## Symposium on "Environmental Humanities: Status Quo and Future Directions" in the Commemoration of the 70th Anniversary of Kyung Hee University

- Dates: April 19, 2019 (Fri)
- Venue: Kyung Hee University, Seoul (Space 21, B126)
- Hosts: Global Academy for Future Civilizations and Institute for the Study of Language and Information, Kyung Hee University
- Sponsor: National Research Foundation of Korea

#### 09:30-Registration 10:10 **Opening Address** 10:10-Why Environmental Humanities? 10:30 Speaker: Jong-Bok Kim (Kyung Hee U.) Session I (Climate Change & Ecosystem) Moderator: Chongwon Park (University of Minnesota-Duluth) Mass Movement and Sediment Production: Frequency and Magnitude 10:30-TongXin Zhu (University of Minnesota-Duluth) 11:00 11:00-Climate change and fragile ecosystem Woo-Seok Kong (Kyung Hee U.) 11:30 Reconstructing an Ecological Paradigm for Scientific Research and Civic Education 11:30-Hong-Gee Kim (Seoul National University School of Dentistry) 12:00 12:00-Lunch 13:00 13:00-Poster Session & Movie Clip 14:00 Session II (Particle Plastic & Pollutants & Environmental Policies) Moderator: Susan Maher (University of Minnesota-Duluth) 14:00 -Disastrous effects of microplastics on human health Eun Jung Park (Kyung Hee U.) 14:30 Incorporating Stakeholder Input into Resilient Water Resources Systems 14:30-Rebecca Teasley (University of Minnesota-Duluth) 15:00 15:00-Using Art to Make Soil Visible Pat Farrell (University of Minnesota-Duluth) 15:30 15:30-Coffee Break 15:45 Session III (Environment & Ecolinguistics & Literature) Moderator: Jong-Bok Kim (Kyung Hee U.) 15:45-Wilding the City: How Environmental Humanities Embraces Urban Ecology Susan Maher (University of Minnesota-Duluth) 16:15 16:15 -Is climate change a war?: Metaphors in environmental discourse 16:45 Chongwon Park (University of Minnesota-Duluth), Jong-Bok Kim (Kyung Hee U.) 16:45 -Fine Dust in Korea: It's Not China, It's Fossil Capital John Eperjesi (Kyung Hee U.) 17:15 17:15-Coffee Break 17:20 17:20-**Concluding Remarks** 17:30 Speaker: Susan Maher (University of Minnesota-Duluth)

## 4/19 Friday (Venue: Space 21, B126)

Poster Session	
1	Ammonium lauryl sulfate-induced apoptotic cell death may be due to mitochondrial dysfunction triggered by
	caveolin-1
	Eunsol Seong (Kyung Hee U.)
2	Whole cigarette smoke condensates induce ferroptosis in human bronchial epithelial cells
	Eun-Ju Park (Kyung Hee U.)
3	Global Environmental Movements: A Comparative Perspective
	YeonJu Cho (Kyung Hee U.)
4	Natural and Humanistic Characteristics and Values of Usil in the Island Area of the Korean Peninsula
	Hyunhee Kim, Dabin Kim, Wooseok Kong (Kyung Hee U.)
5	Ecological and Cultural Characteristics of Coastal Forest in Namhae-Gun, Korea
	Dabin Kim, Hyunhee Kim, Wooseok Kong (Kyung Hee U.)
6	Classification of lichen distribution in South Korea by Warmindex
	Hyunho Song, Wooseok Kong (Kyung Hee U.)
7	A study on the sustainable development of Korean islands - as an example of "Poong-do" in Ansan,
	Gyeonggi-do
	Gayoung Hwang, Wooseok Kong (Kyung Hee U.)
Movie Clip	
1	Albatross
	Dobeen Cha and Sangwook Jo (Kyung Hee U.)

## Mass Movement and Sediment Production: Frequency and Magnitude

Tongxin Zhu (University of Minnesota-Duluth)

Mass movement, including landslide, fall, and debris flow, is both a geo-environmental hazard that causes significant casualties and damages, and an erosion process that produces a large quantity of sediment. The previous inventory datasets of mass movement typically include large mass movements, whereas small ones are often missing due to either being too small to be interpreted from remote sensing images, or too time-consuming to measure them in the field. Thus, the relative significance of different sized mass movements in sediment production remains unknown. In this study, first, a total of 547 active mass movements, with a volume ranging from 0.3 m3 to 19000 m3, are surveyed in a complex-terrain watershed in the Loess Plateau of China; Then, sediment contributions by mass movement of different magnitude and frequency are evaluated; Finally, GIS and statistical methods are employed to model mass movement susceptibility and erosion risk. It is found that majority of the mass movements have small to medium sizes (i.e. about 90% of the mass movements with a volume less than 10 m3), which are overall a more important contributor to sediment production than large ones. The modeling results demonstrate that there is significant difference in spatial variation between the susceptibility and erosion risk of mass movements in the watershed. Therefore, while the mass movement susceptibility map is very useful in prioritizing hazard prevention and mitigation, it should be combined with the mass movement erosion risk map in erosion control planning and design, which has not been done in the past.

## Climate change and fragile ecosystem

Woo-seok Kong (Kyung Hee University)

The occurrence of about ninety percent of the total evergreen arboreal arctic-alpine and alpine plants mainly in the north of the Korean peninsula, from forty evergreen arctic-alpine and alpine plants, may be due to the frequent exchanges of floras with circumpolar regions for the seek of the glacial refugia during the alternate Pleistocene glacial epochs. The post-glacial climatic amelioration, thereafter, pushed arctic-alpine species back northwards and upwards to find an inter-glacial refugia, so isolating these plants on the separate mountain tops of the Korean mountain ranges. The isolation of typical arctic-alpine plants, such as Empetrum nigrum var. japonicum in the north and in Mt. Halla, Jeju Island, and that of Diapensia lapponica subsp. obovata in Jeju Island itself, seems to have been the result of climatic changes during the post-Pleistocene phase, which has broken a presumed former land-bridge between the mainland and the island. The present occurrence of several arctic-alpine species, in the alpine and subalpine belts of Korea, at the world's southernmost limit of their distribution, and the occurrence of another species at the southernmost limit of their range in East Asia further promotes the idea of refugia for these species in the Korean peninsula. The disjunctive distribution of many alpine and subalpine plants, including Diapensia lapponica subsp. obovata, Empetrum nigrum var. japonicum, on the top of Hallasan, Jeju Island, as well as Pinus pumila, on the summit of Soraksan, suggests a former continuous distribution of these species, both locally and on a broader scale. Their range extended down slope and southwards during the Pleistocene glacial phases, and subsequently led to the breakdown of a former continuous range into fragments as the climate ameliorated during the post-glacial warming phase. The presence of numerous arctic-alpine and alpine plants on the alpine and subalpine belts of Korea are mainly due to their relative degree of sensitivity to high summer temperatures. Shrub, and small shrubs with relatively evergreen small leaves are most commonly represented and these are good indication that there is a general morphological adaptation to cold climate conditions in comparison with the deciduous species. Evergreen broad-leaved plants at the alpine and subalpine belts of Korea, which are adapted to the cold climate, are now endangered because of the competition from down-slope plants, and from the global warming. The continued survival of these species and associated fragile ecosystem in Korea are in danger if global warming associated with the greenhouse effect takes place.

### **Reconstructing an Ecological Paradigm for Scientific Research and Civic Education**

Hong-Gee Kim (Seoul National University School of Dentistry)

There must be a discourse of ecological philosophy in the opening of a new paradigm of human civilization and it should have enough power to go beyond the modern worldview that was the foundation of modern science and technology. In order for a new ecological civilization to be realized and practiced, ecological education should be embodied in the curriculum on the school education site and the limits of modern education that is centered on scientific nature and humanistic ability cultivation should be pointed out and made a progress. As a result, the culture of the Earth where nature and humans coexist is assumed to have a virtuous circle in which science and technology, ecosystem and civilization resonate and the paradigm of ecological science should be acknowledged in the scientific community as an excellent alternative to current reductionist and mechanistic science and technology. The philosophical discourse is still underway through a long history of humanity, and it seems that more time is still needed for ecological science to become a new paradigm. The most specific and small steps in ecological education have already begun, and this will create a new worldview of philosophy and scientific research.

## Disasterous effects of microplastics on human health

Eun-Jung Park (Kyung Hee University)

Plastics, as synthetic or semi-synthetic polymers, were developed since the Industrial Revolution in the 19 century, and currently, they have surprising advantages such as light, economic, easy to manufacture and transport, and chemically resistant. Thus, the worldwide production reached to 380 million tons per year in 2018. Meanwhile, most plastics are slow to degrade in the environmental condition, thus they show a high prominence the environment, ultimately resulting in severe pollution in land, river, and oceans. Some researchers reported that microplastics was detected in drinking water, sea salt, and canned fish, as the results, potential adverse effects of microplastics on ecosystem and human health have been raising as a global threat. In recent, toxicologists have proposed that microplastics can lead to harmful effects the ecosystem by their physico-chemical properties and that hormonal disturbance following ingestion of plastic waste within the organism may be a crucial toxic mechanism together with the mechanical effects of plastic waste itself. However, available toxicity data is extremely limited, particularly for human health. In our study, we first aimed to identify subchronic toxicity of polyethylene (PE) microplastics, among the plastics with the highest production worldwide. For this, we dosed orally for 90 days according to OECD test guideline (TG) No 408. There were no significant differences in consumption of diet and drinking water following PE dosing during the whole experiment period. Meanwhile, body weight gain significantly decreased in male mice administered with the highest dose, and cell composition in the blood was altered in both sex groups treated with PE. Additionally, we screened effects of PE on reproduction and development (OECD TG 422), Interestingly, the litter number per parent significantly decreased in the maximum dose of group. Herein, we suggest that careful management and education for production, use, and disposal process of plastic products is needed.

### **Incorporating Stakeholder Input into Resilient Water Resources Systems**

Rebecca L. Teasley (University of Minnesota Duluth)

Planning and management related to developing resilient systems is complex and multifaceted with regards to policy, people, engineered infrastructure, and changing climate. With an eye towards sustainability, the solutions for building resiliency do not lie simply with engineered solutions. The solutions must be created with input of all stakeholders and understanding of the complex ways that humans interact with the engineered solutions with equally complex natural systems, especially with changing climate. Water resources engineering planning and management techniques involve stakeholder scenario development incorporating social science, the humanities, and effective communication of technical scientific and engineering data.

### Using Art to Make Soil Visible

Pat Farrell (University of Minnesota-Duluth)

Soil is an entity that is appreciated, used and understood from multiple knowledge communities, including science and art. Interest in soil seems a natural direction for artists who have a physical relationship to the material, such as those manipulating the ground in their art or those working in clay. Art can likewise serve the interest of soil science by making soil visible in provocative and nuanced ways. Conventions of soil science attribute passive qualities to soil; it is a result, an indicator, a medium, a resource, a derivation, a covering. Yet, soil is vigorously alive and active. It nurtures seeds to germination, incubates microbes, changes its parent and communicates with plants. Indeed, the US government entity that provides guidelines for soil health now considers nurturing soil life as the most important means to bolster soil health. Art as a way to make soil visible can change the way of knowing soil by changing the way of seeing soil. Intrigued by this notion and the corporeal nature of soil, my sister, an artist, and I, a soil geographer, began a collaborative soil-art project in which we buried multiple canvases to let soil "make art", in order to give it a voice. In this presentation, I describe this collaborative project, explore its multiple meanings and metaphors, and argue that art serves as a pertinent language for environmental expression.

## Wilding the City: How Environmental Humanities Embraces Urban Ecology

Naramore Maher (University of Minnesota-Duluth)

For many decades, environmental studies in the Humanities disciplines have focused on rural or wilderness settings, celebrating such environmental writers as Henry David Thoreau, John Muir, Mary Austin, Rachel Carson, Sigurd Olsen, Wallace Stegner, Edward Abbey, and Wendall Berry among others. In too many people's minds, environmental writing equates to the protection of wilderness spaces. Such privileging of less populated areas of North America has muted the voices of urban environmental writers, writing from cities that, in fact, house the majority of people on the North American continent. This paper will examine the emerging importance of urban ecologists, first articulated in Michael Bennett and David W. Teague's collection The Nature of Cities: Ecocriticism and Urban Environments (1999), and their influence on writers as diverse as John McPhee, Dan Egan, William Cronon, and Elizabeth Kolbert. The Environmental Humanities are an essential part of any exploration of urban spaces as natural places. Creative writers, historians, photographers, and journalists are now presenting the science and social science of urban nature in ways that enhance advocacy, explore policy,

help define urban aesthetics, and shift emotional attachments to the places where most people live. Their visual and textual works align with scientific inquiry and, in biologist Gary Nabhan's words, "serve to better the health of human and other-than-human lives on this planet" (Cross-pollinations, 2004).

## Is climate change a war?: Metaphors in environmental discourse

Chongwon Park<sup>1</sup>, Jong-Bok Kim<sup>2</sup> (<sup>1</sup>University of Minnesota-Duluth, <sup>2</sup>Kyung Hee University)

Linguistic investigation within an environmental context began as early as the 1970s. However, the approach that explores the role of language in the life-sustaining interactions of humans and physical environment (ecolinguistics) has never been fully integrated in major linguistic discussions. One of the main reasons for the limited attention to ecolinguistics among linguists is its lack of incorporation of theoretical and empirical tools widely shared in contemporary linguistic frameworks. The goal of this presentation is to increase the visibility of ecolinguistics in linguistics and related communities by providing qualitative and quantitative analyses of environmental discourse within the theoretical frame of the well-established cognitive linguistics enterprise. Specifically, we analyze metaphors used in environmental discourse (500,000 English words) collected from magazines and newspapers. We address that a wide variety of war metaphors have been adopted in describing climate change in English discourse to highlight the far-reaching effects and the magnitude of impact in everyone's lives. Nevertheless, these war metaphors failed to convince the general population in that many people still do not see climate change as something that needs collective effort to overcome. We discuss that utilizing bellicose metaphors is orthogonal to the sharing of the importance of the issue and suggest that linguistic manipulations and social problems need to be handled independently.

## Fine Dust in Korea: It's Not China, It's Fossil Capital

John R. Eperjesi (Kyung Hee University)

In this paper, I explore a basic question: what does Timothy Morton's theory of the hyperobject have to teach us about fine dust air pollution in South Korea? Understanding fine dust as a hyperobject, both in terms of its nonlocality and viscosity, can help us think about what it means to be ecologically aware and about the relationship between such awareness and social and environmental change. I argue that seeing fine dust as a hyperobject means that it must be understood as part of the much larger planetary crisis of global warming. Too often, air pollution and the warming of the Earth's atmosphere are kept separate, not understood as two interrelated parts of the same problem.

## [Poster presenters]

# Ammonium lauryl sulfate-induced apoptotic cell death may be due to mitochondrial dysfunction triggered by caveolin-1

Eun-Jung Park<sup>1</sup>, Eunsol Seong<sup>1</sup>, Younghoon Kim<sup>1</sup>, Kyuhong Lee<sup>2</sup> (<sup>1</sup>Kyung Hee University, <sup>2</sup>National Center for Efficacy Evaluation for Respiratory Disease Product)

A recent epidemiological study suggested that chronic exposure to cleaning detergents significantly reduced lung function in consumers. In this study, we identified the toxic mechanism of ammonium lauryl sulfate (ALS), the most common detergent in consumer products, using alveolar macrophage cells. In preliminary tests, cell viability sharply decreased between 40 and 200 µg/mL, thus we determined doses of 10, 20, and 50 µg/mL for further study. When treated at a 50 µg/mL for 24 h, cell viability was  $67.7 \pm 3.4\%$  of the control, and autophagosome-like vacuoles and a number of double membranes surrounding damaged mitochondria were observed in the cytosol. Intracellular ROS, the ATP amount, ER volume, acid cell compartments and mitochondrial potential rapidly reduced with dose, whereas the release of LDH and apoptotic bodies dramatically increased. Additionally, multiple cell death pathways were activated following exposure to ALS, and the expression of caveolin-1, p-Acetyl CoA carboxylase, p21, and p-ERK were greatly inhibited. Moreover, the secretion of inflammatory mediators and expression of innate- and adaptive-immune response-related proteins were remarkably reduced. Meanwhile, the secretion of TGF- $\beta$  was enhanced. Therefore, we conclude that ALS-induced apoptosis may be due to mitochondrial dysfunction triggered by the inhibition of caveolin-1, and that chronic pulmonary exposure to ALS may cause adverse health effects such as cancer and fibrosis by impairing the host's pulmonary immune system.

# Whole cigarette smoke condensates induce ferroptosis in human bronchial epithelial cells

Eun-Jung Park<sup>1</sup>, Eun-Jun Park<sup>1</sup>, Yoo-Jin Park<sup>1</sup>, Sang Jin Lee<sup>2</sup>, Kyuhong Lee<sup>2</sup>, Cheolho Yoon<sup>3</sup>

(<sup>1</sup>Kyung Hee University, <sup>2</sup>Jeonbuk Department of Inhalation Research, <sup>3</sup>Seoul Center, Korea Basic Science Institute)

Cigarette smoke is responsible for many fatal pulmonary diseases, however, the toxic mechanism is still unclear. In this study, we first confirmed that whole cigarette smoke condensates (WCSC) contain hydrophilic elements, li pophilic and gaseous components. Then, we treated BEAS-2B cells, a normal human bronchial epithelial cell line, at dosages of 0.25, 0.5, and 1% for 24 h and explored the toxic mechanism. Cell viability decreased in a dose-de pendent manner, and fission and fusion of mitochondria, damage of endoplasmic reticulume (ER) structures, and formation of autophagosome-like vacuoles were found in cells treated with 1% WCSC. Mitochondrial and ER volu mes, lysosomal fluorescence intensity, LDHrelease, and intracellular ROS levels notably decreased at the highest d oses compared with the control, whereas intracellular calcium ion and NO levels were significantly elevated acco mpanying G2/M phase arrest. Expression of an iron-binding nuclear protein-related gene (pirin) was the most u p-regulated in the WCSC-treated cells with enhanced expression of antioxidant-related genes, whereas expression of carbonic anhydrase IX gene, a marker of tumor hypoxia, was the most down-regulated. Additionally, levels of apoptosis (BAX, Apaf-1, and cleavage of caspase-3 and PARP), autophagy (p62 and LC3B-II), ER stress (PERK, IR E-1a, Bip, and CHOP), antioxidant (SOD-1 and SOD-2), and MAPkinase activation (p-ERK, p-p38, and p-JNK)-relate d proteins were clearly enhanced following exposure to WCSC, whereas expression of several mitochondrial dyna mics-related proteins was reduced with dose. Interestingly, expression of ferritin protein (light chain) was dramat ically enhanced near the ER along with that of p62 protein. More importantly, the hypoxia inducible factor-1 pat hway and ferroptosis were proposed among the 20 terms in KEGG pathway analysis, and secretion of IL-6 and I L-8, which are involved in hypoxia-induced inflammation, were clearly elevated with dose. Taken together, we su ggest that WCSC may induce ferroptosis in bronchial epithelial cells via ER stress and disturbed homeostasis in mitochondrial dynamics caused by induction of hypoxia conditions.

#### **Introducing Renewable Energy**

YeonJu Cho (Kyung Hee University)

My research is on the components of fine dust and explores the relationship between air quality and coal-fired power plants. I will examine different kinds of renewable energy and its potential as an alternative to power plants that run on fossil fuels by introducing comparative case studies of the UK and the Netherlands. Finally, I will introduce a new technology called "Energy Harvesting," which gathers all the energy produced in daily lives.

#### The Geographical Meaning of 'Woosil'

Hyunhee Kim<sup>1</sup>, Mizuno Kazuharu<sup>1</sup>, Wooseok Kong<sup>2</sup> (<sup>1</sup>Kyoto University, <sup>2</sup>Kyung Hee University)

The "Woosil" is a unique type of forest found in the southern and southwestern islands of the Korean Peninsula. Fundamentally, 'Woosil' means fence (Ultari in Korean). 'Woosil' consists of relatively large trees such as Celtis sinensis, Zelkova serrata, and Kalopanax septemlobus or a combination of stone walls, creeper, and Pseudosasa japonica. 'Woosil' mainly serves as a preservative to protect farmland and villages from strong northwest winds especially during the winter and sea wind. It also serves as a habitat for living things, a resting place to avoid summer heat, and various functions and functions as an aesthetic space for human-being.

'Woosil' is mainly distributed in the coastal areas and islands of southern parts of Jeolla and Gyeongsang provinces on the Korean Peninsula. The traditional landscape using nature has a long history, and the state of preservation is relatively good, so its natural, cultural and historical values are invaluable. 'Woosil' was created by human social behavior, which tried to overcome hostile environment by using nature while adapting to nature. This is a representative example of coexistence between nature and people that can be used without damaging nature.

## Ecological and Cultural Characteristics of Coastal Forest in Namhae-Gun, Korea

Dabin Kim<sup>1</sup>, Hyunghee Kim<sup>2</sup>, Wooseok Kong<sup>2</sup>

(<sup>1</sup>Research Institute of Biogeographical Distribution and Diversity, <sup>2</sup>Kyung Hee University)

The coastal traditional village forest at Namhae-gun or Namhae-county, southern central coast of Korea is named as the 'Fish Shelter Forest' or *Eoburim* (어부림 魚付林) in Korean. Namhae-gun's *Eoburim* is known to have various functions, such as windbreaker of coastal village, which preventing natural disasters, *e.g.* Tsunami or high tide and breakwater, collects fishes by making shade, and ecological transition zone between land, coastal and marine ecosystems. *Eoburim* has been used as a

cultural space in the village, and has many traditional values, and scenic beauty. These Namhae-gun *Eoburim* occurs along the coast of Namhae or South Sea at more than 16 places within this island. Most of *Eoburim* were created about 300 years ago, and those are outcome of the traditional way of life of our ancestors who lived in harmony with natural environment rather than artificially harming the natural environment.

*Eoburim* at Namhae-gun can be classified into four types based upon their shape, function, and the species conditions in which they are composed. The distribution type of *Eoburim* varies depending on their location. On the east coast of Namhae-gun, there are curve shaped or crescent shaped coastal forest, which are composed of both evergreen broadleaved trees and deciduous broadleaved trees. Along the southern coasts, the coastal village forests are consisted of evergreen coniferous trees, mainly black pine tree. Combination of natural factors such as the amount of annual precipitation, the average temperature, the wind direction, the status of major vegetation in nearby areas, and anthropogenic factors such as cultural and historical backgrounds has created unique vegetational landscape or cultural heritage *Eoburim* at Namhae-gun.

## Classification of lichen distribution in the Republic of Korea by Warm Index

Hyunho Song, Wooseok Kong (Kyung Hee University)

Lichen represents the symbiotic organism in the world. They appeared in the earth since 4.5 billion years ago. They distribute from dessert to polar, and also occur from sea level to high alpine elevations in many environmental conditions. 20,000 species are reported to exist on Earth's land surface. Until now, about 800 species are reported by the taxonomist in the Republic of Korea. But on the geographical distribution of lichens in the Republic of Korea, only very few biogeographical reports are published. We studied distributional type of lichens in the Republic of Korea. On the basis of lichen data collected by Prof. Hur Jae-sun of the Suncheon National University, we classified warm-temperate forest, temperate forest and frigid forest types of in relation to the Warm Index, and the projection of future lichen distribution is simulated by MaxEnt.

## Sustainable Development Plan of the Islands in Korea, The case of Poong-do, Ansan-si

Gayoung Hwang, Hyunhee Kim, Wooseok Kong (Kyung Hee Unviersity)

Along with the concept of exclusive economic zones under the recent U.N. Convention on the Law of the Sea, the importance of maritime territory is emphasized globally, and the importance of the island region is also drawing attention. Within a country, an island has high value and potential as a future exotic tourist resource, a boundary area of the state, and a repository of various biological resources.

Currently, Korea has a total of 3,677 islands, including 487 inhabited islands, and 3,191 uninhabited islands. Considering the size of country, number of islands of Korea (4.21)s larger than Japan (2.03) and the Philippines (2.37).

However, Korea's islands are less accessible and lack of amenities, for example transportation and accommodation compared with inland areas. Most islands are excluded from various development projects. The problem of the outflow of the island's population and aging population has accelerated poor infrastructure of the uninhabited island. That's why the policy of sustainable development and preservation of the island is needed. In this study, we would like to propose a comprehensive development direction for the island region in Korea, making use of the case of the 'Poong-do', located in Ansan, Gyeonggi Province.

## [Movie Clip]

## Albatross

Dobeen Cha, Sangwook Jo (Kyung Hee University)

"Albatross" is a short film produced by two graduate students as their final project for Professor Eperjesi's seminar, "The Anthropocene and Ecocinema." The film was inspired in part by Timothy Morton's Hyperobjects, and touches on a wide variety of ecological issues: food safety, animal rights, plastic pollution, climate change. The film captures the anxiety felt by young Koreans as they navigate the end of the world.