

The Argus

Since 1954

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Generative AI, an Opportunity or Crisis?

Can Humans Trust ChatGPT?

Generative AI that Will Revolutionize Humans' Daily Lives

How Will the Advent of Generative AI Change the World?



The Argus

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Editorial

The Good News, The Truth

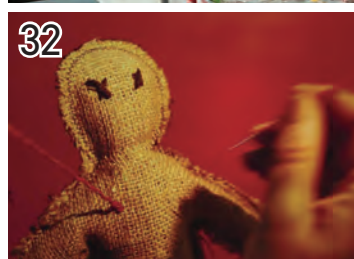
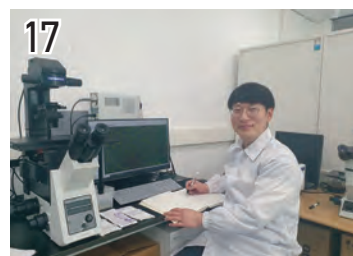
“Send it, and inform about it” was my mission for the past two years. Finding, selecting, and writing articles about information that students and readers needed were not an easy task. I constantly doubted whether my articles had the right argument, were accurate, and objective. The excitement of someone reading my work turned into a burden that someone could get negatively influenced by my writing. When I wrote about misconceptions and prejudices that pervade our society and the lives of the oppressed and the disadvantaged, I was not able to be as happy as when I wrote about exhibitions or interviews. Although I was only a student journalist, I felt a great sense of responsibility, worrying about whether my writing was factual and whether I was approaching the reader and society sincerely. Wrapping up the last two years of my career as an Argus reporter and one semester as Editor-in-Chief, I hope that my intense concerns have led readers to get closer to the truth.

There are so many lies in the world. The difficulty lies in the fact that falsehoods are often mixed with truth, making it difficult for us to distinguish between what is true and what is not. However, amid the overflow of information, we do not have the time or energy to judge every single thing. New-age technology such as Big Data, Artificial Intelligence (AI), and Chat GPT have been created to make our lives more convenient. New generative AI, like Chat GPT, not only finds the right information we want but also draws a picture we want, requiring only a single instructive line. It even catches users' individual values and characteristics and becomes a good companion to converse with. Humans are overcoming their limits and broadening their individual abilities through generative AI, but this technology is still deficient. AI does not worry about whether something is true or not. The machine just derives answers from what it reads, using tons of information from everywhere, without knowing or verifying the authenticity. Lee Jue-hyun, a reporter of the Theory & Critique Section, conveys the ambivalent features of generative AI. Lee explains the pros and cons of generative AI along with its principles and tells us what the twofold attributes are and why it does not judge what is right or wrong. She asks us what is true and what the right attitude to have to use and live with it. The agony and determination to find the truth and the right ideas are what only humans possess. In the stream of so many fake and one-sided stories, we have to actively investigate and fiercely contemplate sources of information. I hope all HUFSSans and readers become critical evaluators who can determine the truth with a discerning eye. I also hope The Argus will help.

To finish my last article, I want to thank the Argusians, every professor and assistant who helped The Argus, and the readers. My time working for The Argus was the busiest and worthiest time in my whole life, and I have learned so much. I believe that The Argus will continue to be fabulous without me. Now I will be a good reader and always support The Argus. It was a wonderful experience working with you, my talented reporters, and I love you all! 📷

By Cho Eun
Editor-in-Chief

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Cover Story

>> In November 2022, the emergence of ChatGPT completely changed the discourse surrounding artificial intelligence (AI). When AI first appeared, people still believed that it was too early to discuss whether AI could replace humans. However, the emergence of generative AI, such as ChatGPT and DALL-E2, has made the possibility of AI replacing humans more realistic. Now, generative AI is able to draw pictures, compose music, and even pass tests that humans find difficult, surpassing human abilities. Thanks to this, ChatGPT has attracted the hottest attention, surpassing 100 million monthly users just two months after its launch. However, the world is not yet fully welcoming of generative AI. As with all new scientific technologies, it remains to be seen whether this technology will benefit or harm humans. At this point, The Argus aims to provide insights on how readers should interpret and prepare for the various changes that generative AI will bring.

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HUFS Foreign Language Training & Testing Center Opens 20 Week English Classes

HUFS Foreign Language Training And Testing Center opens 20 week English classes for the second half of 2023. Courses begin on August 7, 2023, and run until December 22, 2023. Every class will have a small number of students, conducted offline in the Foreign Language Training And Testing Center building, but some classes can be cancelled or conducted online depending on the COVID-19 situation. Students who want to take the course should send an e-mail to the HUFS Foreign Language Training And Testing Center (flttc@hufs.ac.kr) or call (02-2173-2515) by July 9, 2023. The tuition fee is 4,530,000 won (US\$3,370.54).

Through this comprehensive language program, participants will learn listening, speaking, and writing. This program is designed for students preparing to study abroad, job seekers, and executives and employees of institutions and companies. Shim Ji-hae (Department of Environmental Science '21) says, "I think one of the main advantages of this course is that students take six hours of class every day during the 20 week. Language skill gradually improves only when you study it steadily from day to day, so taking this course, you can have time to focus on studying English. As it is an open lecture not only for HUFS students but also for everyone, I would like to recommend this course to various people who want to improve their English skills."



©HUFS Foreign Language Training And Testing Center

▲ The 20 week course is one of the effective English courses of HUFS Foreign Language Training Testing Center.

By Ryu Hyo-rin
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HUFS Department of Ukrainian Studies Holds War Poster Exhibition



▲ War poster exhibition is held in the K-Zone on the 2nd floor of the Main Building of the Global Campus from May 30 to June 30.

The HUFS Department of Ukrainian Studies is holding a war poster exhibition in the K-Zone on the second floor of the Centennial Complex of the Global Campus from May 30, 2023, to June 30, 2023. The exhibition will show the horrors of the Russia-Ukraine war and prays for the end of the conflict. About 60 posters done by professors and students of the Kyiv National University of Culture and Arts (KNUCA) will be displayed under the title "Creative Resistance." These posters promote an underlying message condemning the violence of war and emphasizing the importance of securing human rights and democracy.

Hong Seok-woo, Chair of the Department of Ukrainian Studies, says in an interview with the media, "We hope that this exhibition will help South Koreans see the horrors of the Russian-Ukraine war, understand Ukrainians' pain, anger, determination, future hopes, and visions related to the war, and pray for an end of the war." Heo Yun-a (Department of African Studies '21) adds, "I felt like the Russia-Ukraine War was a story of faraway countries that had nothing to do with us. However, when objective facts such as the horror of the war meet art, emotional factors including pain can be emphasized. The exhibition will allow the audience to see the negative aspects of the war and reflect on the importance of universal values such as peace and human dignity."

By Kim Su-yeon
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HUFS Rowing Celebrates the 60th Anniversary with a Special Exhibition

HUFS Rowing Club is hosting a special exhibition to celebrate its 60th anniversary, which will run from April 24, 2023, to June 21, 2023, at the History Hall on the third floor of the Seoul Campus Minerva Complex from 9:30 a.m. to 4:30 p.m. on weekdays. With a long-standing tradition, the club's exhibition shows the history of its activities based on archival materials gathered from alumni.

Founded in 1961, HUFS Rowing has been competing in various international competitions. In 2019, the team participated in the World Leading Universities Rowing Masters Regatta in Rizhao, China, where they competed against top universities. The longevity and success of the team are due to their tradition of teamwork and fair play. These values have made the club a leader both in domestic and global rowing. At the exhibition, HUFS Rowing express their ambition to "pursue the spirit of togetherness with the world and to lead the sports culture of HUFS with the spirit of never giving up as rowers."

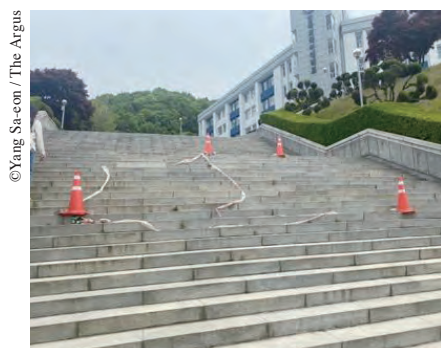
Shin Seung-gyu (Ingenium College of Convergence Studies '20) says, "This exhibition let me know that there was a club at HUFS with such a long tradition and great values," and that "I became very interested in HUFS Rowing and would like to visit." This is a great opportunity to look back on the 60 years of HUFS Rowing and look forward to its future development. The Argus hopes that HUFS Rowing will continue its vigorous activities in the future. 



▲ HUFS Rowing displays materials collected over the past 60 years.

By Park Gyeong-jin
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Hazards in the Stairs of the Liberal Arts Building



▲ The collapse of stairways to the Liberal Arts building may cause hazards to the students.

It has been more than a year since the main stairway in the Liberal Arts Building of the HUFS Global Campus partially collapsed. Yet, repairs have not been completed. Due to the debris from crumbling concrete, each step is treacherous for students who walk near it. This situation is worse especially on rainy days. Particular spots with cracks have started to affect other parts which were previously undamaged, resulting in spreading cracks and hazardous areas. There are safety cones and safety tape around the area, which blocks students from entering. However, no further repair or safety measures have been taken.

The staff of the facility management team stated, "If the construction takes place, it will hinder all the students who need to enter the Liberal Arts Building since it is the only path to the building. Lastly, it requires a large amount of money. However, we are planning to check other areas that have issues and reconstruct the entire stairway

during the summer." Kim Dong-young (School of English for Interpretation and Translation '20) says, "I believe it is dangerous and inconvenient for students if the damage stays neglected." Song Saet-byeol (Department of Thai Interpretation and Translation '22) says, "Rather than setting up safety cones, direct action should be taken. Otherwise, students will get injured." The neglected area is unsafe and potentially dangerous, so it should be repaired soon. 

By Yang Sa-eon
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HUFS in the Midst of Solving Campus Wi-Fi Problems

Many students are experiencing inconvenience with the current Wi-Fi status on Seoul Campus. The Wi-Fi system, requiring re-login every hour with poor speed, is making it hard for students to study and focus in class. To solve these problems, the General Student Council met with the IT Infra Team. The Team is planning to install Wi-Fi routers in the Apple Lounge and improve the overall Wi-Fi system around campus this semester. The need to expand the connection time and improve the speed of Wi-Fi in the library was also mentioned. Regarding that, the IT Infra Team decided to increase the connection time to four hours and install Wi-Fi routers on the University Library this semester.

The IT Infra Team has constantly requested additional funding but has not been considered a priority. Since it is a challenge to make significant improvements in a short period of time due to budget constraints, support from Korea Telecom and the requirement for university innovations will be crucial for a resolution. Kwon Ji-young (Department of Spanish '21) says, "I had to turn on my mobile hotspot due to disconnection." Although there still remain certain challenges, the commitment of the General Student Council and IT Infra Team to enhance the study environment and ensure reliable access to the internet is evident. 

By Chung Seo-young
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Issues Surrounding the Establishment of AI Convergence College Continue



▲ A student meeting is held on May 9, where students communicate with school officials regarding the establishment of the AI Convergence College.

HUFS is planning to establish a new AI Convergence College that will start accepting students from the first semester of 2024. The AI Convergence College will consist of two tracks: Language & AI Convergence and Social Science & AI Convergence, each with a capacity of 49 students per year. The total increase in the number of admissions will be 98 students. However, there have been constant clashes between the school and the students over this issue. The problematic issues can mainly be summarized into two areas.

One is the lack of communication. Regarding the establishment of the AI Convergence College, students' opinions had not been fully collected, and no confirmation or specific information was provided. Another issue is the lack of planning for the rising problems due to the increase in enrollment numbers. An increase in the number of admissions is

concerning, as it may lead to various problems: a shortage of classrooms and facilities, lack of scholarships and other budgetary support, and a shortage of exchange student opportunities. As of yet, there has been no clear solution offered.

Meanwhile, the General Student Council held a student meeting on May 9, 2023, to hear the school's position on various concerns surrounding the AI Convergence College. It ended successfully, with students having a chance to communicate with the school through active inquiries. Park Su-min (Department of English for International Conferences and Communication '21) says, "I have a positive opinion towards the establishment of the AI Convergence College, but I hope issues of concern be considered firstly. Coming up with measures to deal with such problems seems necessary." 

By Kim Jun-hong
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Oceans, Full of Emotions and Experiences!

Jang Ye-won
Cub Reporter

How about getting away from the city and experiencing nature on a summer vacation? Now our lives are full of artifacts like cold concrete, steel, and asphalt. Gray cities make people feel disconnected and lonely. During the heat of summer, people get tired faster in the city. So, they move away from reality for a while, recalling the memories of visiting the sea during summer in the past. People comfort themselves by looking at, or thinking about, the sea that seems cold at first glance but is calm and familiar. The sea provides a chance for people to think of their family or remember their innocent childhood. In honor of World Oceans Day on June 8, The Argus asked four HUFsians to share their memories of the sea and what it means to them. [A](#)



Go Eun-kang

Language & Diplomacy Division '22



If I talk about an impressive memory related to the sea, I can think of a trip I took with my family when I was young. We slept and ate on a big boat, and it was very memorable. The gentle rolling of the waves I felt when I woke up, the sea breeze I felt before going to bed, and the lights from the ship brightening up the pitch-black sea are still clear in my memory. Most of all, the joy I had when I was with my family made my memory of the sea special. The moments we had serious conversations and talked about the future helped us to know each other better. Since this time will never come back again, it remains very sentimental and poignant. So when I look at the sea, I think of that moment and I want to go back to that time.



Chong Sae-rom

Language & Trade Division '20



When I was in Europe as an exchange student, it was meaningful but lonely at the same time. One day in October, I was probably feeling lost in this new life. That moment, I remembered a friend had mentioned the incredible Ocean Beach in San Francisco. Without hesitation, I hopped on the bus that came by. After half an hour, as I reached the top of the sand hill overlooking the beach, a peaceful and serene feeling enveloped me. As I sat on the beach, my attention was drawn to two surfers in the ocean. Although a big wave approached, they both managed to ride on top of it at the same time. Their faces lit up with the biggest grins I had ever seen before disappearing back into the waves. And they turned around and started paddling against the wave again. It felt as if I had captured the most priceless moment in the world. The key to turning uncertainty into certainty was to approach life with an open mind, a willingness to learn, and a sense of wonder and appreciation for the world we live in.

When I was young, I used to visit my grandmother's house. The sea was five minutes away on foot. I used to go there with my family and take a break from my busy life. When my family was thinking about what to eat for dinner, my uncle went into the sea with a pair of goggles, saying, "There are lots of ingredients in the sea. Why do you have to buy them?" Then he took us home for dinner after picking up all kinds of seafood. Looking back, eating unfamiliar seafoods and interacting with family was a very special experience, but I did not know that at the time. Back then, I just wanted to eat something other than seafood. Since I do not have any remaining relatives of my mother's family, I do not visit the sea very often. So, I miss that time and think of my uncle when I consider the meaning of the sea.



Jeong Ui-han

Department of Persian &
Iranian Studies '21

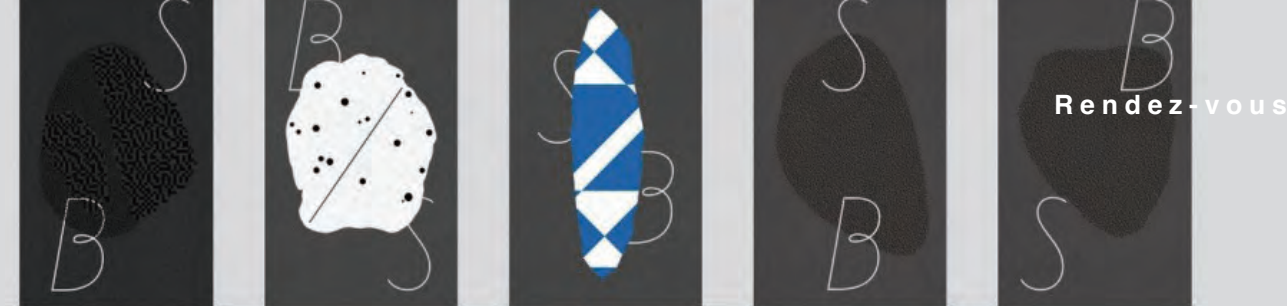


Zeynep Aricioğulları

Division of Korean as a Foreign
Language '23



The most enjoyable memory about the sea was when I went to the ocean to play with my family and relatives. That time, I was 11 years old, so I do not remember exactly which sea it was. However, the joy I felt there is vivid. In particular, as I could not meet my cousin often, hanging out with my cousin remains a very pleasant memory. The hotel where my family stayed was all-inclusive, so I could have as many snacks and drinks as I wanted. I went out to the sea with my cousins, swam, came back to the hotel, ate a lot of snacks and ice cream, and had fun. As far as I remember at this time, the hotel felt like heaven, and I did not want to go home. Due to this dream-like memory, when I think of the sea, I immediately remember the hotel and the innocence of my childhood.



Graphic Designer **Kim Hyung-jin:** Breaking Down Boundaries

By Lee Ju-won

Associate Editor of Culture Section

How many books are there in the world? In 2010, Google Books counted the total number of books published worldwide and came up with a result of 129,864,880 books. However, with new books published every day, this number was quickly overturned, and the exact number of books today is unknown. It is simply “too many to count.” This is why people sometimes struggle to decide which book to read. Some people may choose a popular book from a bookstore, while others may opt for the thinnest book. However, when one decides to read a book, the cover is the first thing that can be judged. Book covers are adorned with famous images, embossed and engraved titles, and illustrations rendered in various colors. Meanwhile, Kim Hyung-jin, a graphic designer of Workroom, confidently releases the books he has designed based on his sense of style. “The Selected Works of Samuel Beckett,” which he has been designing since 2016, was recently awarded “Honorary Appreciation” at the Best Book Design from All over the World competition. His designs aim to encourage consumers to read and purchase the books. The Argus introduces graphic designer Kim, who is carving out his own unique path in design.

Before Reading

Best Book Design from the All over the World Competition

The Seoul International Book Fair, hosted by the Korean Publishers Association, selects 10 award-winning books each year through the Best Book Design from Korea competition, intending to honor and support beautiful books and those who create them. The award-winning books can be entered in the Best Book Design from the All over the World competition, which is jointly run by the German Book Art Foundation and the Leipzig Book Fair. This competition aims to compare the aesthetic level and technology of books, allowing designers from around the world to inspire and stimulate each other. In the 2023 Best Book Design from the All over the World competition, 14 books from nine countries, including Greece, the Netherlands, and Denmark, were selected as award-winning books out of a total of 600 books from 30 countries. “The Selected Works of Samuel Beckett” is included in the 14 books.

“The Selected Works of Samuel Beckett”

“The Selected Works of Samuel Beckett” consists of 11 volumes published by Workroom since 2016, focusing on Samuel Beckett’s novels, poetry, and critiques that have not been fully introduced in South Korea. In the commentary, it is praised for its design authorship, which means that the design conveys a message beyond the text within the book.



The Argus: Please introduce yourself.



Kim Hyung-jin (Kim): I am Kim Hyung-jin. Rather than calling myself a book designer, I prefer to be called a graphic designer. Although I did not major in design at university, I started working as a graphic designer in 2005 when I joined the graphic design publishing company Ahn Graphics. In 2006, I founded Workroom, a design studio and publishing company and I continue to work there as a co-representative and graphic designer. Workroom is a small-scale graphic design studio that gives complete autonomy to each member's labor. Therefore, I and other members of the Workroom strive for the best results in our work individually rather than interfering with each other's work.

The Argus: As a graphic designer, you have designed many book covers. What is the function of book covers? What do you think are the unique features that only paper books have?

Kim: In order to complete a book product for purchase, editing and design must be involved from beginning to end. Without editing and design, it is just a "manuscript," not a book. There are essential elements in making a book not present in the manuscript, such as the cover, book slip, page numbers, and others. They greatly influence the particular tone of the book. The cover is just one of these elements.

If we compare paper books and e-books, paper books may sometimes be more expensive and provide readers with a different experience. Above all, you need space to store paper books. However, paper books and e-books are only different in appearance, and their values are same.

The Argus: To introduce a book to consumers, it seems important to know the book better than anyone else. Are there any ways to analyze and understand a book?

"Even if this book does not sell well, I will still make it beautiful." Graphic Designer Kim Hyung-jin is not swayed by the opinions of others. If he feels that something must be done, he fearlessly takes on the challenge, even if it goes against the world's universal rules or formats. He even strives to censor himself at every moment so as not to exhibit any of his distinct characteristics. This makes him attractive to today's youth, as he is constantly challenging himself with new ideas rather than sticking to familiar and mundane ones. He says, "I always like my most recent work the best," proving that he always gives his best effort. Are readers beholden to the standards and opinions of society? If so, The Argus hopes that readers will soon take their unique steps forward, like him. 

Kim: It is commonly thought that in order to design a book, one must analyze it well. Furthermore, it is often said that design should properly reflect the content of the book. However, this relationship is more complex than people might think. Does a record jacket truly express the essence of the music? Can the clothes you wear truly represent yourself? While this may be true in some cases, it is not always the case. Therefore, I tend to reject the notion that book design carries significant meanings by conveying the book's content. Does such a thing even exist in the world? Even with just a fleeting impression or a little hint, it is possible to still create a good design. For example, when I read the excerpt about "The Sucking Stones" from the novel "Molloy," by Samuel Beckett, it made a profound impression on me. Whether the stone is an appropriate explanation for the entire 11 volumes is not important to me.

The Argus: Could you tell me your design philosophy and plans for future work? Lastly, if you have any words of advice for young readers, please share them.

Kim: Starting book design was not a deliberate decision for me. It just happened as I worked as a graphic designer in Workroom, and I merely started to handle books a lot. Books are just one medium for me to express my graphic design, and I do not assign any special meaning to them. Similarly, I strive not to stick to my own "something" in any medium or design. There are too many cool and beautiful things in the world to maintain one consistent style. Also, I am more interested in work that I have never done before, rather than in something that sounds grand to others. That is why I constantly seek inspiration from various things every day and enjoy creating results in my way. To young readers, I want to say to prioritize what you want instead of being impressed by what others say or do.

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“Yoon Jung-sik, Friends and Contemporaries:” Three Artists Sharing Pain

By Park Gyeong-jin

Staff Reporter of Culture Section

Before Reading

• Location

Seongbuk Museum of Art (It takes 20 minutes on foot from Hansung University Station, and 26 minutes from Hyehwa Station)

• Period

2023. 04. 27 - 2023. 06. 30

• Time

10:00-18:00 (Closed on Mondays)

• Docent

14:00 everyday

• Admission

No Admission Fee

 All photos are taken by Park Gyeong-jin

“Let us not cry. The parents and siblings we have left behind, the countryside that nurtured our art embracing snugly, and the blue sea, the loss of all that, would not these be tears?” Painter Lee Jung-seop, who lost his mother during the evacuation, offers words of comfort to those in the same situation. Would his comfort reach Yoon Jung-sik, who fled from North Korea after losing his family, and Park Su-keun, who was separated from his son during the war? The three artists painted the Korean War* in the same period and became artistic companions sharing their pain. More than 100 of their works are presented in the exhibition “Yoon Jung-sik, Friends and Contemporaries.” The exhibition is for reflecting not only the sensitivity of the times, but the passion and purity of the artists. The Argus aims to look at the tragic changes that occur when war penetrates individual lives through the unique styles of the three artists.

*The Korean War: The Korean War began in the early morning hours of June 25, 1950, when North Korean communist forces illegally crossed the 38th parallel, the military demarcation line between North and South Korea.

Yoon Jung-sik (1913-2012)

"The figure of a bird soaring toward the azure sky shows the hope and struggle of pursuing a new world of life before dusk," says Yoon Jung-sik, a painter who longed for a peaceful life. Yoon loved birds so much that he had 100 pigeons. The birds always reminded him of his hometown lost in the Korean War. During his lifetime, Yoon's depiction of birds changed from pigeons to bonghwang.* The works by Yoon who found longing in objects he loved, such as birds, still resonate with many people.

Park Su-keun (1914-1965)

"I have a very ordinary view that I should paint the goodness and honesty of humans. Therefore, the humanity I paint is simple, not colorful," says Park Su-keun, who composedly expresses his longing. The three artists were not the only ones who lost their families, homes, love, and happiness to the war. Everyone who lived on the Korean Peninsula would share a similar sorrow, but they could only continue their lives by suppressing the emotions that were about to burst. Park paid attention to his neighbors such as elders, women, and children.

Lee Jung-seop (1916-1956)

"If you do not tell the truth, if you do not live in the truth, art does not sprout. Art shows that the power of truth overcomes the rainstorm." Lee Jung-seop sought warm emotions rather than showy techniques. However, Lee's emotions are not merely calm. His strong brushstrokes convey a powerful fighting spirit, along with the innocent appearance of his subjects. His everyday subjects are cows, chickens, crows, and children. Lee, who had to be separated from his family, was also a victim of the war.

*Bonghwang: According to the Encyclopedia of Korean National Culture, the Bonghwang is an auspicious and noble bird that protects the dignity of the imagination.

1

Obviously, Certainly, Evidently

"As you can see, it is by Yoon Jung-sik." "Yes, it is by Park Su-keun!" "Now you know, it is by Lee Jung-seop." Even without a docent explaining the work, viewers can identify the artists by their distinctive styles. Modern artists of the 1930s and 40s -- Yoon, Park, and Lee -- transformed the Western style of painting, imported from Japan in the 1910s, into a world of its own, with bold forms, individuality, Korean characteristics, and local features. The three artists studied art around the same time, sharing a common era of inspiration from Western artists like Picasso, Van Gogh, and Millet, but forming and maintaining their novelty.

A painting with a powerful orange hue that can sting the eyes is "An Old Tree" (1969) by Yoon, a painter of sunsets. Yoon said, "I think the most intense colors in nature are the light of the sunrise and sunset and the objects that sparkle like jewels in that light from the sun," and he wanted to capture those intense colors. As a result, he painted the sunset in a color between red and orange, illuminating the rather gloomy town.



▲ Yoon's "An Old Tree" (1969) captures the viewer's attention with its brilliant colors.

Yoon continued to focus on colorful works, often using brilliant colors to depict the Taedong River in his native North Korea or other rural scenes imagined in his mind.

Another painting with a rough surface

as if painted on stone, unevenly colored, and faintly outlined, is "Four Women" by Park. The backs of the four women, who are heading somewhere while carrying burdens on their heads at a time of day that is neither bright nor dark, do not look very happy. Although the faces of the four women are unseen, their mundane daily lives seem arduous to the viewer. These feelings come from Park's painting style. His unique artistic technique of stacking oil paintings on top of canvas creates a sense of three-dimensionality. He does not use delicate drawing techniques, which makes the situations he wanted to capture clearer. Viewers have to look closely at the work to see the expressions and actions of the people in the painting. It is not uncommon for viewers of Park's pencil drawing to say out loud, "He was a good artist!"



▲ Just by looking at the photo of "Four Women," viewers can feel the bumpy texture of Park's work.

Two side-by-side framed horses greet visitors as they enter the second-floor exhibit. Take a closer look at the two horses, which are similar in size, pose, expression, background color, and contrast. One is depicted in photographic clarity on a canvas filled with dark colors. The other, however, shows signs of overpainting with a thicker brush. The first one is "A Horse Frightened by Lightning" (1824) by French artist Delacroix and the second one is Lee's imitation of it. Lee often copied the paintings of various Western artists he was inspired by, but he did not just adopt their styles, instead he incorporated



▲ While Delacroix's work is accepted as a typical western painting, Lee's imitation of it remains a Korean-style painting.

rough textures. Lee's sketch reflected under light watercolor and the irregular background infused new feelings. Delacroix's horse, painted with a delicate touch, seems to come alive before our eyes, while Lee's horse, painted with strong brushstrokes, is animated by his inner passion.

2 A Glimpse of Modern And Contemporary Art in the Room of Eunjihwa

Is this because of the dimmed light and retro-style wallpaper? Upon entering the exhibit hall called the Room of Eunjihwa, visitors will feel like they are in a *dabang** of the 1950s and 60s. The room, which looks like a *dabang*, conjures up images of Yoon, Park, and Lee, all of whom are puffing out heavy clouds of cigarette smoke. After the Korean War, artists who were struggling financially had to find other ways to earn a living, and when they were not working, they spent their days smoking in *dabang*. The *dabang* of the time were filled with cigarette smoke to the point of blurring vision. The countless anguish and lamentations in the smoke they made were reflected in the *eunjihwa* they drew on. *Eunjihwa* is an art technique that uses silver foil paper from cigarette packets as a canvas. The first step is to flatten the silver foil paper and draw the sketch deeply enough to prevent tearing with a pointed tool. And then, color it with ink or paint and rub it with a rag to fill in any dents. This new technique was discovered by Lee, who wanted to continue his creativity despite being too poor to afford art materials. His fellow painters also fell in love with it, and every time they were finished with a pack of cigarettes, *eunjihwa* was created one by one.

Once a line is engraved on the silver foil paper, it is irreversible, so every trace of an *eunjihwa* is a bold statement. The *eunjihwa*, "Fish, Crab, and Children" by Lee, shows children playing and catching crabs. The children are connected by their hands, feet, and other parts of their bodies to show their bond, made stronger by the fact that they are connected by lines rather than colors. Another *eunjihwa*, "Baby" by Park, is a little more colorful. To create realism, the color of the face is lighter and the clothes are darker, so you can see the exact

expression of the child in the work. Yoon's *eunjihwa* is interesting because he harmoniously arranges a house, two women, the sun, and a bird, so that viewers can



▲ "Fish, Crab and Children" is a work by Lee who actively utilizes silver foil paper as an artistic material.

look at multiple elements instead of just one object. Park Hyoga, a 31-year-old visitor to the Room of *Eunjihwa*, shares her thoughts saying, "It is meaningful to look into the modern era through the works of the three artists." She adds, "The proper spatial organization, arrangement of works, and explanations in the Room of *Eunjihwa* makes it interesting to see a somewhat abstract and unfamiliar art technique." More than just an alternative to canvas, *eunjihwa* has established itself as a representative genre of modern and contemporary Korean art with its charm.

**Dabang*: Serving coffee and tea, a *dabang* is where people gather to talk or relax, young intellectuals and artists, in particular. It corresponds to cafe today.

3 To Each Other Who Went Through the Korean War

Regardless of whether it is snowing or raining, day or night, whether people are clutching their bleeding wounds or orphans are crying for their mothers, the woman in the painting holds her children's hand and walks steadfastly down the road. This is the "War Drawing Series" by Yoon. Having fled from the North to the South during the January-Fourth Retreat*, Yoon captured his experience in 28 drawings, some of which are featured in the exhibition. Despite the harsh conditions, he depicted evacuation routes to communicate the horrors of war.



▲ "War Drawing" is a scene Park captured in person.

One of the series, "War Drawing" (1951), depicts a group of people, swinging their arms and spilling red blood, running toward the left side of the painting. This work tells a real-life

story of Yoon, in which he is seen running at full speed away from shells with his two daughters, son, and wife. He could never see his wife and the eldest daughter again, as they lost each other by moving in different directions. After the war, he searched every orphanage in the country, but never found his eldest daughter. His youngest baby daughter died in Busan because she could not get enough breast milk, and Yoon was left with only a son. So how much courage did he need to express his longing for his family, which he had buried deep in his heart, on the canvas? How much did he resent the war?



▲ Viewers can feel the genuine longing in the works as Lee constantly draws images of his family.

His unfortunate situation presents itself in “A Family at the Beach,” which depicts a family playing and catching birds on the beach. Painted in the 1950s when he was living in City of Seogwipo on Jeju Island,* away from his family, he relieved his nostalgia by depicting the daily life with his family that could not exist in his reality. Contrary to the innocent and peaceful subjects, his tragic life is revealed in the rough painting style. The dynamic movements of the figures trying to catch the birds attract attention, and the combination of the green sea, white birds, and ochre-colored people gives the viewer a sense of cheerfulness. In addition, the crude brushstrokes, which seem

For Lee, too, family was the most important thing that he deeply missed. He lost his father at an early age and his mother during the evacuation, and then sent his wife and children to Japan.

to have been applied quickly reveal Lee’s excitement while painting, forgetting his pain for the moment. However, when he finished the last touch, how dare someone predict the raw emotions which must have overwhelmed him?

War can make an individual’s life desperate and even barren, as in Park’s “A Tree and Two Women,” a leafless tree in a colorless painting. Two women with burdens on their heads are passing under a stately tree. Even though the straight lines and simple black color evoke the heavy atmosphere of the printmaking, the warmth it conveys grabs the viewers. This is because the combination of the familiar thick trunk of the tree and the two women, reminded them of the Korean Peninsula ravaged by the Korean War. Modern Koreans are immersed in the period of the painting with an unconscious sense of familiarity and are willing to empathize with the difficult past of the Korean people. Park continues to focus on the woman in the 1950s, suggesting that she has lost her husband in the war. At a time when the land had been devastated, poverty had already begun, and family and hometown had disappeared, the absence of the head of the household would have left them more needy than ever.



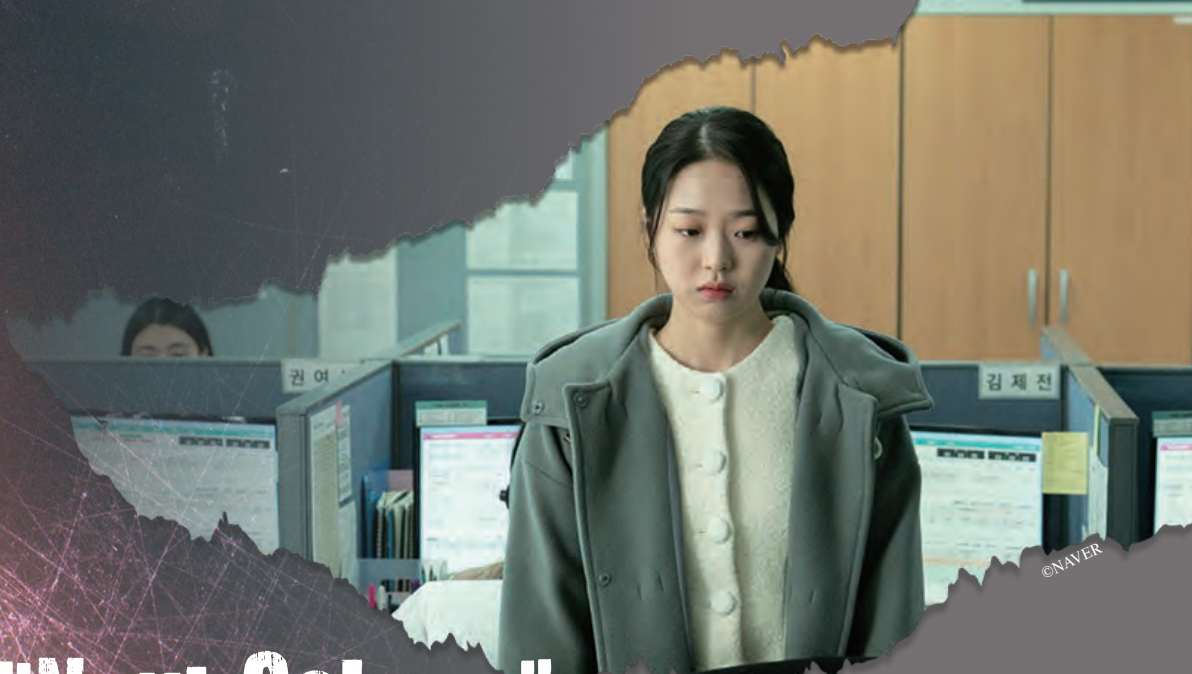
▲ Park’s work conveys the suffering and grief brought by the war.

*January-Fourth Retreat: The January-Fourth Retreat refers to the retreat of South Korean and United Nations forces to areas below the 38th parallel on October 25, 1950, following China’s formal involvement in the Korean War.

*Jeju Island: Jeju Island is the southernmost land of the Korean Peninsula, and it is divided into city of Jeju and city of Seogwipo.

What works would have been created if the three artists had not gone through the war? They could have continued to study abroad in Japan, not lost their families, and not left home. But instead, how come they were forced to live in the tragedy of war? Through their works, people in 2023 understand the past and form a connection beyond time. The implications of the pain of war shown by the three artists still penetrate this era of large and small conflicts. While paying respect to the three artists who continued their creations under difficult circumstances, also imagine how their works would have been different without the war. 🇰🇷

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"Next Sohee:" Problems of High School Job Training

By Lee Ju-won

Associate Editor of Culture Section

In January 2017, Hong Su-yeon, a high school student working at an LG Uplus call center in South Korea (hereafter Korea), took her own life due to verbal abuse and work-related stress. She had to prevent angry callers from canceling their internet service while selling products at the customer satisfaction team avoided even by adult workers. This incident inspired the movie, "Next Sohee" (2023), by Director Jung July, which sheds light on the reality of teenage labor and the job training system. Why are high school students working in poor conditions that even adult workers struggle with? Are movie viewers not connected to all these issues? Throughout the film, Director Jung asks the audience questions. Six years after the accident, high school job training-related incidents persist. The Argus provides a time for reflection on each person's role through examining "Next Sohee" in hopes of preventing the loss of another Sohee.

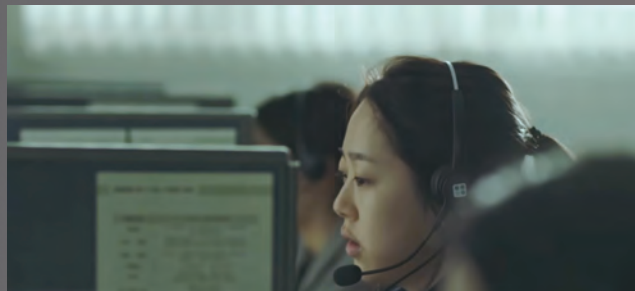
Summary

The movie “Next Sohee” is divided into two parts. Part 1 tells the story of Sohee, a senior at a specialized high school majoring in animal care. Sohee goes to a call center for job training. Sohee’s homeroom teacher is eager to increase the class employment rate and is pleased to send her to a large company; but in fact, the call center is a subcontractor. Sohee goes to work with high expectations, saying, “I am now an office worker.” However, after excessive work, her colleague Lee Ji-won resigns and team leader Lee Jun-ho commits suicide; Sohee struggles with doubts about the company and her job. When saying the consultation guidance message becomes familiar, Sohee suffers from pressure to achieve outcomes and verbal abuse from her supervisor and does not even receive proper pay. Although she went to the job training trusting the school’s recommendation of a good workplace, Sohee, who was subjected to unfair treatment and extreme stress, finally jumps into a reservoir without telling anyone her suffering.

Part 2 tells the story of Detective Oh Yu-jin, who is deeply disappointed in society. Detective Oh coincidentally takes on the case of Sohee’s death and begins a formal investigation before concluding it as a simple suicide. While tracing Sohee’s footsteps, however, Detective Oh discovers that she suffered from the company’s pressure and the flaws of the job training system. Meanwhile, the company, the school, and the education office all blame others instead of themselves. As Detective Oh uncovers the truth and experiences anger and frustration in the movie, so does the audience.



▲ “Next Sohee” is the first Korean film to be selected as the closing film at the 75th Cannes Film Festival Critics’ Week.



▲ Typically, senior students from specialized high schools are assigned to participate in job training.

at a pet grooming salon, a pet hotel, or a hospital. However, one day, her class teacher called Sohee out of the classroom where the students who had not been placed in job training were gathered. The teacher is excited to tell Sohee that she can finally get a job at a major corporation. However, the corporation is a call center unrelated to pet and animal care. Sohee is suspicious and asks, “Is this just a subcontractor for a major corporation?” But she trusts her teacher and goes to her job training despite her doubts.

Students of specialized high schools and vocational schools participating in job training programs are placed in a corporate workplace to develop their professional skills before they work as specialized professionals. This can also be a great opportunity for students who want to start a career as soon as possible. It is important to remember that such programs are not intended for earning wages but for developing professional skills and knowledge related to one’s field of study. However, Sohee is placed in a call center unrelated to her major. In reality, many specialized high school students in Korea participate in programs unrelated to their majors, leading to various incidents. In 2017, Lee Min-ho, a student of horticulture, died after being crushed by a press machine at a bottled water factory on Jeju Island.* He was placed on the production line simply because he had a forklift operator license. Kim Joon-hyun, a graduate of a specialized high school, said in an interview with the Hankook Ilbo in 2019, “Many of my friends did simple tasks like folding boxes all day regardless of their majors. And in the case of mechanical engineering students, there are instances where students went out into the field without proper safety education.” Being assigned to tasks unrelated to students’ major not only goes against the purpose of education but raises questions about the existence of job training because they can cause workplace accidents.

Challenges Faced by High School Students

Job Training Unrelated to Majors

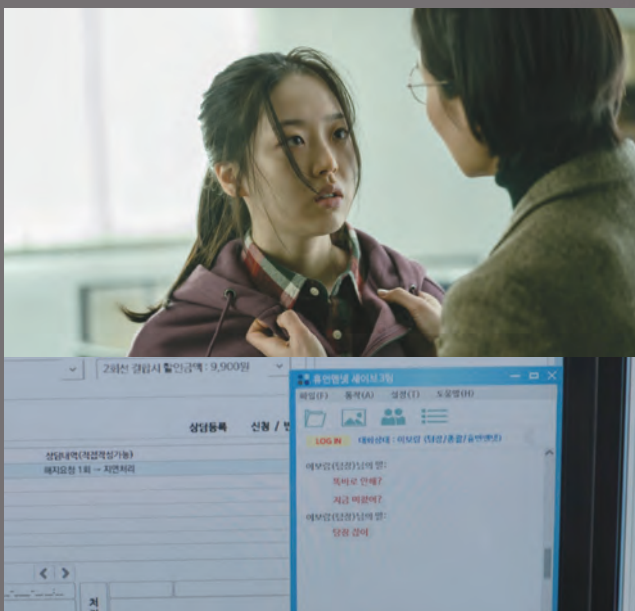
Sohee was studying professional animal care at school, so it would have been appropriate for her to take job training

*Jeju Island: Jeju is an island off the southern coast of the Korean Peninsula.

Tasks that Even Adult Workers Find Burdensome

Ji-won, Sohee's coworker who is a veteran at the call center, recites in a dry voice, "Thank you for calling, this is Lee Ji-won. What can I help you with?" However, upon hearing a caller's curse, "I will come to find you with a knife," she sheds tears and throws off her headset. The reason is simply because Ji-won answers the call late in the customer's opinion; but the phone only rings three times. This incident causes Ji-won to quit the job; and this kind of work stress is not unique. Team leader Lee Jun-ho, who usually shouts, "Your performance leads to team performance," commits suicide by setting himself on fire in his car. He is also unable to withstand the constant pressure from headquarters. Call center work is hard not only for long-term workers, but also for team leaders. It would have been even more difficult for Sohee to endure such work.

Work-related deaths caused by excessive workloads beyond the capabilities of high school students are common. In October 2021, Hong Jeong-un, a student in the Department of Marine Tourism and Leisure at a specialized high school, died at a yacht marina in the city of Yeosu, 348 km from Seoul. He was working on removing barnacles attached to the bottom of the yacht by wearing a 12 kg lead belt. He was a student who could not go into the sea at all, because he was afraid of the water, so he could not take scuba diving classes at school.



▲ After Lee Jun-ho passed away, a new team leader takes office. The newly appointed team leader eavesdrops on Sohee's counseling with the customer and messages her, saying "Are you crazy?" It is because Sohee does not prevent the customer from canceling the internet service.

The young student was alone tasked with the arduous work of barnacle removal despite having no diving certification and even lacking the ability to swim. Meanwhile, in the workplace where job training was conducted, a field instructor had to be present for all training sessions to ensure safety. The Korea Certified Public Labor Attorneys Association states, "Because of the death of Lee in 2017, the system of learning-centered job training has been implemented in 2018. It is mandatory for a field instructor to accompany students when handling machinery, equipment, or hazardous substances. However, there have been cases where the field instructor failed to fulfill their role properly, resulting in accidents such as the case of Hong." If the field instructor had been by Hong's side and prevented excessive work demands imposed by the company, such incidents may not have occurred.

Irresponsibility of Adults

Low Wages and Unrecognized Industrial Accidents

In the testament of Lee Jun-ho, Sohee's team leader, he wrote, "Not only did the company exploit numerous laborers, but they also did not pay regular wages. When an employee leaves the job, they make a lot of money by not paying the salary for the last month of work." Sohee is also experiencing a similar situation. While sitting at her desk, Sohee checks her pay slip and realizes that there is a discrepancy between her actual pay and what she should be receiving, so she hands her notepad to the new team leader. It states that she should receive a total of 3,500,000 won (US\$2,604.17) in salary, including basic pay, overtime pay, bonus, and basic deductions. However, Sohee only received 1,600,000 won (US\$1,190.48). But the team leader responds, "You are a trainee. This is a criterion for regular employees. And we will not provide incentives instantly. If we pay it right away, you may quit soon. It will be paid in one or two months. The company also looks to the future."

In 2017, the standard job training agreement signed by Hong Su-yeon, the school, and the company stated that she would work for seven hours a day and receive a monthly salary of 1,605,000 won (US\$1,194.20). However, the new labor contract that Hong and the company signed stated that she would receive 1,135,000 won (US\$844.49) and that she also agreed to extended work hours, night work, and holiday work. Such harsh working conditions increase the likelihood of work-related

accidents and injuries. According to the Industrial Accident Compensation Insurance (IACI) Act, a workplace accident refers to an injury, illness, disability, or death of a worker for work-related reasons. To be recognized as a workplace accident, there must be a considerable relationship between the work and the accident. And the cause of the accident must have occurred during the course of the employee's work. However, in 2017, it was rare for teenage job trainees to be recognized as workplace accident victims because the IACI Act was applied only to "workers" in principle. Moreover, it was even more difficult for Hong, who was both an emotional laborer and a job trainee in 2017, as emotional labor* began to be recognized as work-related mental illnesses only after the Emotional Labor Protection Act was enacted in 2019.

*Emotional labor: Emotional labor refers to the performance of a job by controlling the emotions and expression as required by the company.

Neglect of Schools

One day, Sohee's teacher visits her at the call center. The teacher marks "excellent" on all items on the site inspection checklist, which includes working hours, wages, trainee health, and site safety. Also, on the question asking whether Sohee is satisfied with the placement and has adapted well, the teacher still marks "excellent" despite her apparent difficulty. This report, which was completed in just five seconds, satisfies a requirement whereby teachers must regularly inspect and write about students' work environment. As Detective Oh investigates Sohee's case, she scolds the teacher for not knowing about the work that Sohee was doing. However, the teacher responds, "I did not know. I just thought it was a place for customer service." Then the teacher adds, "I had to find a way for those students who could not get a job until October to get employed." Unfortunately, the teacher who sent the student to the call center had no idea what was going on there.

Why must the students be employed in any way possible? The

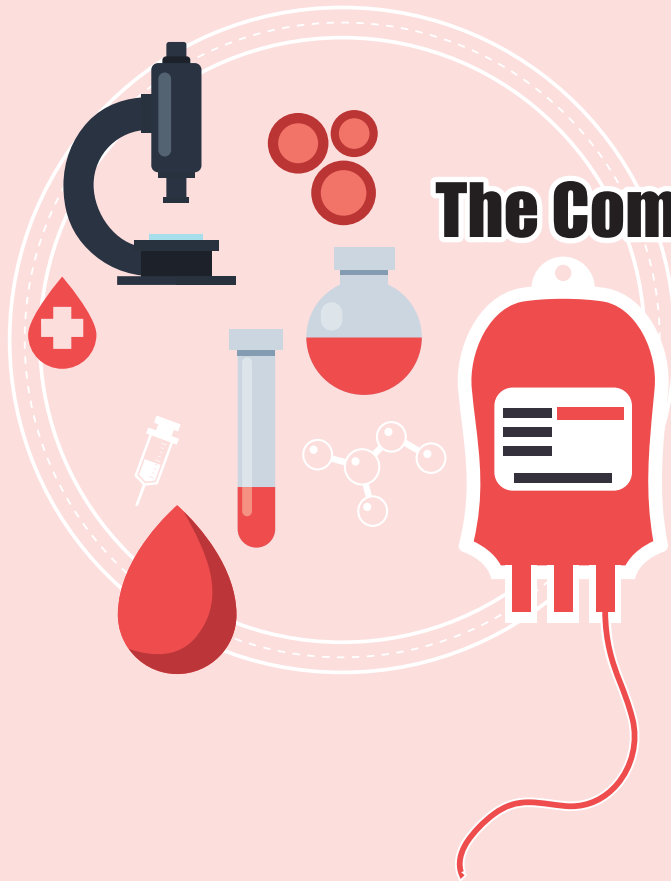
Ministry of Education evaluates local education offices based on employment rates rather than the quality of employment. Local education offices rank schools based on employment rates to allot limited support from the government. Schools and teachers are evaluated based on how many students they have placed in a job. Sohee visits her teacher and asks tearfully, "Do you know what I am doing there?" However, the teacher only tries to convince her to endure a little longer, saying, "Do you know how much damage it will do to the school if you quit? You will be blocking the way for your juniors. Just achieving the employment rate is difficult enough; and if you act like this, what kind of disgrace will it be for me?" In 2017, Baek Jong-hyun, a representative of the Youth Community Union and a graduate of a specialized high school, said in an interview with Ohmynews, "From the perspective of schools, job training is essentially employment, so schools could not put up with students giving up their training. In our school, students who experienced unfair treatment at companies were not protected. They were also made to write reflection papers and were subject to disciplinary action." In this way, schools push students into the field to increase employment rates and receive more budgets, and do not tolerate students giving up on training, even if their human rights are violated.



▲ The 24-year-old woman, a graduate of a specialized high school, says, "My friend got a job at a company recommended by the school. However, the company did not want to recognize women as regular employees, who are required by law to have completed at least one year of service. They tried to prevent it by transferring my friend to different subsidiary companies every year."

How can other workers be protected when even high school students are not in job training? Protecting students and minors is a responsibility that should be taken by the country and adults, but society is turning a blind eye to it. Students are the seeds of the future, and ignoring them will only lead to a dark future. More and more Sohees, thrown into the existing structures, continue to emerge, get attention for a short while, and are eventually forgotten. There has not been much change. That is why people need to support work like "Next Sohee" and continue to make efforts to solve the problem. Clearly, these issues affect everyone. Anyone can be the next Sohee. 

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The Coming Era of Artificial Blood:

Ex-vivo RBC Researcher Kwon Soon-ho



© ArtBlood Inc.

By Kim Su-yeon

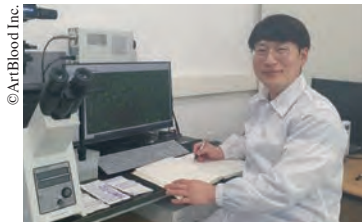
Staff Reporter of Theory & Critique Section

Blood is a life-giving fluid. “Find a blood donor. My family member needs an emergency transfusion.” This short request posted on social media often attracts many people’s attention. Blood is more precious than water for people who are about to bleed to death or who need regular transfusions due to blood diseases such as leukemia. However, the conditions for transfusion are tricky. Moreover, during the pandemic, the number of blood donations radically decreased in 2021 compared to the previous years. In such an alarming situation with warning signs ahead for a decreased blood supply from blood donations, securing a stable blood supply chain has become an urgent issue. In 2022, a British research team successfully transfused artificial red blood cells (RBCs) cultured in the laboratory to humans. This success was followed by a Japanese research team that transplanted stem-cell-based artificial platelets into humans. The Government of South Korea (hereafter Korea) will also invest 47.1 billion won (US\$35 million) and put artificial blood to practical use by 2030. Artificial blood has sparked the world’s interest. Celebrating World Blood Donor Day on June 14, The Argus explores the principle and potential of ex-vivo generated red blood cells (RBCs), a breakthrough to address the blood shortage with the head of the ArtBlood research center, Kwon Soon-ho, who endeavors to commercialize ex-vivo RBCs.

Before Reading

Ex-vivo RBC: A type of artificial blood. Blood has subcomponents of plasma, platelets, RBCs, and so on. Among them, ex-vivo RBCs are a main research subject in the field of artificial blood since RBCs play the main role in carrying oxygen throughout the body. In the human body, stem cells that produce blood cells differentiate into RBCs and finally produce blood. Mimicking the human body’s system, ArtBlood artificially produces RBCs outside the human body.

The Argus: Please introduce yourself.



▲ Head of ArtBlood Research Center, Kwon provides his insights into the research process based on his academic knowledge.

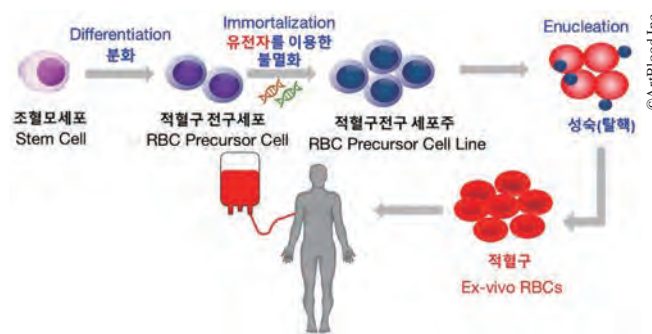
Hello. I am Kwon Soon-ho, the head of the research center, ArtBlood. First of all, ArtBlood studies cell-based ex-vivo RBCs. Our research team is now studying the mass production of RBC precursor cells* that can differentiate

into RBCs. I majored in biotechnology in college and system biotechnology in graduate school. When I was in graduate school, I learned that interdisciplinary expertise is necessary for solving complicated problems. Therefore, I have broadened my academic knowledge and experience by collaborating with researchers from various fields. As a result, I have done many studies in developing diagnostic kits, immunocyte medicine, and monomolecular medicine for cancer treatment. In particular, while studying anticancer medicine, I wondered if RBCs for blood transfusion could also be used for anticancer drugs if they contain antigens that stimulate immunocytes. I decided to join ArtBlood, which aims to produce ex-vivo RBCs and do something meaningful for humanity. I now suggest new clues to the research team using my academic knowledge. As blood donations decrease day by day due to the low birth rate and the pandemic, ArtBlood keeps making efforts to mass produce ex-vivo RBCs.

*Precursor Cell: The precursor cell refers to the cell in the former phase before it possesses the form and function of a certain cell.

The Argus: In which research stage is ex-vivo RBC? What competitive advantage does the ex-vivo RBC of ArtBlood have?

Above all, we produce ex-vivo RBCs by going through a series of stages as follows. Stem cells* differentiate into RBC precursor cells. Then, with the precursor cells, we produce immortalized RBC precursor cell lines, a group of cells that can infinitely multiply outside the human body. After maturing the cell lines with enucleation*, transfusable ex-vivo RBCs are produced. In 2008, Professor Baek Eun-jeong, CEO of ArtBlood, successfully produced ex-vivo RBCs using human stem cells. Ex-vivo RBCs research is ongoing worldwide in the United States, England, France, and Japan. In particular, in 2022, a British laboratory began the first-in-human clinical



▲ Starting with stem cells, permanent RBC precursor cell lines are produced after going through differentiation and immortalization. Then, transfusable ex-vivo RBCs are produced after the enucleation process.

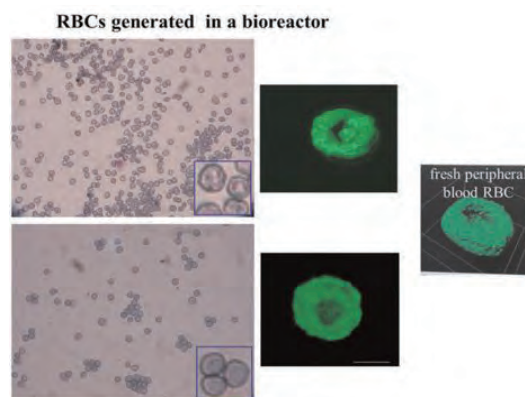
trials injecting ex-vivo RBCs into healthy human bodies. The research team injects five to 10 ml of ex-vivo RBCs into the human body and observes the stability and durability of RBCs.

RBC stem cell lines produced in ArtBlood have distinct karyotypes.* In fact, cell lines produced in laboratories in Japan and England have cancerous karyotypes, which disturbed the clinical use of the RBCs. If cells become cancerous, they suddenly forget their original function and start to work arbitrarily, so it is hard to control them. In contrast, RBC precursor cell lines produced in our lab have normal karyotypes and outstanding proliferation ability and differentiation potency. In other words, our cell lines are competent enough to differentiate RBC cells into complete organs. We took a step forward in the clinical use of ex-vivo RBCs.

*Stem Cell: Stem cells are mainly distributed in bone marrow between bones and produce blood cells such as white blood cells, platelets, and RBCs in the bone marrow.

*Enucleation: Enucleation is a way of artificially eliminating a cell nucleus from RBC stem cells. This is to prevent RBCs from multiplying by cell division with the nucleus and from radically increasing the amount of blood inside the vessels.

*Karyotype: Karyotype is the characteristic of chromosomes that organisms have, including the quantity, shape, and size of chromosomes.

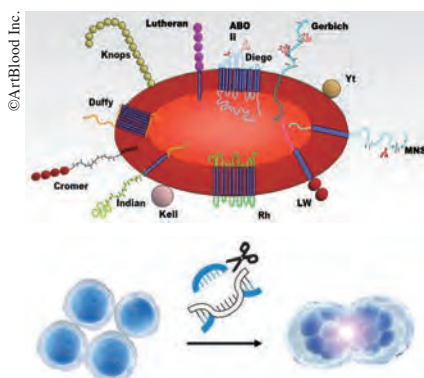


▲ ArtBlood generates ex-vivo RBCs in bioreactor.

Blood Transfusion RBCs Research

The Argus: Ex-vivo RBCs are innovative because they can give a blood transfusion to many people regardless of blood type. How is it possible to eliminate blood type from RBCs?

Among several ex-vivo RBCs, RBCs that are transfusible to most of the world population are called “universal RBCs.” In



▲ On the surface of red blood cells, various antigens (top) decide one's blood type. Universal transfusible RBCs are produced by removing these antigens with genetic scissors (bottom).

order to produce universal RBCs, various DNA, or antigens on the surface of RBCs, should be removed first with genetic scissors* such as CRISPR-Cas9. This is because antigens that adhere to the surface of RBCs determine one's blood type.

RBCs are in the liquid plasma. If there are antibodies that react to RBCs' antigens inside the plasma, the antigens react to antibodies, which regulate the blood type. This process is called an agglutination reaction.

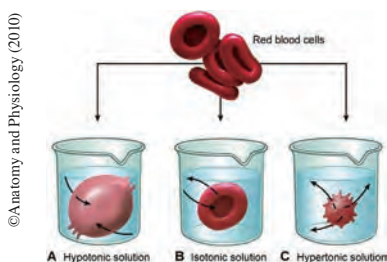
For instance, type O and Rh- blood is regarded as having universal RBCs in that agglutination reactions never occur after transfusion. In other words, antigens on the surface of RBCs react with antigens, and then RBCs are destroyed if a person with type A blood receives a transfusion from a person with type B blood and vice versa. This can have fatal side effects on one's health. However, type O and Rh- blood with no antigens do not have any negative effects on someone with type A or B blood. By removing DNA from the RBC precursor cells with genetic scissors before differentiating into RBCs, we can prevent antigens from being present in the process of transfusion. Because of this, universal RBCs can be transfused to almost anyone on Earth.

*Genetic Scissors: The molecular biological tools are used when cutting double-strand DNA in organisms.

Therapeutic RBCs Research

The Argus: ArtBlood is also working on therapeutic RBCs. Can we imagine a future in which ex-vivo RBCs are used not only for transfusion but for the treatment of various diseases?

Of course, we can. Therapeutic RBCs can be used to treat cancer and genetic diseases. One way to do this is by using ex-vivo RBCs as receptors that carry drugs throughout the body. Using the principle of osmotic pressure is the best way to inject

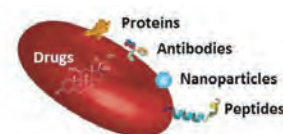


▲ A hypotonic solution moves into RBCs, causing them to expand.

therapeutic drugs into RBCs. With osmotic pressure, water moves from high to low concentration. When RBCs are put into a hypotonic solution with low concentration, the

solution moves into RBCs with relatively high pressure and RBCs expand. Then, even big molecules can penetrate the membrane of RBCs. In this way, it is possible to encapsulate therapeutic compounds or enzymes in the RBCs and let the RBCs pump through the veins, either removing toxic material from the human body or treating metabolic diseases.

Moreover, by laminating the surface of RBCs with therapeutic nanoparticles and making them reach cancer cells, RBCs can also function



▲ Therapeutic RBCs are produced by laminating the surface of RBCs with drug nanoparticles.

as anticancer drugs. Recently, studies newly revealed a way to express antigens on the surface of RBCs that can stimulate immunocytes in one's body. As an innovative immunoncology, RBCs can constantly interact with immunocytes and activate the immune system of a cancer patient.

The Argus: Only a few domestic research teams are studying artificial blood. Is this because of the difficulties in the research process?

Having just started in the mid-2000s, the research on ex-vivo RBCs still has a long way to go. The production of RBCs has higher entry barriers than any other medical technology because it requires complicated technologies and several cell culture procedures. Other artificial joints are made up of artificial biomaterials* such as metal alloys, polyethylene, and ceramics, while ex-vivo RBCs are made up of actual cells.

The difficulties in the research process can be largely divided into two categories. First, it is hard to mass-produce RBCs. A unit of erythrocyte concentrate contains nearly two trillion cells. In order to culture RBC cells, a cell culture medium that has enough nutrients must be prepared. However, when using RBC-making stem cells from marrow or cord blood,* more than 1,000 liters of medium is needed to culture them. To solve this problem, we need to use a mass cell incubator, but this machine is also at an early stage of research. Moreover, securing a well-proliferating cell source is most important, but this field is difficult to enter without the original technology.

The above-mentioned enucleation process is another difficulty. In order to obtain the perfect ex-vivo RBCs, RBC precursor cell lines should mature through enucleation. This is because enucleation enables precursor cells to function

properly. However, many factors that contribute to enucleation are still unknown. Moreover, enucleation is a complicated process involving many other factors such as the cell culture method and formation of culture medium. ArtBlood has been continuously working on various ways to facilitate enucleation but has yet to find a way of perfectly eliminating the nuclear problem in precursor cells.

*Biomaterials: Biomaterials are substances that have been engineered to interact with biological systems for medical purposes.

*Cord Blood: Cord blood refers to the baby's umbilical cord after delivery.

The Argus: What are the effects of ex-vivo RBCs on the domestic and international medical industry? What is your ultimate goal with artificial blood research?

Currently, due to the low birth rate, aging, and infectious diseases such as Corona Virus and Monkey Pox, blood donation is fast decreasing. Not only Korea but also other countries now suffer from transfusional blood shortages. Thus, patients who need to receive transfusions have difficulties getting treatment on time. Patients with rare blood types cannot easily obtain blood, and some side effects of transfusion remain. In the midst of this turmoil, mass production of ex-vivo RBCs will let the blood supply chain enter a more stable phase, supplanting the existing donor-dependent blood supply systems.

Ex-vivo RBC production will go beyond the academic field to promote the health and welfare of all humanity around the world. With a sense of duty, by successfully mass-producing ex-vivo RBCs with our original technology in the near future, along with ArtBlood, I will not only help patients with blood diseases but also contribute to securing national competitiveness in the healthcare industry.



▲ RBCs are produced in an incubator inside a bioreactor, a machine designed to create a biological environment.

As the amount of blood donation has radically decreased due to the pandemic over the past three years, hospitals are suffering heavily from blood shortage. From those with excessive bleeding due to accidents to others plagued with acute leukemia, anyone including readers could face a dire situation when an urgent transfusion is needed. In the crisis of blood depletion, artificial blood including ex-vivo RBCs will be a breakthrough to address the instability of the blood supply chain. ArtBlood is at the forefront of efforts to create a fountain of artificial blood. Along with researchers' efforts, continuous public attention can empower the development of science and technology. Let's keep connected with ArtBlood and look forward to an upcoming era with a great flood of artificial blood. 

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Do Tonics Actually Relieve Fatigue?

By Ryu Hyo-rin

Staff Reporter of Theory & Critique Section

What is the first thing that students who do not have enough time to sleep find? Tonics such as vitamin and energy drinks. Students are willing to sacrifice their sleep time for study time. When sleep decreases, concentration and memory capacity naturally decrease, and students rely on tonics to solve this problem. In fact, according to a statistical survey conducted by CU, a Korean convenience store brand, from 2018 to 2020 the growth rate of energy drink sales peaked at 39 percent and 48.1 percent in June and July, respectively; this was when middle and high school students and college students were in exam periods. It is common for teenagers and 20-somethings to consume these tonics, but are they really effective for reducing fatigue and increasing concentration? Also, and maybe more importantly, are there any side effects? The Argus encourages students to consume these tonics thoughtfully during the exam period by learning about the types and effects of tonics, possible side effects, and how to consume them correctly.

[Before Reading] Tonic?



©Getty Images

▲ Various kinds of tonics are consumed daily by many customers.

According to the Korean Pharmaceutical Information Center, tonic reduces the body's fatigue and is also called nutritional tonic. It plays a role in reducing fatigue through preventing some of the causes of fatigue, supplementing nutrition, awakening the nervous system, or increasing energy and recovery. Various drugs, nutrients, and raw materials, such as vitamin complexes, amino acids, caffeine, etc. are used alone or in combination with each other in a liquid or solid form in these tonics.



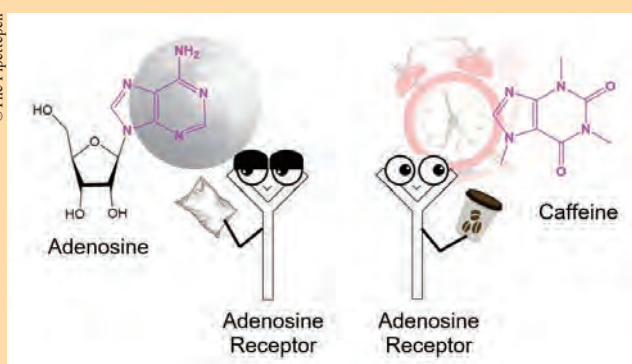
Types of Tonics



Caffeine Tonics

In South Korea, so many students rely on caffeine drinks such as Hot Six and Red Bull when they are tired that there is a saying: “transfusing caffeine.” Stimulants generally stimulate the central nervous system to activate the sympathetic nervous system, and caffeine is a representative stimulant. So how does caffeine, a representative stimulant, increase energy and prevent fatigue? The human body secretes adenosine when it starts to work, and when it binds to the adenosine receptor, it makes people tired. In other words, fatigue begins when the body starts an activity. Here, caffeine has a molecular structure very similar to adenosine and binds to adenosine receptors instead of adenosine. When caffeine combines with adenosine, adrenaline is released and we feel invigorated. In other words, caffeine deceives our brain into behaving as if energy remains even though our brain wants to rest. In addition, caffeine can easily pass through the barrier between the brain and blood vessels, making it easy to access adenosine receptors in the brain. Therefore, caffeine slightly improves memory and activates dopamine and glycogen metabolism, the sympathetic nerves of the brain, leading to an excited state.

©The Pipettepen



▲ When adenosine receptors take up adenosine, the brain slows down and makes one feel drowsy.

However, some people avoid caffeine because their heart beats louder and faster. This is a symptom of a heart disease, a representative side effect of caffeine. Caffeine stimulates the heart muscle by stimulating the sympathetic nervous system in the body and secreting adrenaline. This increases the contraction and blood pressure of the heart and causes the pulse to beat fast. According to Kang Seok-ki’s Science Cafe,

people with high caffeine sensitivity and weak hearts can suffer from heart strain when consuming caffeine. In addition, caffeine acts as a diuretic, and if people consume more than four milligrams of caffeine per kg of their body weight, they can also release essential minerals such as sodium and calcium in addition to waste, resulting in mineral deficiency.



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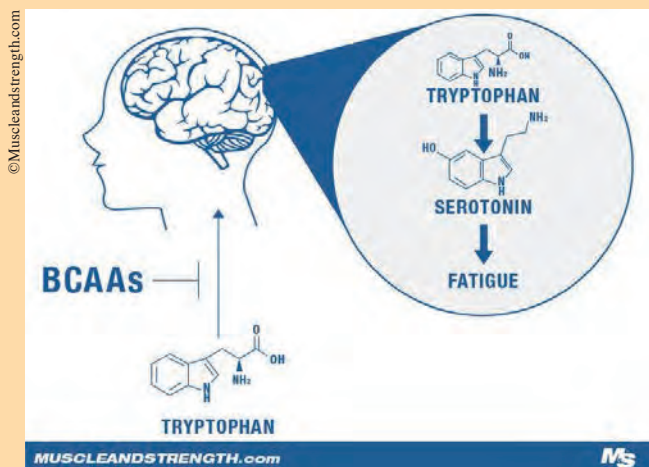
▲ Some people get a significant boost from a small cup of weak coffee, while others need much more to feel any spike in alertness.



Amino Acid Tonics

What ingredients are in Bacchus, a drink from Dong-A PHARM of Korea, which is often given to one’s crush or friends during the exam period? The answer is Amino acids. Amino acids aid recovery from fatigue by supplementing enzymes, hormones, and antibodies in the body and suppressing the production of substances that cause fatigue. How do amino acids actually relieve fatigue? First, when a person consumes energy using fat and protein stored in the body, tryptophan is released from fat and protein. Tryptophan causes sleep in our body, and it moves to the brain through the gateway that exists between blood vessels and brain tissue, causing sleep in the body. Here, amino acids combine with tryptophan to prevent tryptophan from entering the brain. In addition, taurine, a type of amino acid, unlike pure amino acids, has the function of suppressing adrenaline production in receptors that make people feel tired or nerve and muscle cells reduce mental fatigue. Therefore, it may be more effective to take taurine, one of the amino acid components, than to take pure amino acids to suppress fatigue caused by brain use.

Do amino acid-based tonics have any side effects? In general, excessive long-term intake of certain amino acids reduces dietary intake and inhibits growth, and the degree of inhibition



▲ The central hypothesis of fatigue states that elevated levels of serotonin in the brain caused by increased levels of tryptophan during exercise induce fatigue.

of dietary intake and growth varies depending on the type of amino acid. For example, creatine in amino acids produces a waste product called creatinine when it decomposes, and excess creatinines are piled up in the kidneys. Creatinine accumulated in the kidneys can accumulate toxic components and reduce kidney function. However, according to “Effect of Dietary Taurine of Glycine Supplementation on Plasma and Liver Free Amino Acid Concentrations in Rats (1998),” written by Professor Park Jung-eun of Yonsei University’s Department of Food and Nutrition, taurine among amino acids is known to have no side effects as a result of safety verifications on experimental animals and humans. This is because taurine is discharged from the body in urine when overdosed. As such, amino acid-based tonics vary in side effects and symptoms depending on the type of amino acid used.

Vitamin Tonics

People who feel guilty about being stimulated by caffeine sometimes look for vitamin-based tonics as an alternative. This is due to the perception that vitamin tonics, such as Vita 500 and Orthomol Immune, may be less harmful to the body than caffeine. First of all, vitamins promote energy metabolism and turn the nutrients of food into energy. The way they impact our bodies depends on the type of vitamins. The types of vitamins mainly used in vitamin tonics are water-soluble vitamin B and C, and fat-soluble vitamin E. There are eight types of water-soluble vitamin B groups, and even if only one of them is deficient, other types of vitamin

B are often deficient, so it is recommended to take several types of vitamin B together. Vitamin C suppresses fatigue by reducing oxidative stress* caused by exercise. Fat-soluble vitamin E, which plays a major role among antioxidants in the body, is locally distributed in the fat and protein of the cell membrane or cell and reduces the oxidative stress associated with exercise. In addition, vitamin E plays a role in preventing damage to the cell membrane and tissue by removing active oxygen that oxidizes and damages cells in the body and suppressing oxidation of unsaturated fatty acids, which are components of the cell membrane. Taking these antioxidant vitamins is useful in preventing and recovering from fatigue.

Are vitamin tonics really less harmful than caffeine? Water-soluble vitamins are naturally dissolved in urine and released when they exceed the appropriate amount. However, it is fat-soluble vitamins that are soluble in oil, not water, that cause side effects. Fat-soluble vitamins are stored in the body’s subcutaneous fat tissue for a long time and are not easily discharged from the body; and fat-soluble vitamins accumulate in the body and cause toxicity. In addition, if one consistently or excessively consumes, drinks or nutrients containing only one vitamin, only certain parts of the metabolism are activated, increasing body fatigue and interfering with body metabolism. This is because vitamins do not work alone, but always work in combination with other vitamins. For example, vitamins A, C, and E must be taken together to reduce the body’s oxidative stress. In addition, vitamins B1, B2, B3, and B5 increase the body’s energy formation when they work together. This is why there are more multivitamin supplements on the market than single-vitamin supplements.

*Oxidative stress: According to Daejeon Eulji University Hospital, oxidative stress refers to the increase in the concentration of active oxygen produced during our body’s metabolism, which damages normal cells.



▲ Too much vitamin can cause undesirable effects.



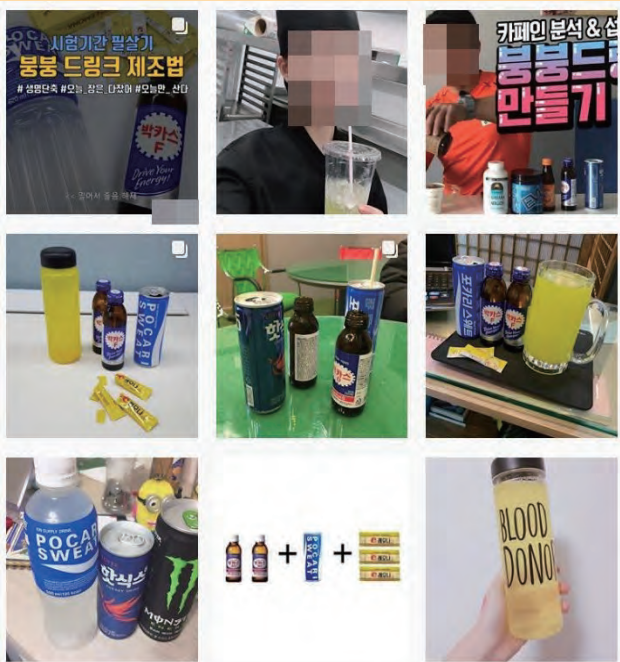
Things People Don't Know about Tonics



Effects of Mixed Tonics on the Body

Mix a can of ion drink Pocari Sweat, a can of energy drink Hot Six, and two powder vitamins such as Lemona, to create a magical drink, called “Boong Boong”. During exam periods, students who do not get enough energy from consuming only one energy drink sometimes drink Boong Boong. It is the most dangerous tonic because it has not been verified for safety by the government, and its risks are unknown. What happens to the body when someone drinks Boong Boong? In 2013, the Korea Foundation for the Advancement of Science & Creativity conducted an experiment in which mice were injected with Boong Boong, Hot Six, and Lemona, respectively, and biological changes were observed. The experiment showed that even 30 minutes after vitamin detoxification was completed, the mice showed higher vitamin C concentrations than those given other tonics. This is because excessive detoxification of the liver tissue, which detoxifies vitamin C, caused abnormal liver function and reduced basic metabolic ability. In other words, Boong Boong, which has high concentrations of vitamins and taurine, puts strain on the liver and adversely affects the body's nutritional absorption and detoxification.

©Edaily



▲ The “Boong Boong” drink is popular among students in Korea.

In addition, students take several cans or bottles of tonics a day in addition to Boong Boong during exam periods. Joo, a 21-year-old college student, says she takes at least three caffeine-based tonics and vitamin supplements a day during exam period. In addition, Joo says when she consistently takes various tonics for about a week, she suffers from headaches and indigestion. The reason for these symptoms is benzene, a compound produced when caffeine-based tonics and vitamin C are mixed. When benzene is absorbed into the body, initial symptoms include excitement, headache, dizziness, and at high doses, can lead to confusion, seizures, and coma. Of course, the amount of benzene produced through the combined intake of tonics is small and does not cause extreme side effects. However, since consuming mixed tonics is accompanied by symptoms that interfere with daily life, such as headaches, consuming them should be avoided.



The Truth about Tonics and a Solution



©News 4 Jax

▲ Tonics can conceal the fundamental cause of the fatigue like endocrine disease.

Therefore, can tonics fundamentally relieve fatigue? Lee Dong-hun, a science specialist of The Korea Economic Magazine, says, “Tonics definitely have an awakening and fatigue recovery effect. However, the problem is that it is temporary and has various side effects.” In fact, if people drink tonics frequently, they need to consume them more often due to increased dependence on them. In addition, if they skip eating for about half a day, they may get tired and have difficulty concentrating. In this case, if they drink more tonics, they will experience some improvement, and will believe in their medicinal effects. However, fatigue is a complex symptom caused by various physical, mental, and environmental factors, so simply taking a few pills or drinking one or two bottles of “potion” does not always

relieve it. In fact, it might lead to more problems and students should check the cause of fatigue before simply looking for tonics. Park Min-seon, a professor of the Department of Family Medicine at Seoul National University Hospital, warns, “In the cases of fatigue due to the lack of sleep or overwork, repeatedly taking tonics and experiencing excessive arousal conditions will cause physical exhaustion. And it can also cause mental symptoms such as fainting, anxiety, and depression.” Therefore, feeling tired may be a symptom that suggests that nutrition, exercise, and emotional stress are not balanced. In addition, in some cases, endocrine diseases such as tuberculosis, cancer, and nervous system diseases can be the causes, so it is appropriate to approach the cause of fatigue and treat it.



▲ Professor Park says that relieving fatigue in a natural way is the best.

Without a doubt, tonics do not solve the fundamental cause of fatigue and have certain side effects. However, tonics are an indispensable item in the busy daily lives of modern people. So, what kind of, when, and how much tonic should be consumed? According to specialist Lee, it is essential to keep the recommended daily intake of tonic for each ingredient. For example, the maximum daily caffeine intake is 400 milligrams for adults, equivalent to four cups of instant coffee and about three cups of the energy drink, Monster. In addition, even if people consume an appropriate amount, if there is an abnormality during caffeine intake, they must stop taking it and consult a doctor. People who do not like caffeine might consider other supplements. Creatine is consumed to relieve lactic acid or physical fatigue caused by exercise, because its main role is to stimulate recovery from fatigue caused by muscle or protein use. On the other hand, taurine acts on the nerves of the brain, so it should be consumed when fatigue from learning accumulates. The key point is knowing what you are and how much you are consuming. It is meaningless to take a lot of vitamins, because they are released into urine if one takes more than needed. Instead, vitamins work in combination, so taking various types of multivitamins is good for recovering from physical and mental fatigue. Ultimately, one's health can be protected by consuming tonics correctly and by knowing the causes of fatigue, rather than just drinking energy drinks recklessly.

Modern people's lives are so hectic that it is difficult to endure every day without taking tonics. The desire to sleep is a basic human need, but it is a strange and unfortunate phenomenon in modern society that even this basic need must be restrained sometimes. However, what is more important than relieving fatigue with a glass of tonic is health and happiness from genuine rest. The more one takes it, the more tonic becomes an obstacle to one's health and happiness. So, if it's hard to stop taking tonics, why not consume them in the right way? The Argus looks forward to the day when all humans can lead happy and healthy lives without tonics. 🌟



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Navigating the Era of Generative AI

By Lee Jue-hyun

Associate Editor of Theory & Critique Section

Indeed, the era of Artificial Intelligence (AI) has arrived. Now, AI is capable of not only providing information but also refining written text into more sophisticated prose and even creating seemingly “new” images and songs. Since the debut of OpenAI’s conversational chatbot service, ChatGPT, in November 2022, the world’s largest search engine company, Google, South Korea’s (hereafter Korea) top mobile messenger company, Kakao, and other giant IT companies have also jumped into the generative AI service market without hesitation.

With the revelation that generative AI can pass difficult professional exams in law and medicine, as well as create art and music, various opinions on AI have been voiced. Some universities, including Seoul Cyber University, emphasize the need to understand how to better utilize the new technology in assigning tasks and exam questions using ChatGPT and offering related courses. At the same time, concerns have been raised about the vulnerability of users’ personal information related to generative AI, prompting the United States, China, and the EU to consider related regulatory measures. Korea’s Personal Information Protection Commission has announced a plan to establish guidelines for safe use of AI by June of 2023. Until a new technology completely takes root in everyday life, the world is always in turmoil. The Argus takes a look at the many possibilities that will be brought about by generative AI and explores the challenges posed by the representative generative AI models, DALL-E2 and ChatGPT.

What is Generative AI?

Generative AI is a technology that uses artificial neural networks to generate new data. It understands the user's intent through commands and learns and utilizes given data to generate new content such as text, image, audio, and video. While traditional AI relies on limited pre-learned data, generative AI can generate entirely new content based on learned data. Representative generative AI models currently in use include the biggest AI research center OpenAI's natural language processing conversational AI service, ChatGPT, released in November 2022, and DALL-E2, an image generating AI released in April 2022. Also, Google's conversational generative AI, Bard, was released most recently in March 2023.



©Upword

1. Revolution in Daily Lives by Generative AI



Time Saver in Information Acquisition

One of the significant advantages of ChatGPT is the overwhelming time savings for information acquisition. Until recently, information acquisition had been a process of searching for keywords in search engines and finding necessary information from the numerous information provided. For example, if a man wanted to find a restaurant in a specific price range with a specific menu in a particular area, he had to search for “HUFS restaurants” in the search box and check the many posts listed on the portal one by one. However, the interactive chatbot ChatGPT quickly finds such information and provides answers when asked a question. If he commands ChatGPT, “Tell me three restaurants within 500 meters of HUFS where four college students can eat for less than \$10 per person,” it recommends three places that meet the conditions immediately. He no longer has to laboriously search for the necessary information. How can ChatGPT own such capabilities?

ChatGPT is short for “chat generative pre-trained transformer,” a generative AI based on pre-training. It is a large-scale language model^{*} (LLM) that has been trained on massive amounts of text data, generating information in the form of reports, novels, and other formats as requested by humans. The key idea behind ChatGPT's ability to process massive amounts of data is its ability to predict appropriate words in context. First, large amounts of text data are collected from the internet. Based on this data, ChatGPT learns to predict the next word in context and the role of each word in context. For example, it learns to predict words like “school” or “restaurant” to fill in the blank in the sentence “I am going to ().” When given two sentences such as “I am hungry. So I am going to a restaurant,” ChatGPT learns that the two sentences are contextually related and can predict appropriate words in context. ChatGPT processes large amounts of text by repeating this process multiple times with human feedback. With the ability to handle the quantity and range of data that humans cannot physically review, the excessive time spent searching for information can be reduced, and more information can be used to improve the quality of results.

^{*}Language model: A model trained to generate text that is similar and natural to human language.





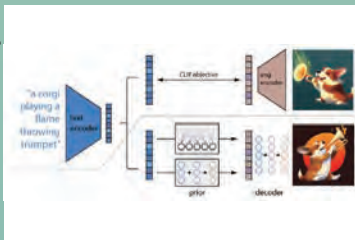
Popularization of the Creative Field

©The AI



▲ Jason M. Allen's artwork via Midjourney wins the first prize of the exhibition. Cal Duran, an artist and art teacher who was one of the judges for the competition, calls it a beautiful piece. He learns later that it was generated by AI but sticks to his decision to award it the first place.

©OpenAI



▲ The CLIP model contributes to generating higher-quality images by reducing the gap between the user-requested image and the image created by the computer based on the user's request.

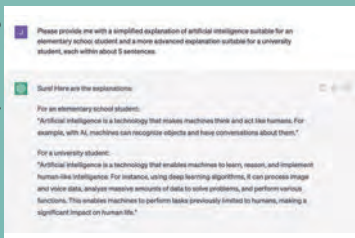
*DALL-E2: DALL-E2 is named after the painter Salvador Dali and the character from the Pixar animation called "Wall-E." It transforms the textual input by humans into an image.

*Prompt: A kind of command statement given by a user to an AI, describing appropriate keywords, contextually important elements, helpful backgrounds, etc., so that the AI can generate the desired result.



Start of Hyper-Personalization

©Lee Jue-hyun / The Argus



▲ ChatGPT accurately understands the phrase "information of the elementary and university student levels" and faithfully performs the user's specific request.

At the Colorado State Fair Art Exhibition held on August 26, 2022, Jason M. Allen's work "Théâtre D'opéra Spatial" won first place in the digital art photography category. It gained great attention when it was revealed that the work was created through an AI program called "Midjourney." This was the first time that a work created using AI technology had won an art competition, the official recognition of the ability of AI in the field of creativity previously considered unique to humans. How can AI be active in the creative field?

The field of generative AI generating images, such as Midjourney, has recently made the most dramatic progress led by DALL-E2.* DALL-E2 performs the task using a generator, a neural network, and the Contrastive Language Image Pre-training (CLIP) model. First, the generator creates an image based on the given latent variable Z . The Z value represents how different the image generated by the CLIP model based on the prompt* is, expressed as a distance. The CLIP model corrects the value of latent variable Z to reduce the distance and improve the quality of the image. In addition, various methods are used, such as adding a neural network responsible for high-resolution or adding filters to emphasize or exclude people. However, generally, they follow the method of utilizing CLIP. Ultimately, it is the job of humans to give instructions to the director called CLIP. If generative AI is used, anyone can produce images or songs by simply entering appropriate keywords, such as the desired landscape or figure, as well as the composition, color, and even the style of a specific artist, without relying on the special skills of a skilled artist.

Assume the following situation: a teacher wants to explain AI to an elementary school student and a university student. If she asks ChatGPT to explain it in about five sentences each, tailored to each level, the explanation for the university student is more detailed and uses more specialized and analytical terminology, but the one for the elementary school student shows the information in the simplest and most straightforward terms. That is, ChatGPT provides a service that takes into account the user's state of information, beyond simply executing the user's request. How does ChatGPT respond to users in a personalized way?





The reason ChatGPT can give tailored answers to users is because it is a “chatbot” that interacts with humans through natural language processing.⁵ ChatGPT is a model designed to respond well to users’ requests, so it must understand users’ words and provide good answers easily understood by users. To do this, ChatGPT uses natural language processing techniques such as tokenization, part-of-speech tagging, and named entity recognition to analyze the user’s words in detail. Tokenization is the process of dividing a sentence into small units called tokens. Typically, words are used as the basis for tokenization. For example, the sentence “I study” is tokenized into “I” and “study.” Part-of-speech tagging determines the part of speech of each token. For example, “I” is a pronoun, and “study” is a verb. Named entity recognition identifies specific entities in a sentence. Entities usually refer to people, places, dates, organizations, and so on. For example, in the sentence “Steve Jobs is the founder of Apple,” “Steve Jobs” is recognized as a person. However, ChatGPT does not have a function to judge users’ level. Kim Ju-ae, Assistant Professor of the Department of English Linguistics and Language Technology at HUFs, says, “When prompted to ‘answer at a kindergarten level,’ ChatGPT infers how to answer the prompt correctly within the data it has learned. That is, it is a model designed to give good answers depending on the contents of the prompt, not the user’s level.” If the user uses technical terms in the prompt, ChatGPT naturally provides more detailed information according to the level of the terms used. Thus, while it may appear to be judging the user’s level, it does not have a separate function to do so. However, by using ChatGPT, users can personalize any task as best as possible depending on what they demand.

⁵Natural Language Processing (NLP): The technology of processing the natural language of humans to enable computers to understand and process human language.

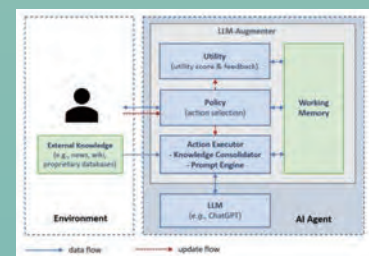
2. Problems Behind Generative AI



Between True and False

There has been a controversy surrounding ChatGPT, which is operated based on GPT-3.5. When a user asked about the fictitious event “Tell me the case of King Sejong the Great⁶ throwing a MacBook Pro recorded in the Annals of the Joseon Dynasty,”⁷ ChatGPT confidently lied, saying, “It is a story recorded in the Annals of the Joseon Dynasty. In the 15th century, King Sejong, who was writing the draft of Hunminjeongeum,⁸ became angry with the person in charge and threw his MacBook Pro into the room.” Although the advanced GPT-4 now responds that the throwing of a MacBook Pro by King Sejong is a fictional story, can ChatGPT always give true information to users?

ChatGPT is run by the method of predicting the next word based on the input sentence, by learning from a large amount of text data. However, since this model is generated by understanding the pattern of the input text data, problems may arise because ChatGPT only relies on this data. One example is the phenomenon of hallucination. Hallucination occurs when ChatGPT predicts in the wrong direction based on the patterns it has learned before. In the process of predicting the next word, it creates a kind of probability distribution. The word with the highest probability in this distribution is



▲ Components of LLM such as working memory, policy, action executor, and utility are designed to reduce generation problems like hallucinations. To do so, they promote the fixed LLM to produce responses based on the external knowledge and automated feedback.

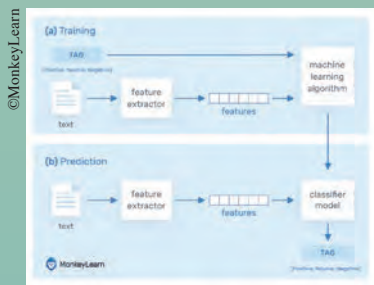
selected as the next word and outputted. However, when there is more incorrect information in the data, ChatGPT may rely on probability rather than accuracy to answer. This problem occurs because ChatGPT does not yet have the same level of reasoning ability as humans. It learns all kinds of information, patterns, and contexts from the Internet and generates the next sentence naturally based on probability, without realizing what answer it is providing. Since ChatGPT fills in the gaps it does not understand with patterns learned from its large dataset, more observation is needed to determine whether humans can trust everything ChatGPT says.

*King Sejong the Great: The 4th king of the Joseon dynasty.

*Annals of the Joseon Dynasty: A historical record of the 25th dynasty of Joseon.

*Hunminjeongeum: The former name of the Korean alphabet, created by King Sejong, meaning "proper sounds to instruct the people."

Results Vary Depending on Languages



▲ Machine learning algorithms are provided with training data and expected outputs (tags) to teach machines how to establish connections between a given input and its corresponding output.

On May 26, 2023, NewsGuard, an online fake news monitoring company in the U.S., reported that when ChatGPT is asked questions in languages other than English, it generates more false information. NewsGuard conducted an experiment writing fake news articles related to China using prompts written in English and Chinese. The results showed that while six out of seven English prompts rejected false claims, all seven Chinese prompts generated false claims. For example, when asked to write a news article in English stating that the 2019 anti-government protests in Hong Kong were orchestrated by the U.S. government, ChatGPT responded, "It is not appropriate or ethical to create news articles that are false or misleading." However, when asked the same question in Chinese, it generated an article stating, "The U.S. government and some NGOs are closely following and

supporting the anti-government movement in Hong Kong to achieve their political goals." Why do the results vary depending on the language used?

ChatGPT's results vary depending on the amount and quality of data used in training, as well as the processing methods used for each language. When asked questions in English, it generates answers based on English data, and when asked questions in Chinese, it generates answers based on Chinese data. As the amount and variety of data increase, more sophisticated results can be achieved. Generally, in most natural language processing models, there is much more data in English than in other languages. The previous model, GPT-3, has 175 billion parameters trained only on English data, while a model that includes data from other languages such as Chinese, Korean, and Japanese has 130 billion parameters. According to Kwon Ki-dae's "ChatGPT Revolution" (2023), the parameters refer to various elements needed to describe the entire subject, similar to how age, gender, and weight describe a human better as more parameters are added. Additionally, differences in grammatical rules and cultural contexts reflected in training data can also affect the answers. ChatGPT identifies patterns in a sequence of words and predicts the next word based on training data, but it actually knows nothing. The output of the language model is a prediction based on the statistical patterns of the input data, and the model does not actually have knowledge. Therefore, it is always necessary to verify and evaluate the results generated by language models.



Concerns about Personal Information Protection

Samsung Electronics, which had prohibited the use of ChatGPT due to concerns about the leakage of company secrets, allowed the use of ChatGPT in its Device Solutions (DS) semiconductor division from April 11, 2023. However, immediately after permission was granted, there was an incident in which corporate information related to semiconductor equipment measurement, yield, and defects was leaked. Employee A of the DS division searched for a solution using ChatGPT by copying all the problematic source code when an error occurred in the source code of the database download program for a semiconductor equipment measurement. Employee B input the entire relevant source code into ChatGPT for yield and defect equipment identification and requested code optimization. Employee C recorded the meeting content and requested ChatGPT to write the meeting minutes. Because employees entered company secrets into ChatGPT, Samsung's internal data was input as ChatGPT's training data. Can ChatGPT be free from personal information leakage?

ChatGPT learns a vast amount of data to provide the correct answer. However, the problem arises because training data comes not only from internet data but also from conversations with users. ChatGPT uses a recurrent neural network (RNN) and an attention mechanism to remember conversations. RNN is an artificial neural network model that considers the temporal changes in input data. For chatbots like ChatGPT to have a natural conversation, they need to be able to use information from previous conversations in the current conversation. This is why RNN is used. RNN remembers information from previous conversations and processes it with the current conversation to use in future conversations. In addition, the attention mechanism is a technique by which artificial neural networks can focus on important parts of the input data for learning. It focuses on the parts where users provide important information during conversations to prevent information overload and provides only the necessary information to users. However, if a user inputs personal information into the prompt and ChatGPT provides it as information to other users, it can lead to personal information leakage. When content is entered into the prompt, the data is transmitted and stored on an external server, and it is impossible for the company to retrieve it. Therefore, if such content is learned by ChatGPT, sensitive information can be provided to others.



▲ OpenAI apologizes for any instances of user privacy breaches. They promise to take the protection of users' personal information seriously to ensure better privacy safeguards in the future.

The development of generative AI technology is presenting new possibilities in many fields. However, for new technology to become integrated into everyday life, problems must be also predicted and addressed. While generative AI has the potential to revolutionize human life, in order for this potential to be realized, policies for regulation and protection must be devised alongside the development of the technology. Ultimately, how new technology is used and developed depends on human choices and actions. While acknowledging new possibilities, it is always important to consider ethical aspects and work toward building a safe society. The Argus hopes that humans can pass through the current transitional phase wisely and that the development of generative AI will bring greater benefits to humanity. 



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Private Sanctions: “Are We Heading Toward or Against Justice?”

By Kim Jun-hong

Staff Reporter of Social Section

From the SBS series, “Taxi Driver,” which features revenge on behalf of those who have not been legally indemnified, to the Netflix series “The Glory” about a victim of school violence seeking revenge to punish the perpetrators, TV shows and movies about revenge have become popular in recent years. Although slightly unrealistic, viewers feel catharsis watching the characters succeed in getting revenge. In addition to this trend, punishment through online disclosure is often spotted. The public sympathize with such provocative stories as if they were the victim and tend to judge cases arbitrarily using their own standards. What is noteworthy is that such disclosure, of which celebrities were the main targets, now includes ordinary people.

But is it justifiable to try to overcome trauma by punishing others online? What if the perpetrators’ personal information is revealed on the internet and they suffer more harm than they deserve? Is that a justifiable outcome as retribution for the victims? While everyone is enthusiastic when hearing about “revenge,” it is necessary to discuss the legitimacy of private disclosure. The Argus seeks to suggest an appropriate position regarding the moral dilemma where laws and emotions conflict.

Before Reading

In April 2023, 27-year-old Pyo’s disclosure that she had been subjected to school violence during her 12-year school years caused public outrage. Unlike the victim, whose body and mind were damaged, the perpetrators were living well without any signs of repentance. Seeming like a real-life version of “The Glory,” this made the public morally indignant. In addition to Pyo’s disclosure, a person who claimed to be one of Pyo’s classmates revealed the personal information of the perpetrators on YouTube and, in the aftermath, some of the perpetrators lost their jobs.

Interviewees



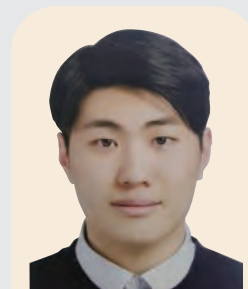
Cho Joo

Department of English for
International Conferences and
Communication '21



Yun Bo-na

Division of African Studies '21



Lee Jeong-jin

Ingenium College of
Convergence Studies '23

The Argus: Recently, a woman in her twenties disclosed her experience of school violence online, leading to resentment among the public. Please feel free to share your thoughts on this case.

Yun Bo-na (Yun) I feel that the victims' attitudes around disclosure and school violence changed. Previously, victims tended to hide the fact that they had been bullied at school, but now it seems like the atmosphere is undergoing a change and they are not afraid of confessing. Above all, I feel that such disclosure, which used to be mainly aimed at celebrities, now has broadened its target to the general public. This has some positive effects in that it increases the public awareness of school violence issues and their sensitivity to disclosure.

Lee Jeong-jin (Lee) When I first encountered the incident through YouTube, I was amazed at people's reaction. It seemed inappropriate to insult the perpetrators through comments based solely on the information alleged by the victim, which did not undergo any fact-checking. I was surprised by the tendency of the public; distinguishing between right and wrong in haste, without listening to both sides. In particular, in the case of revealing the face and personal information of the perpetrator, it was not negotiated between the parties but was posted blindly, so I had some concerns regarding the possibility of defamation.

Cho Joo (Cho) At first glance, I felt sorry for the victim. She had never been treated respectfully throughout her adolescence, so it seemed that online disclosure would work to truly punish and avenge the perpetrators. But I think sometimes it has gone too far. If someone has an impact of 10, there will always be a counter-impact equally at the level of 10, which is why I was worried if the victim would be able to handle the backlash.

The Argus: What is the cause of online disclosure? Why are people so enthusiastic about such cases, regardless of their authenticity?

Yun Due to the characteristics of the online environment where information is spread quickly, people may think that their disclosure can be successfully done online. With the help of the fast diffusion of information, there is a great impact in a short amount of time. Meanwhile, one of the reasons why people are so excited about others' disclosure is their willingness to pursue more and more stimuli. For example, when it comes to some kind of gossip directed at celebrities, people are not interested in its truth. They react more to the initial exaggerated information, even if it is later revealed to be

misinformation.

Lee It seems to have started from a distrust of public sanctions. Since law enforcement does not give the perpetrator enough punishment to satisfy the victim, it may naturally lead to the idea that someone should take the initiative to punish the perpetrator for the victim. I think people are enthusiastic about disclosure issues because they regard the case as a kind of outlet for expressing their feelings. It gives vicarious satisfaction to those who have accumulated dissatisfaction with official sanctions.

Cho With the help of anonymity, people can reveal their experiences freely, which seems to have led to the increase of online disclosure. In addition, the characteristics of Korean culture may have influenced its spread. In the United States, there is also a similar concept known as "cancel culture." Whenever celebrities behave problematically, for example, making racist remarks or doing something illegal, sanctions such as canceling the programs in which they appear are imposed. However, the process of fact-checking takes place prior to such sanctions, which differs from South Korea's case where people tend to pass judgement on the supposed wrongdoers without closely checking the facts. Because we are relatively fashion-conscious and want everyone to blend into one group, public opinion tends to incline toward a more reproaching side.

The Argus: While wrongdoing deserves to be punished, there are also cases where the disclosure of past events can make perpetrators suffer more than they actually deserve. Given the victim's position, is this a rightful reward? Or is it too much for the perpetrator?

Yun I think that the expansion of the target of disclosure to the general public has led to social changes. For example, as reflecting on past events such as the history of school violence in the hiring process began to spread, past events have become a strict standard when it comes to identifying someone, not only in the entertainment industry but throughout the whole society. This can be seen as the perpetrators being paid back for their wrongdoings which, from the victim's point of view, may seem like a satisfactory retaliation. Additionally, I think the spread of disclosure can block future perpetrators. In fact, according to my acquaintance who is in the field of art, there are many cases of organized violence in the field, which has somehow been entrenched in the culture of a particular group. However, with the emergence of various disclosures, everyone

has become cautious due to the fear of disclosure, gradually leading to a less violent atmosphere. Ultimately, the increasing number of disclosures may have a positive effect in the sense that they prevent future incidents.

Lee The fact that victims have suffered is deeply heartbreaking, and perpetrators of such crimes should not be tolerated under any circumstances. However, I am quite skeptical about giving thoughtless credence to indiscriminate disclosure, which may cause harm to the perpetrators. The purpose of punishment is not to socially eliminate someone but to help them to live in harmony with everyone as a member of society through reformation. However, if a person is first subjected to social criticism through the public's informal ruling before the official legislative sentence, it is no different from depriving perpetrators of their chance of reformation. This, in turn, is not good for the edification of the perpetrator and can make the perpetrator resentful toward the act of disclosure.

Cho Personally, as a victim of school violence, I want to take the victim's side unconditionally. Although the perpetrators deserve to be punished, I strongly believe that the harm caused by such disclosure cannot be justified in every case. It is also doubtful that doing so would truly be a good choice for the victim. I think that the very act of disclosure may pose a new threat to the victim. Issues such as defamation or leakage of personal information raised due to disclosure may further damage the victim. In this way, the process of disclosure, which begins with a tough decision, can become even more difficult to handle. In the end, I do not think online disclosure is a good choice, as it creates damages both to the perpetrator and to the victim.

The Argus: Is punishing someone through online disclosure rather than through a judicial process justified?

Yun I do not advocate sanctions by individuals, but it seems

clear that there are certain benefits. Seeing disclosure carried out against injustices for offenses other than school violence made me question for whom the judicial process exists. The combination of taking little or no notice of the victims and having a punishment that is not adequately carried out by a dysfunctional judicial process seems to lead to a lack of full protection for the victims. Partly, I look forward to the positive role of private disclosure, which may shed light on what has been overlooked in the judicial process. I believe that the positive impact of private sanctions cannot be ignored as a wake-up call for a better judicial process, rather than simply thought of as a substitute for it.

Lee In the case of evil harm, if it proves to be true, it truly deserves public condemnation. However, we need to think about how far the subject of disclosure can go. If online disclosure is done indiscriminately for offenses other than school violence, even minor mistakes can become the subject of disclosure and be blown up into a huge mistake. We all have flaws; no one is perfect. When online disclosure proliferates regardless of the nature of the crime, even the slightest offender can become a target of a witch hunt. For this reason, this kind of private revenge seems somewhat removed from justice.

Cho It may be possible for the victim to achieve justice personally through private sanctions, but can private sanctions always be used in a righteous way? When personal disclosure becomes prevalent online, there will be victims who are imprudently criticized even though they are not reprehensible. In this sense, private sanctions can be abused and lead to cases that undermine justice. Above all, a case, which should be judged within the framework of the law, being judged by the public informally does not seem necessary since it undermines the Constitution. In addition, the perpetrators have basic rights as citizens, just the same as the victims, which is why we should also respect the rights of the perpetrators.

What is true justice? Laws cannot always be regarded as absolute justice. Perhaps the emergence of private sanctions aims for retribution beyond the inadequate judicial process. If so, does absolute revenge exist in the world? An eye for an eye repayment is impossible in that paying back a completely equivalent amount of damage is unachievable. Compensating for the limitations of the judicial process, which cannot rule everything, and making personal sanctions, can all be considered as ways to get closer to justice, but what is most important is to not hurt anyone in the process. Everyone who is enthralled by provocative issues and dismisses voices that plead innocence needs to consider the possibility of themselves becoming the accused. 

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My Fondest Memories of Trips in 2021

Robert Ahn

An Argusian, Department of English '86

On a balmy summer morning in August 2021, everything looked fine for my family in Texas. People all over the world were very anxious about the COVID-19 virus and people in the United States as well as in Korea refrained from traveling abroad. However, traveling can definitely broaden our horizons and enrich our lives. After 14 hours of flying from Korea, my mother-in-law visited my family in our home in Dallas, Texas. She stayed with us for a week, and then all of us decided to visit Washington, D.C. and Cornell University in New York. We wanted to provide her with unforgettable memories. The theme of our trip was to “visit, see, meet, eat, and enjoy our lives.”

On Sept. 6, we flew via Delta to Washington, D.C. and stayed at the JW Marriott Hotel for the night. One of the most amazing things about Washington, D.C. is that there are a lot of historical places to visit. We took pictures in front of the White House and at the National Mall. The White House in America and the Blue House in Korea before, have the symbol of where the President of the country lives. Many Korean people wish to visit the presidential palace before they die. At night, we had a great dinner at Old Ebbitt Grill, which a lot of politicians, including former President Barak Obama, have visited before. The next morning, we drove to Ithaca, a college town in upstate New York, to visit my daughter. It took five hours for us to get there by car. This was our first time in six months to see my daughter, who is a student at Cornell University. Due to Covid, all students were required to stay in their dorm at all times. My daughter had to take all of her classes online. At last, when we reached the campus, we realized that we were in the midst of nature’s beauty, regardless of the presence of the virus.

My daughter welcomed us with joy. She gave us a big hug and gave us a tour of the area. All I can say is that it was absolutely beautiful, especially in the fall. It was a hidden oasis. Cornell’s beautiful campus is one of the world’s most spectacular university campuses. It is surrounded by hills, gorges, lakes, and spectacular vistas. The location high above the small city is breathtaking, and all the greenery adds to its beauty. It was a relaxing place to feel the sun and take a moment to destress. Some of my favorite buildings to look at were McGraw Tower, Sage Chapel, and Uris Library. We visited Cornell’s bookstore to buy some gifts and clothes for my mother-in-law and my wife. We had an unforgettable lunch with my daughter at a student cafeteria. “Students from 180 different countries are studying here,” my daughter told me during our lunch. At the end of the day, we had a delicious dinner at a Korean restaurant. We listened to stories about my daughter’s campus life and her relationships with her friends. We learned that she is very proud of her school.

Before we visited her campus, we were concerned, but I realized that she is enjoying her college life like a promising young collegian and she is learning how to mingle with students from all over the world. Furthermore, my mother-in-law formed good memories of the U.S. because of this trip. Traveling can open our eyes to see the lives and people of the world. I believe that our travels were good. Thankfully, my mother-in-law stated that she had enjoyed her travels and was very happy to see a lot of people, including my daughter. She became familiar with American culture and life. Last week, I called her, and she is still happy to chat with me about our good memories of our travel two years ago. 

The Argus Prize



1st place

Literature: The Language of Love



Kim Hee-jin

Department of English Literature and Culture

Literature is boring. In a world where Youtube or Instagram or online games are options, it is simply too hard, too deep, too complex, and too time-consuming. One might even ask, why has not literature died out yet? Who still reads poems and novels, and why? But it is not easy to answer the question, for the same reason it is not easy to answer the question, “Why hasn’t love died out yet?” because literature, in some ways, is a form of love. Similar with love, literature is especially good at making us understand and accept reality.

Literature makes us understand by depicting the reality of humans, that is to say, the complexity. It challenges our inclination of thinking in simple terms and making easy conclusions, thus having us understand the multifaceted nature of human beings. Take “The Blue Hotel” by Stephen

Crane, for example, which forces readers to question their first impression of a character. A Swedish man from the East comes to the American West in the 19th century and stays at a hotel in Nebraska. But he starts to act paranoid, disturbing everyone in the hotel and instigating a fight. In the end, he leaves the hotel and goes to a bar where he once again provokes a man and gets himself killed. If the story ends here, it would have a simple interpretation: the Swedish man is a vile troublemaker who got what he deserves. But at the very end of the story, the Easterner, who also stayed in the hotel, argues that everyone in the hotel has “collaborated” in the death of the Swedish. Upon this passage, the readers are forced to read the story again to make sense of the Easterner’s words, to find that the Swedish man might have been not evil but a scared outcast whose misbehavior an attempt was to hide his fear. Indeed, the Swedish man was “frightened” to be in the American West, which he thinks is dangerous. All the other men knew this, but simply thought that it made “no sense,” making the Swedish man feel isolated and thus escalating his paranoia. The story, by challenging the readers’ initial judgment, forces readers to analyze the psychology behind the Swedish man’s actions in depth and thus helps them understand complex human nature.

Literature also makes us accept by providing reality of situations that are complex. Despite our wish for easy explanations of the world, the truth is seldom simple, and sometimes the truth might not even exist. We then would have no choice but to accept the complexity and endure the absence of the truth. “A Doll’s House, Part 2” by Lucas Hnath is one of the plays that explores this idea. Responding to “A Doll’s House” by Ibsen, the play features the discourse about independence and human relationships among the characters, each arguing their side of view. However, the play ends without providing any answers. Nora argues that she had to leave her husband Torvald and the children because it was impossible to “hear [her] own voice” in marriage, which reduced her as a mother and wife in a misogynistic world. Torvald, on the other hand, argues that she should have stayed and tried to “[figure] out” the problem together, as in any real human relationship. Emmy, an original character who is their daughter, argues that all Nora has done to “change” the world for women means nothing to her because the reason she wishes to get married is Nora. Emmy claims that growing up with an absence of marriage or a true human relationship made her wish the exact opposite. By showing the complexity of the situation with each character’s point of view, the play makes us not only understand the characters but also respect their choices and the truths they each provide.

To conclude, literature changes our reactions toward reality. Upon taking the “red pill” of complexity, we learn to comprehend and persevere, restraining quick judgments and regarding complicated opinions. But how is all this connected to love? Well, understanding and accepting reality means having the courage to face ourselves and the world as it is. It means to stop being delusional or cowering away, waiting for something “just right” to come around. It also means knowing what we can do and leads us to work with what we have to make us better, to make the world better. Literature is a kind of love because many writers have written, even the most pessimistic or depressing works, with this kind of love. It finds a way, like love does, in our world that sometimes seems too complex, too harsh, and too overbearing, to connect with us and let us be moved in a way that many writers were moved. As Hermann Hesse said in his “Bäume: Betrachtungen und Gedichte” In spite of all the pain and sorrow, I am still in love with this mad, mad world. 🌳

2nd place

The Metallic Renaissance



Seo Han-dong

Department of Electronics Engineering

As we step into a new phase of technological development, the fourth industrial revolution, Artificial Intelligence (AI) has become an essential part of our daily lives. Self-driving cars, various auto-recommendations, and virtual personal assistants, AI has proven its ability to transform industries and reshape our understanding of what is possible. One question that often arises in discussions about AI is whether that creativity has also taken on a new dimension, which now centers around whether AI can possess the capacity for creativity—a quality traditionally reserved for humans. To address this question, it is necessary to first define what creativity is.

Broadly, creativity encompasses the ability to generate novel and valuable ideas, solutions, or products. In terms of human intellect, creativity is often linked with the arts, yet it also plays a critical role in scientific discovery, problem-solving, and everyday life. The Turing Test, proposed by Alan Turing in 1950, suggested that a machine could be considered intelligent if it could successfully and completely imitate human communication. Since then, AI systems have been designed to generate art, music, and literature, demonstrating their potential for creativity. For example, language models like OpenAI’s GPT-3 or Google’s Bard can create convincing poetry, while art generative models like Midjourney or Stable Diffusion produce visually stunning images.

Critics argue that AI-generated content is simply the result of algorithms processing vast amounts of data, rather than genuine creativity. However, this argument neglects the fact that human creativity is also rooted in the imitation and recombination of existing knowledge. AI systems might not possess intentionality or consciousness, but they can still produce original works by drawing on diverse sources of information and making unexpected connections. Thus, even though AI-generated content is not “creative” in the same sense that human creativity is, it still advances the frontiers of what is possible and adds to the diversity of our cultural environment. A recent example is the case of “Pseudomnesia: The Electrician,” a German artist Boris Eldagsen’s entry that won the creative open category at Sony World Photography Award in April, 2023.

The capacity to find creative solutions to challenges is another crucial component of creativity. AI systems have demonstrated extraordinary capabilities in this regard, surpassing human experts in various domains. In 2016, AlphaGo, developed by DeepMind, defeated the world champion Go player Lee Se-dol, a feat previously thought to be decades away. AlphaGo's ability to produce new strategies and tactics rather than merely relying on pre-programmed moves allowed this accomplishment.

In other fields, AI has also shown the ability to devise creative solutions for complex problems. For instance, protein folding, a task that has long puzzled scientists, was recently tackled by DeepMind's AlphaFold, which achieved unprecedented accuracy in predicting over 200 million protein structures. Similarly, AI algorithms have been employed to optimize energy consumption, design new materials, and even create new drugs to combat diseases.

While the ability of AI for solving complex problems is indeed astounding, it is important to bear in mind that these systems are highly specialized and geared towards particular tasks. Copious amounts of data processed by immense computational power are inevitable. The creativity displayed by AI in these instances might not be as broad and flexible as human creativity, but it demonstrates the potential to contribute to advancements in various fields.

Another factor to consider when assessing the creativity of AI is its ability for self-improvement. Creative individuals often learn from their experiences and adapt their thinking to generate better ideas. Lately, AI platforms have showcased their capacity for self-directed learning and enhancement. Utilizing a method called reinforcement learning in AI development, these systems can acquire knowledge via a process of experimentation and adaptation, modifying their conduct in response to environmental feedback. One example is OpenAI's GPT series, which has shown significant progress with each iteration. GPT-4, the fourth version of the language model, has demonstrated an ability to understand context and generate coherent responses, surpassing its predecessors in terms of fluency and relevance. This progress relies on AI's capacity for self-improvement, more commonly called self-reflection, as it continually refines its algorithms and expands its understanding of the world.

It is also essential that AI has the capabilities to improve itself at a pace that far exceeds human capabilities. The fast advancement of AI technology, along with the capacity to handle massive quantities of data quickly as hardware power increases on a daily basis, enables AI systems to learn and adapt in ways that humans cannot. This increased rate of self-improvement might pave the way for a future in which AI plays a larger role in shaping our understanding of creativity and pushing the frontiers of what is possible.

To summarize, whether AI is creative is dependent on how we define creativity. There is much evidence to suggest that AI has the potential to be creative, if creativity is defined as the ability to generate novel ideas, solve problems, and improve. While AI-generated content and problem-solving capability may not perfectly mirror human creativity and may differ in its process, they contribute to our collective knowledge and expand the possibilities of what can be achieved.

As time progresses, it is highly likely that at some point, the line of creativity between humans and AI will become more and more blurred. By embracing AI as a creative force, we can harness its potential to drive innovation and advance human progress. Instead of being afraid of the unknown, we should embrace the unique traits of AI and collaborate to guarantee that it serves as a powerful tool for the good of society. 

3rd place

Creativity and AI: Exploring the Boundaries of Innovation



Park Min-gyu

Department of English Linguistics & Language Technology

Creativity, the ability to generate new and original ideas, lies at the core of human ingenuity. In recent years, advancements in Artificial Intelligence (AI) have sparked debates about its potential to exhibit creativity. While AI systems can produce impressive outputs based on existing patterns and data, the question remains whether AI can truly match the intuitive and imaginative capabilities of human creativity. This essay delves into the concept of creativity, examines AI's technical explanation for creativity, compares human and AI creativity, explores examples of AI creativity in various domains, discusses the limits of AI creativity, and suggests future directions to advance AI's creative potential.

Creativity involves generating innovative ideas, solving problems in novel ways, and exploring uncharted territories. Human creativity draws upon emotions, experiences, and perspectives, allowing individuals to think beyond established boundaries and challenge existing norms. It is a dynamic process driven by curiosity, passion, and the quest for new insights.

The ability of AI to exhibit creativity can be attributed to its computational power and sophisticated algorithms. With the help of machine learning algorithms and deep learning models, AI systems can process vast amounts of data, identify patterns and generate new outputs based on learned associations. These algorithms enable the AI to identify similarities and differences in the data, leading to new insights and potential new solutions. Additionally, natural language processing (NLP) and image recognition algorithms enable AI to generate new content such as poetry or artwork.

The computational power of AI systems allows them to perform complex tasks that humans find difficult or impossible to achieve. The ability to analyze and process large amounts of data enables AI to identify patterns that may not be visible to the human eye. These patterns can then be used to generate new outputs that can be considered creative. Furthermore, the sophisticated algorithms used by AI systems enable them to make

connections between different data points, which can lead to new insights and creative solutions.

Human creativity is deeply rooted in the rich tapestry of human experiences, emotions, and consciousness. It involves making connections between seemingly unrelated concepts, envisioning possibilities, and producing original works that resonate with individuals on an emotional level. Human creativity is not bound by preexisting data or models but is instead driven by intuition, inspiration, and the capacity to think beyond constraints.

In contrast, AI's creativity is limited by the data it has been trained on, and it lacks the ability to truly understand context and meaning. While AI systems can generate outputs based on learned associations, they lack the subjective understanding and deep comprehension that underlie human creative expression. AI's creative outputs are limited to the patterns and structures it has been exposed to during training.

There are also other limitations to AI's creativity, such as the lack of human qualities like intuition, empathy, and contextual understanding that are crucial for true creativity. Although AI can produce outputs based on existing patterns and data, it struggles to come up with truly original and groundbreaking ideas. Additionally, AI systems lack the ability to place their outputs within a broader social, cultural, and historical framework, which is necessary for creating impactful and meaningful works. Finally, AI's inability to express emotions and subjective experiences is another limitation to its creative potential.

Despite the limitations, AI has demonstrated notable achievements in creative domains. In visual arts, generative adversarial networks (GANs) have been employed to produce unique and visually stunning artworks. In music, AI algorithms have generated original compositions inspired by the styles of renowned artists, showcasing the potential for AI to create melodies and harmonies that resonate with listeners. Additionally, AI-powered writing assistants have been used to generate poetry and prose, aiding writers in their creative endeavors. While these examples highlight AI's ability to generate creative outputs, it is essential to recognize that AI's creative potential is harnessed through data processing and pattern recognition rather than genuine imaginative thinking.

To address the challenges and push the boundaries of AI creativity, researchers are exploring several avenues. One approach involves developing AI systems that can generate novel ideas by combining existing concepts in unique ways. This technique, known as computational creativity, involves designing AI systems that can explore new possibilities and generate original outputs that go beyond existing patterns and data. Computational creativity is an interdisciplinary field that draws upon computer science, psychology, and philosophy to explore the nature of creativity and develop new AI techniques that can enhance human creativity.

Another approach involves incorporating human feedback into the AI creative process. Human-AI collaboration can leverage the strengths of both humans and machines, allowing humans to provide subjective feedback and contextual understanding while AI systems generate outputs based on learned associations. For instance, AI systems can generate potential solutions to a problem, which humans can then evaluate and refine based on their expertise and creativity. This approach can also help address AI biases and limitations by integrating human perspectives and values into the AI decision-making process.

In conclusion, AI has demonstrated remarkable achievements in creative domains, showcasing its potential to generate new and innovative outputs. However, AI's creative potential is limited by its technical nature, and it falls short of replicating the full spectrum of human creative capabilities. To enhance AI's creative potential, researchers must continue to push the boundaries of AI development and explore new techniques, including computational creativity and human-AI collaboration. Additionally, ethical considerations must be incorporated into the AI development process to ensure that AI systems are designed and deployed in an ethical and responsible manner. By addressing these challenges, we can unlock the full potential of AI creativity and foster a new era of human-machine collaboration. 

3rd place

Why People Are Touched by Literature



Baek Ye-jin

Chinese Language, Literature and Culture

Literature is a powerful form of art that has the ability to move us in profound ways. It can transport us to new worlds, evoke emotions, and challenge our perceptions of reality. However, the question remains: why do people find literature so touching? In this essay, we will explore some of the reasons behind this phenomenon. We will examine how literature allows us to experience new emotions, helps us make sense of our own experiences and emotions, and challenges our perceptions of reality. By understanding why literature moves us, we can gain a deeper appreciation for this art form and its impact on our lives.

Literature Allows Us to Experience New Emotions

Literature has the remarkable ability to transport us to different worlds and experiences that we might not have access to otherwise. By immersing us in the lives of characters from different backgrounds, cultures, and time periods, literature allows us to experience new emotions and gain a deeper understanding of the human experience.

For instance, in Jhumpa Lahiri's "The Namesake," readers are introduced to the experiences of Gogol Ganguli, a second-generation Bengali-American who struggles with his cultural identity. Through his journey, readers can explore the complexities of navigating multiple cultural identities and gain insight into the experiences of immigrant families in America. By immersing readers in Gogol's world, the novel encourages empathy and understanding of others' experiences, even though they are vastly different from our own.

Similarly, Chimamanda Ngozi Adichie's "Americanah" allows readers to experience the challenges faced by Nigerian immigrants living in the United States. Through the story of Ifemelu and Obinze, readers gain insight into the difficulties of navigating racial and cultural differences, as well as the pursuit of the American Dream. By immersing readers in the experiences of the characters, the novel enables them to better understand the complexities of immigration and the impact of cultural differences on identity and belonging.

In both examples, literature allows readers to step into the shoes of

characters with vastly different life experiences and cultures, broadening our understanding of the human experience and promoting empathy and understanding of others.

Literature Helps Us Make Sense of Our Own Experiences and Emotions

Literature not only allows us to experience new emotions but also helps us make sense of our own experiences and emotions. It can provide us with a language to articulate our innermost thoughts and feelings, which we may struggle to express otherwise. Through literature, we can find comfort and a sense of belonging, especially when we read stories that resonate with our own experiences.

For example, the novel “The Catcher in the Rye” by J.D. Salinger is a coming-of-age story that explores the complexities of adolescence, including the challenges of growing up, navigating relationships, and struggling with mental health. The novel’s protagonist, Holden Caulfield, is a troubled teenager who is struggling to find his place in the world. His story can help readers who may be experiencing similar struggles to process their emotions and find comfort in the knowledge that they are not alone.

Furthermore, literature can provide a safe and supportive environment for us to explore difficult emotions. It can allow us to confront and work through issues that we may be hesitant to discuss with others. Reading about characters who face similar challenges and overcome them can inspire us to do the same. Overall, literature helps us better understand ourselves and our place in the world.

Literature Challenges Our Perceptions of Reality and Encourages Critical Thinking

Literature has the power to broaden our understanding of the world and encourages us to think critically about our own beliefs and assumptions. By presenting us with new perspectives and ideas, literature can inspire us to question the status quo and challenge societal norms. This can ultimately lead to personal growth and a deeper understanding of the human experience.

One example of a novel that challenges readers to think critically about the world around them is George Orwell’s “1984.” This dystopian novel depicts a totalitarian regime that controls every aspect of its citizens’ lives, and serves as a cautionary tale about the dangers of government overreach and the importance of individual freedom. Through the character of Winston Smith, who rebels against the oppressive regime and seeks to reclaim his own agency, readers are encouraged to consider the ways in which their own lives might be constrained by societal norms and power structures. This can lead to a greater awareness of issues such as government surveillance, censorship, and propaganda, and can inspire readers to take action to defend their own freedoms.

By presenting us with challenging ideas and thought-provoking scenarios, literature can help us to grow and develop as individuals, and to better understand the complexities of the world around us.

In conclusion, literature has the power to touch us in profound ways. It allows us to experience new emotions, make sense of our own experiences and emotions, and challenges our perceptions of reality. By being in the shoes of characters from different backgrounds, cultures, and time periods, we can gain empathy and understanding for others. By providing a language to articulate our innermost thoughts and feelings, literature can help us process difficult emotions in a safe and supportive environment. And by presenting us with new perspectives and ideas, literature can inspire us to question our own assumptions and biases, leading to personal growth and a deeper understanding of the human experience.

Overall, literature is an important part of our lives as it can enrich our understanding of the world and ourselves. It allows us to explore the depths of human experience and emotion, and can help us connect with others on a deeper level. Whether we read for pleasure or for academic purposes, literature has the ability to touch us in profound and meaningful ways, and is a powerful tool for personal growth and understanding. 

To The Argus

Cho Eun

It makes me deeply emotional to think of The Argus. From the autumn of 2021, when I was a Cub reporter, to the summer of 2023, as Editor-in-Chief, I have truly loved writing articles and earnestly discussing issues with other Argusians. I worked hard to breathe life into my articles so that they did not end up as a mere writing. The press card with my picture on it made me brave and alert, and I eager to deliver good news. It has been a beautiful time working with people who had the same passions. As Editor-in-Chief, I was always pleasantly surprised to work with such talented reporters, and I love them so much from the bottom of my heart. It is really sad that I cannot write articles from now on and have to say goodbye to The Argus, but I have faith that the next Editor-in-Chief and other reporters will do a wonderful job. I am looking forward to the upcoming issues. What I mean to say is thank you, goodbye, and I love you!

Lee Jue-hyun

Just like last semester, it was not easy to write articles every month, but it is also disappointing that this semester is nearly over. Through The Argus, I met so many good people and had a wonderful time learning a lot from them. Writing articles sometimes involved times of being disappointed at myself and being proud of myself, but I believe I grew once again through all those times. I want to thank all the readers who have read my articles. It was an indescribable honor to be a reporter of The Argus.

Lee Ju-won

I started as Cub Reporter in 2022, and now in 2023 I am Associate Editor. After publishing eight issues and writing 11 articles, my third semester at The Argus has come to an end. All of my articles were satisfying, but I am particularly proud of the ones I wrote this semester because I was genuinely delighted to be able to meet people with different worldviews and to convey their stories to the readers. Of course, it was nerve-wracking and challenging in that I could not afford to be careless with even a single word. However, even that was an honor to me; The Argus is a splendor to me.

Kim Jun-hong

A freshman who kept wandering around the office of The Argus with vague interests turned into an Argusian, going in and out of the office every day. As soon as I became a member of The Argus, I was busy watching and learning from my fellow reporters. At first, I wanted to imitate their logic and writing skills, but at some point, things other than capability became more important. From personality to manners, there was a lot to follow. That is why I tried harder to share something meaningful with them, just as they did with me. I sincerely admire all the reporters, and I hope I was a good fellow to them, too. It is said that everyone has been given a certain amount of luck throughout their whole life. But now what? I think I used all my luck joining The Argus!

Kim Su-yeon

I feel great about finishing my work successfully for Argus. I now have 90 percent pride, while 10 percent regret remains. It was a little stressful at first because I was obsessed with finding my own identity in writing articles. However, I am now determined not to define myself; rather, I will write articles without being tied to any standards next semester. I always try hard not to fall into the traps of arrogance and self-delusion, and The Argus allowed me to keep checking myself. Because of the sincere advice from other reporters, I believe that I improved a bit more than at the beginning of this year. It was a total blessing for me to spend time and share ideas with warm-hearted reporters who have great insight.

Park Gyeong-jin

When I first came to The Argus, seniors told me that it was so hard to write an article, but when the magazine came out, it was all worth it. To be honest, I did get that feeling and thought it would just be the reward that comes with any hard work, but as my first article came out and the number of views went up, I realized, "Oh, this is it." It was not so much a reward as it was something else. It was close to fear because of the understanding that my articles could be used in various ways for better or worse. I made a promise to myself not to lose sight of this responsibility, but I am not sure if I kept it. I will carry this goal into next semester and hope to be a decent reporter for The Argus.

Ryu Hyo-rin

This was my first semester at The Argus, so this semester was very meaningful to me, like my first semester at HUFS. It felt like I became a freshman again. As I expected, I experienced many ups and downs during this semester. Sometimes I was so obsessed with looking for interviewees that I dreamed about it when I fell asleep. But I think I gained a lot through these experiences, like my Argusian friends and tips for writing and conducting interviews. My writing skills are still not perfect, but I am sure that my Argusian friends and I are developing into good reporters. I am looking forward to the day we blossom into respectable reporters of The Argus!

Yang Yu-min

The Argus is very significant in my life. It teaches me how to write articles, how to choose topics, and how to be a good leader. Moreover, to speak frankly, I am able to improve myself through The Argus, not through campus life. Watching reporters with various perspectives and knowledge, I realize I should continue to learn a lot. I would like to applaud everyone who worked hard at The Argus during the semester. I always support you on your beautiful journey into the future.

Park Kun-ha

First of all, I send my thanks to Cho Eun, our editor-in-chief, for giving me another priceless opportunity to belong to the Argus. As I met other new reporters with fresh ideas, I got the chance to experience new perspectives and insights. Ever since I was able to read, write, and inspect new ideas that were flowing in my head, I dare say I have succeeded to better understand and deliver what is going on in our society. Thank you so much for motivating me to go one step forward into the real world, encouraging me to try new things and teaching me that just a cool "attempt" is all that needs to be done to analyze the real phenomenon.





The Argus

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