional areas is likely to exceed the burden of higher rates in the Seoul metropolitan area, yielding a net welfare gain.

*Megawatts (MW): A unit of electrical power equal to one million watts.

⚡ Marginal Loss Costs: Industry-Driven Regional Revitalization

As generated electricity is transmitted through the grid, resistance causes it to be lost as heat; the cost incurred during this process is known as marginal loss cost. The electricity rate that maximizes social welfare is equal to the marginal cost of generation in each region. The difference in LMPs between regions fundamentally stems from variations in regional marginal energy costs, which, when expressed mathematically, are represented as the sum of marginal loss costs and marginal congestion costs.

Marginal loss costs arise because regions with low self-sufficiency rates have relied on long-distance transmission to draw electricity produced in regions with high self-sufficiency rates. As of January to July 2025, North Gyeongsang Province’s electricity self-sufficiency rate was 262.6 percent, and South Jeolla Province’s was 208.2





percent, meaning they produce more than double their consumption. In contrast, Seoul's self-sufficiency rate is 7.5 percent and Daejeon's is 3.3 percent, meaning they procure most of their required electricity from other regions. This is because demand in Seoul and Daejeon exceeds their generation capacity, whereas other regions generate more electricity than they consume. Nevertheless, until now, factories in North Gyeongsang Province and those in Seoul have paid the same electricity rates.

However, power losses inevitably occur as electricity generated at power plants travels through transmission lines. These losses are dissipated as thermal energy. According to Joule's First Law, these losses are proportional to the resistance of the conductor and the square of the current flowing through it; therefore, they can be reduced by lowering either the resistance or the current. Among these, the method of reducing current intensity – which involves using transformers to increase voltage and thereby reduce current, in accordance with Ohm's Law* – is already in use through ultra-high-voltage transmission, leaving limited room for further improvement.

Therefore, the most viable remaining lever is shortening the physical transmission distance itself. Lower electricity rates in regions already close to generation sources could instead incentivize power-intensive industries – such as steel, cement, displays, and non-ferrous metals – to relocate there, revitalizing the local economy. Yet expanding the transmission network is no quick remedy: according to Korea Electric Power Corporation (KEPCO), domestic projects average 13 years to complete – the line between North Dangjin and Sin Tangjeong, South Chungcheong Province, took 22 years, with site selection alone exceeding 10.

According to German economist Max Weber's theory of industrial location, a company's decision on where to locate is determined by a complex set of factors, including labor costs, land costs, logistics accessibility, tax incentives, and energy costs. Among these, energy costs act as a key variable directly affecting product costs, particularly in power-intensive industries. In fact, Hyundai Steel, while considering the construction of a steel mill in the U.S. to counter U.S. tariffs, chose

Louisiana due to its low electricity rates. Louisiana possesses abundant and inexpensive energy resources, attracting a concentration of companies in energy-intensive sectors such as petrochemicals and oil refining. In an interview with *The Korea Economic Daily*, Park Ju-heon, a professor of economics at Dongduk Women's University, cited electricity rates and the competitiveness of transmission and distribution networks as the decisive factors distinguishing Japan, India, and Taiwan – which have attracted dozens of global Big Tech data centers – from Korea, which has been treading water.

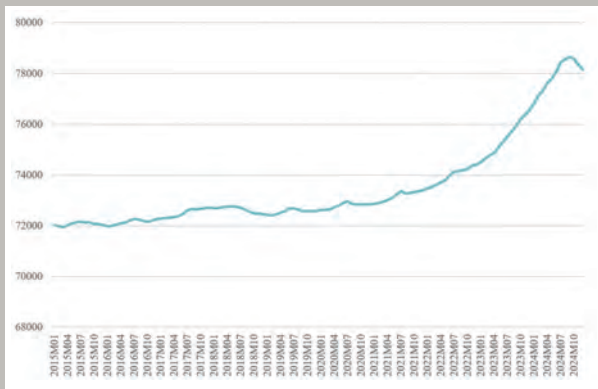
British neoclassical economist Alfred Marshall posited that when a specific industry clusters in a particular region, agglomeration economies begin to take effect and argued that when companies in the same industry cluster in one region, three externalities automatically emerge. A pool of skilled labor specialized in that industry is formed; suppliers of intermediate goods and components become concentrated, reducing transaction costs; and technology and information naturally spread among companies. When these three effects interact, a virtuous cycle is formed in which the productivity of individual companies increases as production facilities cluster together, leading to the formation of regional industrial clusters and the revitalization of the local economy through job creation.

In 2017, Skelleftea in northern Sweden attracted Northvolt's first European battery gigafactory – a location decision that Hakan Appelblad, a professor at the Department of Geography at Umea University, attributes primarily to the region's "available and reliable sources of fossil free electricity – hydro power – at favourable prices." Those prices reflect a structural advantage: Sweden operates a four-zone regional electricity pricing system, and Skelleftea sits within SE1, the northernmost zone, where abundant hydropower generation consistently keeps wholesale prices below those of the more densely populated southern zones. The investment drew further business to the city, and the population grew by 1,009 in 2022 – the largest increase in 50 years – and by a further 2,140 in 2023, earning Skelleftea recognition as one of Sweden's fastest-growing cities. Hanna Strom, a professor at the Department of Economics at Umea School of





Business, Economics and Statistics, adds land costs as a complementary driver, noting that “land is probably relatively cheaper on average in SE1 compared to the higher population density regions of SE3 and SE4 – and Northvolt required quite much land for its factory.” This observation translates directly to the Korean context: regions surrounding power plants – typically low-density areas with abundant idle land – stand to gain similar locational appeal under a differentiated pricing regime.



©SCB

▲ Announcing its Skelleftea factory in 2017 and completing its first commercial battery cell delivery in May 2022, Northvolt triggers a sharp population surge in the city.

*Ohm's Law: It is law of physics discovered by a German scientist Georg Simon Ohm, which states that when voltage and resistance are constant, current is inversely proportional to voltage.

🔊 Marginal Congestion Costs: Market-Driven Grid Efficiency

When transmission demand peaks during specific time periods while electricity is being transmitted, the amount of power flowing through transmission lines reaches the capacity limit of the lines. Marginal congestion costs arise when power generation must be reduced or halted due to such congestion. As discussed earlier, the difference in LMPs between regions consists of the sum of marginal loss costs and marginal congestion costs, with marginal congestion costs being the second component of this difference. This is because, when congestion occurs, sufficient power cannot be transmitted from regions with low-cost generators to high-demand regions, causing each region to operate as if it were an independent grid.

Unlike marginal loss costs, which occur whenever

power is transmitted, marginal congestion costs arise only when transmission constraints materialize. Currently, marginal congestion costs in Korea are steadily increasing. According to the Korea Power Exchange's *Electricity Market Statistics* (2024), the share of constraint settlement charges – additional costs resulting from grid congestion – in total electricity trading settlements doubled from 2.6 percent in 2019 to 5.4 percent in 2024. Effective management is essential, as failure to manage grid congestion could, in the worst-case scenario, lead to power outages.

If these marginal congestion costs are reflected in electricity rates, the severity of congestion in specific sections will be quantified. Until now, KEPCO has purchased electricity at a uniform wholesale price nationwide and sold it at a uniform retail rate, so marginal congestion costs have not been reflected as price signals to the outside. However, once the LMP is implemented, this information will be disclosed to the entire market, and marginal congestion costs will help identify where transmission infrastructure needs to be expanded. Economically speaking, prices serve as signals that convey information to market participants.

Once marginal congestion costs are communicated as a signal, the market can take action to either expand transmission infrastructure to reduce marginal congestion or reduce electricity demand during peak hours. First, the government can use marginal congestion cost data to visualize infrastructure investment plans. Once sections with severe congestion are identified, the concept of congestion-based investment prioritization from power economics can be applied, which makes the profitability of power grid infrastructure investments visible.

To reduce peak-hour electricity demand, companies gain an incentive to invest in Energy Storage System (ESS) technology – enabling charging during off-peak hours, typically early morning, and discharging during peak hours, thereby reducing power flow through transmission lines. Growing ESS demand will contribute to diversifying the Korean battery industry's revenue structure, enhancing its global competitiveness. The sector has relied heavily on electric vehicle batteries, but has now entered a “chasm”





© LG Energy Solution

▲ LG Energy Solution and other Korean battery makers invest in ESS which enables more efficient energy storage and management.

mainstream consumers, making revenue diversification an urgent priority.

– a period of stagnant demand – as the electric vehicle market transitions from early adopters to

The Dark Side of the LMP

⚡ Marginal Energy Costs: Local Double Compensation Conflicts

The LMP also carries potential negative impacts. As marginal energy costs are factored into rates, concerns have been raised that residents in areas with high concentrations of power plants may face double compensation under existing schemes. The lower rates extended to high self-sufficiency regions are intended to compensate for the burden of hosting power plants – particularly for residents of South Chungcheong Province, where half the nation’s coal-fired plants are located, and of Jeolla and Gyeongsang Provinces, where nuclear plants are situated, all of whom already bear the burden of noise and air pollution.

The harms fall into three categories. First, residents near transmission towers report health problems from high-voltage electromagnetic fields. Second, transmission tower construction causes home and land values to plummet, halting transactions and impairing property rights. Third, areas with high concentrations of thermal power plants face health hazards from air pollution. In economics, losses imposed on third parties – such as residents near transmission lines – by the construction of power generation facilities are described as “external diseconomies,” and the costs incurred are called “external costs.”

Given that laws and regional policies compensating residents near power plants already exist, the lower rates

could constitute double compensation and distort resource allocation. Under the Act on Assistance to Electric Power Plants-Neighboring Areas, residents within 5 kilometers of a plant receive compensation including income-generating projects, health examination costs, and electricity bill subsidies. Basic support project costs are calculated in proportion to power generation, with unit rates of 0.25 won (US\$0.00017) per kilowatt-hour (kWh) for nuclear power and 0.15 won (US\$0.0001) per kWh for bituminous coal applied annually, ensuring that compensation is paid continuously as long as the power plant remains in operation.

In his paper, “A Study on Win-Win Approaches to Solve the Unbalanced Electricity Demand and Supply between Regions,” (2016) Lim Byeong-in, a professor in the Department of Economics at Chungbuk National University, assesses that this support system – which includes items that are merely income subsidies – is already being operated at a level that exceeds the scope of social marginal damage caused by power generation. Even acknowledging that it is difficult to make precise estimates of the social damages caused by power generation in regions such as South Chungcheong Province, the argument is that these damages are effectively being compensated for under the law.

Academic opinions diverge here. Some argue that the Act on Areas Surrounding Power Plants already functions as a Pigouvian subsidy compensating for the social harms of facility siting, and that extending further compensation through lower rates would constitute double compensation within the same region – potentially incentivizing power plant attraction beyond the socially optimal level or misallocating compensation funds. Others counter that the two systems address fundamentally different externalities: the Act targets social harm from nuisance facility siting, whereas the regionally differentiated rate corrects economic inefficiency arising from supply-demand imbalances – making their objective functions distinct.

The controversy carries real political stakes. Under the proposed three-tier classification – Seoul Metropolitan Area, non-metropolitan regions, and Jeju Province – Incheon, with a self-sufficiency rate exceeding 180 percent, would be grouped with high-rate metropolitan areas





despite generating far more electricity than it consumes, while Daejeon, with the nation’s lowest self-sufficiency rate, receives lower rates simply by virtue of its non-metropolitan classification. This highlights the potential for the controversy over double compensation to escalate beyond a mere academic debate into a political conflict that undermines the very design of the system.



©Incheon Chamber of Commerce and Industry

▲ In response to uniform LMP application across the Seoul metropolitan area, Incheon holds joint forums and pursues countermeasures.

⚡ Marginal Loss Costs: Regional Rate Gaps Weigh on Households and SMEs

Electricity rates are expected to rise in regions with low self-sufficiency rates, increasing the cost burden on industries and small and medium-sized enterprises (SMEs) that consume large amounts of electricity but cannot easily relocate to lower-rate regions. According to the Korea Economic Association’s report, “Introduction of a Regional Differential Electricity Tariff System: Ripple Effects by Industry and Implications” (2024), the LMP is expected to create an interregional wholesale electricity price gap of 19 to 34 won (US\$0.013 to 0.023) per kWh. Depending on the extent to which this gap is passed on to retail prices, the annual electricity cost burden for the entire manufacturing sector in the Seoul metropolitan area is estimated to increase by at least 800 billion won (US\$53,148,552) to a maximum of 1.4 trillion won (US\$93,009,966), with the electronics and telecommunications sectors alone expected to bear an additional burden of up to 600 billion won (US\$3,986.14).

SMEs unable to relocate will be the hardest hit. Large corporations can absorb cost increases through self-generation and distributed generation investments; SMEs

lacking that financial capacity must bear the higher transmission costs directly. With limited capital, their only options are passing increased production costs onto prices or enduring deteriorating profitability. If the electricity rate hike leads to weakened price competitiveness, SMEs will face a double burden, finding it difficult to relocate or respond effectively.

The impact of the electricity rate hike will not be confined to affected companies but could spread to overall inflation. Professor Lim’s study predicted this inflationary ripple by assuming producers pass the full cost increase onto consumers. If industrial electricity rates in Gyeonggi Province rose by 9 percent, the Producer Price Index (PPI) – which measures prices of goods and services traded between businesses – would rise by an average of 0.29 percent in Gyeonggi Province, with the effect extending nationally to raise the PPI by 0.11 percent.

Generally, the PPI tends to serve as a leading indicator of the Consumer Price Index (CPI). As producer prices rise, the CPI – which reflects prices of goods and services purchased in daily life – is also expected to rise by an average of 0.35 percent in Gyeonggi Province. Higher electricity rates raise producer prices through increased production costs, which are passed on to consumers, ultimately shifting the burden of the rate hike onto low-income households. Professor Lim’s estimates represent an upper bound, however, premised on full cost pass-through and no adaptive adjustment by firms – conditions that diverge from observed market behavior – and the actual impact may therefore be considerably smaller.

Beyond the firm level, there is evidence that the burden of rising electricity tariffs may propagate across the broader regional economy. A paper by Yu Jung-min, Woo Youngjin, and Yoon Cho-rong, researchers of The Seoul Institute, *Analysis of the Industrial and Economic Impacts of a Regional Differential Electricity Pricing System on Seoul and Strategies for Response* (2025) projects negative economic consequences for Seoul when both industrial and general-use tariffs are raised simultaneously. Specifically, a maximum tariff increase of 3.27 won (US\$0.0022) per kWh relative to 2021 baseline prices is estimated to reduce Seoul’s induced production output, value added, and employment by 23.842 billion won (US\$15763135.92),





12.059 billion won (US\$7972806.64), and 182 jobs, respectively.

⚡ Marginal Congestion Costs: Renewable-Driven Management Expenses

As the share of renewable energy increases, the range of electricity cost fluctuations companies must bear under the LMP structurally widens. This could conflict with Korea's policy direction, which targets a renewable generation share of over 20 percent by 2030, as outlined in the "National Sovereignty Government's Energy Grand Transition Promotion Plan" (2026) by Korean Government. Renewables such as solar and wind are intermittent – output swings sharply with weather conditions, driving greater congestion cost volatility. During periods of abundant output, generation costs fall and the regional LMP is low; when output drops, expensive generators are brought online and the LMP spikes. A higher renewable share makes this pattern both more frequent and more severe.

The output variability of renewable energy and grid congestion discussed above are not novel phenomena – both represent sources of systemic uncertainty that predate the introduction of LMP. Professor Song Jae-do, Chonnam National University, College of Business Administration observes that "The total quantity of uncertainty remains constant; what changes is how that uncertainty is allocated between suppliers and consumers." In other words, when retail tariffs are allowed to fluctuate in response to cost movements, uncertainty is transferred to consumers; when tariffs are fixed, it falls on the supplier. While a large-scale utility such as KEPCO is arguably better positioned to

absorb such uncertainty than smaller market participants with limited adaptive capacity, this structural feature nonetheless represents a meaningful disadvantage of LMP from the standpoint of tariff stability.

This issue has already been quantified in domestic research. According to *A Study on Transmission and Distribution Network Usage Fee Regulation Methods to Induce Efficient Investment in Power Facilities* (2022) by Kim Seungwan, a professor in the Department of Energy Engineering at the Korea Institute of Energy Technology, when the share of renewable energy reaches 30 percent, significant transmission constraints are expected to arise, and the difference in LMP between regions is projected to widen to approximately 17 won (US\$0.011) per kWh. Based on the average monthly electricity consumption of 51,022 kWh per unit in February 2026 for the cement industry – one of the most electricity-intensive sectors – this would result in approximately 870,000 won (US\$577.99) in additional costs per month. The study also found that if the share of renewable energy exceeds 40 percent, the regional disparity would widen further, with prices reaching 118 won (US\$0.078) per kWh in Seoul and 97 won (US\$0.064) per kWh in North Jeolla Province. This implies that as the share of renewable energy increases, the price gap between regions with concentrated low-cost power generation and demand centers will structurally widen. The fact that most of the country's solar power facilities are concentrated in the southern region – a structure where congestion costs are concentrated during sudden changes in output – further exacerbates this uncertainty. This creates a paradox where the more renewable energy is expanded, the lower the predictability of the investment environment becomes.

Electricity pricing may seem like a technical matter best left to engineers and regulators, but its implications reach far beyond the grid. The LMP system carries genuine promise, but those benefits are not automatic. They depend on how faithfully the system is designed and implemented. A mechanism misunderstood by policymakers or misapplied in practice will not deliver what its architects intended. As Korea moves forward, the gap between LMP's theory and real-world execution deserves as much attention as the policy itself. 📧

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The Right to Die, A Beautiful Farewell?

By Kim Yi-eun

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Today, the number of countries around the world that permit assisted dying is on the rise, with Switzerland as the only nation that extends this right to foreign nationals. Amidst this global shift, discussions are actively ongoing in South Korea (hereafter Korea) as well, regarding a “dignified death,” for instance, a bill on assisted dying, proposing that terminally ill patients be allowed to end their own lives with medical assistance if they desire, was introduced in June 2022. In an era of increasing life expectancy, often referred to as the “100-year life era,” the public discourse has expanded. It is no longer merely about the question of how long we will live, but rather about the values of how to live and, ultimately, how to die. The focus extends beyond simply living well to encompass dying well as well. The Netflix series *You and Everything Else* (2025) captures this societal reflection. The story begins when Sang-yeon, diagnosed with terminal cancer, asks Eun-jung to accompany her on her final journey. Eun-jung and Sang-yeon are two women who admired, envied, and loved each other, yet at times harbored inferiority and resentment because of it. Through their relationship, this drama explores the story of those who choose a dignified death and those left behind.



The Right to Refuse Suffering

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▲ Eun-jung and Sang-yeon visit the site where the assisted dying will take place.

Faced with unbearable pain in a life with a predetermined end, Sang-yeon chooses to go to Switzerland. “Is it such a great sin or such greed to want to die without any more pain, while I still know who I am? Don’t I at least have the right to refuse suffering?” Sang-yeon’s line raises the issues of “human dignity” and “the right to self-determination,” which today’s discourse on assisted dying focuses on. While medical advances have extended human life expectancy, treatments are sometimes continued solely to prolong life, even when a person is unconscious or unable to control their own body. An extension of life does not inherently mean an extension of a high quality of human life. Sang-yeon does not desire a mere extension of life. For her, death is not an escape, but a final choice to uphold her own dignity. It is about ending

one’s life on one’s own terms, while one’s self and mind remain intact, before being shattered by pain. There are many Sang-yeons in the real world as well. Many patients with no hope of recovery are demanding the right to end their lives with dignity through their own choice. However, as in Korea, where patients can only choose to refuse life-sustaining treatment, many countries still face institutional and societal barriers to the acceptance of assisted dying. Debates continue to rage over questions such as who life-sustaining treatment is truly for and whether it is right to grant individuals the right to self-determination regarding their lives.

Review

Sang-yeon's choice is also deeply intertwined with the deaths of her family members. Having closely watched her brother take his own life in the freezing mountains, and her mother struggle in pain with illness before passing away, death approached Sang-yeon as a source of fear and helplessness. Thus, the option of Switzerland, where she could choose assisted dying, was a "consolation" for her. Rather than powerlessly fading away in agonizing pain and losing her true self, the fact that she could close her eyes in peace, accompanied by her beloved friend, was enough for her to say, "No one dies happier than I do." Sang-yeon's lines portray assisted dying not as a tragedy or a source of sorrow, but as a process of well-dying. It is not an end brought on by the pain of illness, but a dignified ending of her life, chosen by herself. Assisted dying is not merely a tool that makes it easier to die. Rather, it is to grant individuals control over the final stages of their lives. If death is viewed not as something to fear or as a catastrophe to be avoided, but as a chapter that can be planned and brought to an end as a part of life, perhaps true "well-dying," maintaining one's dignity until the very end, becomes possible.



Beyond the Right to Die

For Eun-jung, Sang-yeon's request to accompany her on her journey to die after reappearing after ten years, feels cruel and selfish. Already distraught by the news that her lifelong friend, with whom she has been inseparable since childhood, has terminal cancer, Sang-yeon's plea is simply too much for Eun-jung to bear. When Sang-yeon says she wants to die "while I am still me," Eun-jung, filled with resentment and anger, holds her back, saying, "Don't go to Switzerland. I will be right here with you." Eun-jung's reaction sheds light not only on the perspective of those making the choice but also on that of those left behind in the discourse surrounding assisted dying. Unable to let Sang-yeon go alone, Eun-jung ultimately decides to accompany her to Switzerland. However, having resolved to be with Sang-yeon in her final moments, Eun-jung grieves so deeply that she wakes up crying even in her sleep. "I did not know it would be like this. I did not know it would be this scary. What it means to go there. How frightening and terrifying it is. I only realized it after I said I would go," Eun-jung's confession reveals the fear faced by those who witness death up close.

In Switzerland, the two go about their daily lives as if they were simply on vacation. While joking around, Eun-jung says, "I am going to kill you," but stops short. It shows that through this journey toward death, the weight of death has finally come to feel different. On Sang-yeon's last night, while Sang-yeon sleeps, Eun-jung goes out alone onto the terrace and cries. Her tears carry the weight of the sorrow and guilt borne by someone who must witness a friend's death. Eun-jung stays by Sang-yeon's side until her very last moment. "It took a long time. Until I could place your photo on my desk. Until I could say goodbye to you." Eun-jung's lines reveal the sorrow of the one left behind. Before leaving, Sang-yeon tells Eun-jung, "You must not feel any guilt." The guilt, fear, and sorrow Eun-jung feels for having helped her close friend through her final moments are burdens she must bear entirely alone after Sang-yeon is gone. While the right to die may be a decision made by oneself, it is also a shared reality that places a heavy burden of emotional endurance and responsibility on those left behind.



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▲ After Sang-yeon leaves, Eun-jung gazes at the sea alone.

Assisted dying goes beyond the individual's right to end their own life; it encompasses the countless interconnected relationships involved, the responsibilities it places on those left behind, and even the burdens and sacrifices they will have to bear in the future. While the drama highlights Sang-yeon's choice and right to die with dignity, it also addresses the perspectives of those left behind, not only the person who is passing away, but also the weight that the bereaved must carry with them for the rest of their lives. As this drama reflects the profound issues our society faces, it is now time for a broader and more active discussion on the issue of dignified death. The discussion must encompass not only whether to permit such choices, along with the criteria and scope for doing so, but also concerns about potential abuse and the establishment of legal boundaries. 📺

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★ The Fear of the Blank Page ★



“There was a wall. It did not look important.” So begins Ursula K. Le Guin’s *The Dispossessed: An Ambiguous Utopia* (1974). Le Guin continues, “Like all walls it was ambiguous, two-faced. What was inside it and what was outside it depended upon which side of it you were on.” She is talking about a physical boundary between two planets, which have two irreconcilable political orders, but she might as well have been writing about the internet in 2026.

The contemporary political landscape feels, at its worst, like a regression to the most ancient of intellectual habits: Dualism. Left or right. Us or them. The spectrum of opinions has been flattened into a choice between two extremes, and then those extremes have been sharpened into weapons. This is probably not a new observation, but what is new is the infrastructure that makes this “flattening” preferable. As a matter of fact, it is algorithmically incentivized.

This algorithmic flattening thrives by exploiting a fundamental human vulnerability: the need to reduce cognitive dissonance. Psychologist Leon Festinger first

described cognitive dissonance in 1957 as the psychological discomfort that arises when a person holds two conflicting beliefs simultaneously. Humans, he argued, are motivated to resolve this discomfort. While the internet, of course, did not create this tendency, companies saw this as an opportunity and turned it into a profitable business model.

Through personalized “filter bubbles,” The platform does not show you what is true or what would challenge your view. It shows you what will keep you clicking, and what keeps most users engaged, it turns out, is content that confirms their existing worldview and flatters their sense of righteousness.

However, research into echo chambers has found that these are not merely passive environments of like-mindedness. Studies of online forums show that members engage with opposing points of view specifically to reframe them, reinforcing the ideological position of the group. This is cognitive dissonance reduction operating at scale, fueled by the attention economy.

What emerges is an intellectual laziness masquerading as political engagement: ideological bandwagoning dressed up as conviction. It is easy, in an environment of infinite doom-scrolling, to mistake the most upvoted opinion for the correct one, and when we want something more substantial to back up what we already believe, we reach for texts, for literature, for philosophy. This, however, where something goes particularly wrong.

In a recent video essay, critic Jacob Geller poses an interesting question: why does everyone think George Orwell’s *1984* agrees with them? Conservatives invoked it to condemn censorship by social media companies when the President of the United States was, at last, banned from posting. Progressives invoke it to critique surveillance capitalism and authoritarian governments. Every conceivable political faction has, at some point, pointed to Big Brother and said: *that is what they are doing to us*. Geller’s argument is not merely that people are misreading *1984*. The novel’s central concepts have been stripped from their original contexts and rendered into concepts available for anyone who needs them. Orwell, a democratic socialist who fought fascism in Spain and despised Stalinism, has been recruited into armies of people whose politics he would have found, to put it charitably, perplexing.

This is not a problem unique to Orwell. It is the universal condition of a text that achieves cultural saturation without requiring comprehension. The words outlast their context. What we are witnessing in our current political discourse is not so much a battle of ideas as a battle of citations. The question is no longer *what did this author really mean?* but *can I make this author appear to support what I already believe?*

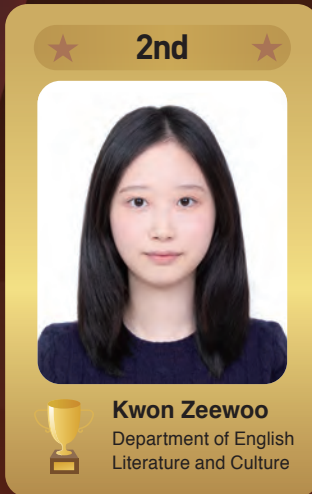
Le Guin understood this dynamic with remarkable precision. In *The Dispossessed*, the physicist Shevek moves between two worlds: the anarcho-communist moon Anarres and the capitalist planet Urras. What he finds is that both societies have constructed ideological walls so thick that their inhabitants cannot conceive of alternatives. Anarres, for all its revolutionary idealism, has calcified into its own kind of orthodoxy. Urras, for all its material abundance, is a world of people who cannot see their own prison.

The critique Le Guin levels at this Cold War binary is not far apart from our current digital culture. The dualism is comfortable. It requires no imagination for the alternatives. It offers the satisfaction of knowing which side of the wall you are on and knowing that the people on the other side are wrong.

Shevek, in Le Guin’s novel, makes a journey that no one in either of his worlds wants him to make. From every perspective, to cross that boundary is to risk becoming either a traitor or a cynic, but it is also to become, for the first time, a person capable of seeing both sides from neither side.

We are now basically outsourcing the ability to think. We have built machines for avoiding that dreadful experience of “not knowing.” Now more than half the online discourses I see are filled with uncanny opinions that either seem to miss the context or fully believe in hallucinated ‘facts.’ All while the concepts like collective intelligence and common knowledge matter less and less, even when the internet at first glance feels like a perfect place for realizing them. If anything, maybe internet speed should be a little slower, so there can be a nice pause, an empty page where no oddity is considered lesser in comparison to practically anything at all.

More Than an Algorithm and Why Echo Chambers Are Built by Human Choice



No one likes to be attacked. In the modern world, this “attack” is rarely physical. Instead, it manifests as a disagreement on social media or a challenge to our worldview. Often, our brains are wired to equate being wrong with being unsafe or even unworthy. We process information not just for truth, but to protect our status within our “tribe.” This primal instinct for safety explains why people seem to actively enjoy echo chambers. Then why does disagreement feel so threatening that people would rather stay inside a filtered bubble? And how did we get there? While we often blame technology, this essay argues that these filtered bubbles are not merely the product of algorithms; they are a psychological and geographic choice rooted in the fusion of belief and identity.

To understand why disagreement feels like an existential threat, we must first examine how identity is formed. Our beliefs are deeply fused with who we are. Our upbringing, social circles, and even mundane hobbies shape our worldview. However, when our identity is based on “fragile interests” such as being a fan of a boy band or girl group, our sense of self becomes unstable. We rely heavily on people who share this love, and if that group is criticized, it feels like our world is collapsing. This fragility scales up when we attach our identity to authority figures. We often see people defend politicians or “guardians of societal structure” even in the face of contradictory evidence. We make excuses for their lies because the thought of being on our own in a chaotic world is too scary. Admitting our “side” is wrong means risking our social support system, leading to a state of “affective polarization.” Here, disagreement is no longer about policy; it is about a fundamental dislike of the “other” as a person.

This social division has a physical history that predates the internet, a phenomenon documented in Bill Bishop’s *The Big Sort*. Bishop reveals the untold story of why modern society is so ideologically inbred that people often cannot understand those living just a few miles away. Historically, geographic division was not intentional; mid-20th century neighborhoods were politically diverse, with liberals and conservatives co-existing. However, the increased affluence and mobility of the 1960s changed everything. As people gained the ability to choose where to live, they began to seek communities out of their hometowns to match their tastes and values. Conservatives, for example, chose Dallas, Texas, where they had hometown football and liked the presence of large churches, while liberals found a home in Austin, Texas, filled with art, music communities, and college towns. The shift also influenced information. Before the sort, every neighbor, regardless of their political view, relied on the same daily

newspapers and national broadcasts. However, as the polarization increased, liberals chose MSNBC while conservatives turned to FOX News, both consuming books and radios to match their political views. As Bishop famously noted, we now live in a “giant feedback loop,” where our thoughts on right and wrong are bounced back to us by the television shows we watch and the neighborhoods we inhabit. This physical isolation created the “dry wood” of social division; if we lived in diverse physical neighborhoods, a single post on Facebook would not be enough to brainwash us. However, because we already live in “Blue” or “Red” bubbles, the digital world simply confirms what we see every day at the local coffee shop.

In this context, social media acts as a “digital multiplier.” While the “big sort” physically clustered us over decades, digital platforms merely amplify the boundaries we have already chosen to draw in our physical lives. This creates a digital version of the “sorted” neighborhood, a phenomenon illustrated by the Wall Street Journal’s “Blue Feed, Red Feed” project in 2016. By presenting side-by-side Facebook feeds of a “liberal” and a “conservative” viewing the same news, the project revealed that two people can inhabit the same digital space but live in different realities: where one saw a “protest,” the other saw a “riot.” These filtered bubbles ensure that our news is pre-processed to keep our identity safe. From zip codes to cyberspace, we have lost our common ground.

This absence of a shared reality prevents us from seeing those who disagree with us as neighbors; instead, we view them as threats from a different world. This is why admitting a mistake no longer feels like a part of learning but like an act of surrender to the enemy. The solution requires a transition from an “identity of certainty”—thinking I am right because of who I am—to an “identity of inquiry.” We must become people who seek the truth even when it hurts our beliefs. This requires a commitment to reflexivity. We must accept that our entire lives are shaped by the biases of our experiences, our religion, and our upbringing. True objectivity may be an impossible goal, but acknowledging our biases is the first step toward mitigating them.

Practically, we can start small. We must “clean our feeds,” recognizing that social media acts as a mirror for our biases rather than a window to the world. We must also strive to understand the counterpoint as clearly as our own. Otherwise, we risk viewing different ideas as inherently wrong, which only further fuels polarization. Ultimately, the echo chamber was never a mere accident of algorithms; it was a reflection of the walls we built around our neighborhoods and our identities. If our own psychological and geographic choices created these bubbles, we alone have the power to walk out of them. Only then can we truly dismantle the architecture of division.

Who Owns Your Feed?

Reclaiming Digital Sovereignty in the Age of Surveillance Capitalism



Most people do not spend an evening adjusting the light, grain, and color of a photo simply to satisfy an app. A student editing a seaside picture until it carries a quiet, almost Japanese cinematic mood is not only producing content. A dancer recording the same K-pop cover again and again is not merely feeding a trend. For many young people, digital platforms have become the places where taste, friendship, ambition, and identity are made visible, yet the same platforms that host this creativity quietly turn it into data. Every pause on a reel, every search, every saved outfit reference, and every song used in a short video can become part of a behavioral profile. That is why digital sovereignty should not be treated only as a state's control over servers or networks. In this essay, digital sovereignty refers to the practical ability of individuals to understand how their data is used, refuse exploitative extraction, move between platforms, and challenge algorithmic systems that shape their visibility. Without that ability, privacy becomes a slogan rather than a real right.

Shoshana Zuboff (2019) describes the economic logic behind this system as “surveillance capitalism:” the conversion of human experience into raw material for prediction and profit. While some data is necessary for basic functionality, the problem is that current collection practices are excessive, invisible, and rely on a major knowledge imbalance. Users see a clean interface and a personalized feed; companies see thousands of signals about attention, mood, habits, and vulnerability. Acquisti, Brandimarte, and Loewenstein (2015) show that people often underestimate the privacy consequences of everyday digital behavior because those consequences are delayed, scattered, and difficult to calculate. This makes the usual idea of “consent” weak. A user may click “agree,” but agreeing to a long legal document under social pressure to remain connected is not the same as meaningful choice.

Beyond conventional privacy harms, data extraction alters the conditions of youth creativity. Algorithms are not neutral mirrors; they train users to produce measurable content. Platforms reward fast reactions and familiar formats, forcing creators to adjust to the machine. A student who wants to create a quiet visual essay, an original rap verse, or a realistic dance cover faces a simple threat: if the work does not match the current engagement pattern, it may disappear. Personalization becomes coercive when users cannot understand, refuse, or exit the system, subtly narrowing creative freedom without overt censorship.

This is also why digital sovereignty cannot be reduced to individual responsibility. Simply telling users to read privacy policies ignores the structural reality of platform capitalism. As Srnicek (2017) argues, platforms dominate by controlling the infrastructure of social activity. Once a platform holds a person's social network and creative archive, leaving becomes prohibitively costly—especially for young creators relying on visibility as capital. The feed is no longer just a screen; it is a gatekeeping system. When a few firms control that gate, they can decide which forms of expression are profitable enough to be seen.

A serious response, therefore, requires more than better privacy settings. First, legislation should limit unnecessary data collection through data minimization and stronger enforcement. The European Union's General Data Protection Regulation provides an important foundation by recognizing rights such as access, erasure, and data portability (European Union, 2016). Data portability matters because users should be able to leave a service without abandoning the digital traces and networks they have built. Second, portability must be paired with interoperability. The Digital Markets Act moves in this direction by targeting the power of "gatekeeper" platforms and requiring certain forms of openness in digital markets (European Union, 2022). If independent services can connect with dominant platforms, users gain a real exit option rather than a symbolic one. Third, transparency must include contestability, giving users ways to question why their content or community is suppressed or amplified.

Finally, digital sovereignty must be learned as a civic skill. Universities teach research and citation but rarely data rights or algorithmic literacy. This gap is dangerous for a generation living entirely online, needing more than mere technical convenience. Digital sovereignty requires having the vocabulary to recognize when convenience becomes dependency. Data literacy will not solve monopoly power by itself, but it can turn passive users into citizens who can demand better rules.

The internet was once imagined as a decentralized space for connection and experimentation. Today, much of it has been enclosed by systems that watch people create and convert that activity into prediction markets. The central issue is not whether technology should be rejected. It should not. The issue is whether digital spaces will remain governable by the people who live in them, or only by firms that profit from behavioral control. Privacy and digital sovereignty are therefore inseparable. To protect one is to protect the other. A free internet should not merely allow us to post; it should allow us to create without being constantly measured, steered, and sold back to ourselves.

The Speed of Machines, the Anxiety of Humans: On the Lost ‘Right to Be Ordinary’



Not long ago, the prevailing wisdom in the job market was simple: build your credentials to prepare for a career that could vanish without warning. Yet the burden weighing on today’s young generation goes far beyond writing a résumé. We live in an era of compulsion — an age in which we must upgrade ourselves as instinctively as we breathe. At the center of this vast whirlpool stands artificial intelligence.

When commentators discuss the technological revolution and the future of work, the conversation typically fixates on a single question: which occupations will be devoured by AI? But the threat felt viscerally by those in their twenties runs deeper than that. What is truly frightening is not immediate job loss; it is that the very standard by which working human beings are evaluated is being reshaped in the image of machines. We are no longer granted the quiet permission to show up and do our share — what might be called the right to be ordinary. Instead, we are compelled to prove a machine-like efficiency or risk being left behind.

Diligence alone can no longer guarantee survival. The individual must become, in and of themselves, a corporation — a brand. Social media has mutated into a portfolio disguised as everyday life, and online platforms have devolved into billboards broadcasting one’s usefulness and productivity without pause. The arrival of AI has attached dizzying momentum to this cycle of self-proof. To avoid obsolescence, human beings must at least perform the appearance of being more efficient than the machine: producing more output in less time. This unspoken demand is what tightens around our throats.

In the domain of knowledge and creative work, this phenomenon is especially visible. Where deep insight born from prolonged reflection once held value, speed of production and sheer volume have become the new metrics of competence. Firms now list AI proficiency as an essential qualification, and the title of “capable” is conferred only on those who leverage machines to churn out results rapidly. A brutal formula is hardening into social common sense: those who match AI’s pace survive; those who cannot sink into the swamp of inadequacy. As Byung-Chul Han argues in *The Burnout Society*, the contemporary subject is no longer disciplined by external authority but self-exploits under the illusion of freedom — a dynamic now supercharged by AI-driven productivity culture (Han, 2015, p. 11).

This logic is corrosive to society. Young people already exhausted by an opaque future and an unforgiving present are now saddled with the additional demand for superhuman productivity. Consider social media: our lives consist of work and rest, yet both are now on record. To survive, even the act of resting must be instrumentalized. Leisure is rebranded as self-improvement — recharging for the next step. Hobbies that should be sources of pure enjoyment are converted into monetizable content. As every waking moment is annexed by the domain of efficiency, people lie awake haunted by the thought: somewhere, someone is racing ahead, machine in hand. Research on technostress confirms that the always-on expectation enabled by digital technology is a significant source of psychological strain, particularly among younger workers (Tarafdar et al., 2007, p. 303).

Paradoxically, technological progress is gradually erasing the very conditions that make us most human. The authentic strength of human beings once resided in the capacity to sit with failure, to take slow detours, to arrive at understanding through trial and error. But contemporary society dismisses that reflective time as unnecessary cost and inefficiency. Experience must be compressed and displayed; emotion must be processed into digestible content fragments; every thought must be converted into an immediate deliverable before it is deemed worthy.

The real labor crisis we confront, then, does not lie in advanced technology itself. The crux is that society's gaze — the lens through which human worth is measured — has been fundamentally corrupted. We have moved beyond using AI as a convenient tool; we are now having the rhythms of human life mechanically reconstructed to match AI's merciless tempo. What is especially dangerous within this shift is self-censorship. Many young people pressure themselves relentlessly to become "useful." Time devoid of productivity feels like waste; an unremarkable life feels like a competitive liability. Yet a society in which every person must perpetually brand themselves is not a healthy one. There is also a need for the right to live quietly, ordinarily, and simply to do one's share.

Faced with this great technological tide, the question we must ask cannot be "which jobs will survive until the end?" We must instead ask: how far must human beings come to resemble machines in order to exploit themselves? AI's advance will not cease. But the hand that steers the direction of its development remains human. Whether this tool is wielded as a whip for infinite competition, or as an instrument for lightening the burden of labor and recovering lost humanity, is a decision our society must make — and make deliberately.

Perhaps the rarest ability in the age of AI will not be productivity. It will be the power to think for oneself without being swept away by speed. That, in the end, may be the last weapon worth defending.

Lee Seun

Serving as the Editor-in-Chief of The Argus this semester brought me both growth and regret. Taking on the role allowed me to become more responsible and mature as I made decisions for the organization and its articles. At times, however, balancing editorial work with exams and schoolwork made me wonder whether I had taken on too much. Still, the experience gave me the opportunity to discover both my strengths and weaknesses, making it a meaningful part of my semester.



Between Achievement and Regret



Cho Subin

Looking back at this semester, my greatest achievement was establishing a productive morning routine, which allowed me to take full control of my day and complete tasks until the very end without compromise. On the other hand, my main regret is that because I pushed myself so hard late into the night to perfect my work, I frequently relied on snacks as a psychological reward for those demanding hours. Ultimately, this semester served as a valuable opportunity to listen to my own voice, which helped me build self-confidence.



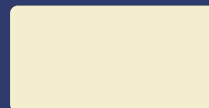
Kim Yi-eun

I think it was a great decision not to take a leave of absence this semester and to spend my last semester writing articles for The Argus. This semester has been my busiest, yet filled with valuable learning experiences. However, because I am taking the classes needed for graduation, it feels a bit tough with difficult courses, assignments, and exams all piling up at once. Even so, I still hope that I can expand my knowledge further through these challenges.



Park Se-eun

This semester, the best decision I made was choosing classes based on what I genuinely wanted to learn rather than just focusing on schedules or credits. Through those courses, I was able to learn topics I had been interested in and gain practical experience through hands-on projects and activities. On the other hand, I regret taking too many classes with group projects. Managing multiple team assignments at the same time was physically and mentally exhausting.



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