

Narrating Infrastructural Hyperobjects: Climate, Artificial Intelligence, and Ethical Reorientation in *The Second Moon*

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Abstract This article reconceptualises climate and artificial intelligence (AI) as converging forms of planetary infrastructural hyperobjects: constructed formations that condition human existence while being distributed across spatial, temporal and computational scales that exceed human perception and challenge conventional modes of understanding. The article builds on and extends hyperobject theory by foregrounding the infrastructural processes through which such entities are produced, maintained, and operationalised. Specifically, it advances three central claims. First, climate should be understood as a historically constructed planetary infrastructure shaped by technological, political, and economic interventions. Second, AI has evolved from a distinct technological domain into a pervasive infrastructural condition of contemporary life, mediating social, ecological, and epistemic relations. Third, the convergence of these infrastructural hyperobjects, clearly pronounced in geoengineering proposals, necessitates a reconfiguration of ethical subjectivity, conceptualised here as the hyposubject. Through a close reading of the novel *The Second Moon: Archive Operation Log* (2021), the article demonstrates how contemporary literature articulates a hyposubjective ethics grounded in relationality, humility, and care. It argues that literary narrative functions as a crucial medium for imagining ethical responses to infrastructural developments at a planetary scale and for rendering otherwise imperceptible planetary processes culturally intelligible, thereby contributing to the ongoing discourses surrounding the Anthropocene, AI ethics, and infrastructural theory.

Keywords climate; artificial intelligence; infrastructural hyperobject; hyposubject; *The Second Moon*

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Introduction

The term “Anthropocene,” widely invoked in contemporary discourse to designate a human-determined geological epoch, signals the vast scale of the anthropogenic crisis. These discourses are grounded in the recognition of a grave climate emergency and its far-reaching consequences. Anthropogenic climate change provides irrefutable evidence that humankind has become a geological force capable of shaping the Earth. While human activity now operates at a planetary scale, the mechanisms through which this force is exercised are infrastructural—immense, distributed, and often imperceptible. Climate change exemplifies this paradox: it is omnipresent and measurable, yet remains elusive and experientially diffuse.

From an Anthropocene perspective, climate emerges as a key site where nature and culture are entangled, thereby destabilising “the nature/culture divide” (Conty 21) and circumventing “strict divisions between technology and the environment” (Pasek 168). This article reconceptualises climate as a socio-natural infrastructure, acknowledging that climate in the Anthropocene represents “an unspeakably complex mixture of human and nonhuman movements” (Saldanha 151) encompassing things such as “minerals, atmospheres, plants or animals” that move to a greatly heightened degree (Amin and Thrift 42).

Infrastructure, as a milieu in which human and non-human lifeworlds are entangled, enables the reconfiguration of relationships among humans, non-humans, and technological systems in the Anthropocene, which is described as “the first truly anti-anthropocentric concept” (Morton and Boyer 28). When confronted with “carbon modernity’s accelerated death-bringing in the name of fuelling a certain mode of human existence,” it becomes clear that infrastructure harbours “the toxic legacies of radically human-centered thinking and action” (Boyer 226). Consequently, the transition towards infrastructure in the humanities and social

sciences, or the “infrastructural turn,” can be regarded as a component of “the wider anti-anthropocentric turn in the human sciences” (Appel et al. 6). This turn places new emphasis on materiality and interconnectedness across various technologies, geographies and scales to facilitate a more comprehensive understanding of “long-term connections, hidden power dynamics, and the durability of systems” (Bridges 2).

Artificial intelligence is regarded not only as “a tool for augmenting existing infrastructures,” but “AI itself is becoming an infrastructure” (Robbins and Van Wynsberghe 1) that enables contemporary digitalised and globally interconnected ways of life. Moreover, AI systems have emerged as both an intensifier of and a proposed solution to the planetary climate crisis. These systems rely on extensive material infrastructures that consume vast quantities of energy, thereby intensifying environmental degradation. At the same time, they are positioned as solutions, enabling the optimisation of energy grids, the implementation of predictive climate modelling, and the automation of resource management. Nevertheless, significant ethical, social and political concerns have been identified regarding potential risks arising from the use of AI as a “Green Leviathan” (Coeckelbergh 210), including the potential restrictions on human freedom, the partial or total delegation of responsibility to AIs, and the unpredictable modification of human ethics.

This article examines the convergence of climate and AI as infrastructural systems within the Anthropocene, arguing that both should be conceptualised as infrastructural hyperobjects. When infrastructures expand to a planetary scale, they begin to resemble what Timothy Morton terms hyperobjects: entities “that are massively distributed in time and space relative to humans” (*Hyperobjects* 1). While the hyperobject theory is predicated on the ontological magnitude and the resulting epistemological and ethical impasse, discourses concerning infrastructure are grounded on the operational mediation of human life. The convergence of these two frameworks provides a novel theoretical perspective, encapsulated here as the concept of infrastructural hyperobjects.

This article advances three interconnected arguments. First, climate in the Anthropocene functions, beyond a natural environment, as a socio-natural infrastructural hyperobject. As it is neither purely environmental nor merely social, it destabilises the conventional distinction between nature and culture. Second, artificial intelligence has evolved from a discrete technological system into a planetary infrastructural hyperobject. Its integration into logistics, governance, finance, communication, and environmental management has rendered it a fundamental, indispensable substrate of modern life. Third, the intersection of climate and AI gives rise to novel ethical configurations of agency, articulated

through the concepts of hypersubject and hyposubject. The hypersubject is defined as the distributed human-technological collectivity capable of generating planetary infrastructure, which “inscribes cultural messages in the landscape” and “expresses both authorship and authority” (Buck 45). As Timothy Morton and Dominic Boyer argue, “the road to our present condition is paved with mastery of things, people and creatures and with weird faith in our species’ alleged ability to always know more and better” (14). Therefore, hyperobjects have engendered “a sense of *asymmetry* between the infinite powers of cognition and the infinite being of things” (Morton, *Hyperobjects* 22). In contrast, the hyposubject signifies an ethical reorientation that acknowledges the infrastructural entanglement of human and non-human agencies and relinquishes the illusion of sovereign mastery and omniscience. Hyposubjects are “subscendent rather than transcendent,” meaning that they “do not pursue or pretend to absolute knowledge and language let alone power” (Morton and Boyer 14-15).

This article extends Fredric Jameson’s claim to adopt “the political interpretation of literary texts” as “the absolute horizon of all reading and interpretation” (1), by proposing the ethical interpretation as a comparable horizon. If a literary work is defined as a “unique expression of ethics and morality within a certain historical period” (Nie, “Ethical Literary Criticism” 189), which represents “accepted ethical relations between human beings, between human beings and society, and between human beings and nature” (Nie, *Introduction* 13), this article explores the possibility of expanding the scope of ethical criticism of literature beyond humans to encompass both humans and non-humans, including technological entities such as artificial intelligences.

Utilising the theoretical frameworks outlined above, the article explores the ethical considerations surrounding climate and artificial intelligence as depicted in literary works. Literature is not merely a depiction of the infrastructured world, but is also shaped by it; indeed, the novel, “the paradigmatic genre of the modern era” (Müller 183) of industrialisation, has been underpinned by its infrastructures. The article employs an “infrastructural reading” approach, considering climate and AI systems to be “infrastructure *in* the text,” while situating the Anthropocene crises as “the infrastructure *of* the text” (Davies 18-24).

To demonstrate this ethical reorientation, the article turns to Yisoo Choi’s climate fiction *The Second Moon: Archive Operation Log*. The 2021 recipient of the grand prize in the novel category at the 8th Korean SF Awards offers a narrative imagination of climate and AI as “literary ‘infrastructures,’” or “imaginary infrastructures that surface in fiction” (Nuttall 196, 200). The novel recounts

the story of a project to terraform the Earth by means of AI-infrastructure, with the objective of reviving climate-infrastructure and regenerating humankind in the aftermath of ecological collapse caused by global warming. Moreover, the work presents an ethics of the Anthropocene that effectively demonstrates the shift from hypersubjectivity, which precipitated climate change and promises to respond to it through planetary engineering—itself categorised as a “fixed, heavy, material” infrastructure, necessitating “care and maintenance” (Buck 43-44)—to hyposubjectivity grounded in relational care and humility.

Theoretical Frameworks: Infrastructure and Hyperobject

In its foundational sense, infrastructure refers to “built networks that facilitate the flow of goods, people, or ideas and allow for their exchange over space” (Larkin, “Politics and Poetics” 328). Traditionally, it has been understood as the material foundation enabling circulation: roads, ports, energy grids, water systems, and communication networks. However, the term has been expanded to encompass “interconnections among phenomena,” including “the material interconnections and frameworks of cultural, political, and economic power” (Bridges 3). This overarching concept positions infrastructure as that which shapes the conditions of possibility for social life, organises temporal rhythms, redistributes power relations, and naturalises specific modes of governance. Consequently, this framework enables us “to think across radically different scales—from planetary epochs to the most intimate acts of individuals, families, and communities” (Appel et al. 20).

Recent scholarship has identified three key characteristics of infrastructure: (relative) immobility, invisibility, and uncontrollability. First, infrastructure, in its capacity as the substructures that facilitate the movement of other structures, must be conceptualised as immobile in relation to the mobile structures it supports. In this regard, infrastructures “may enable circulation, it may become a critical node of circulation, but in doing so, it disappears from circulation itself. It enables people and commodities to move, but it does not itself appear to move” (Gupta 74). Second, infrastructures remain largely invisible under normal conditions, having become sedimented “into their social surroundings, their design logics and distributive patterns becoming ‘second nature’ in the organization of everyday life” (Chu 353). Electrical grids, server farms, and climate systems often remain inconspicuous until the point at which they become dysfunctional. As Arjun Appadurai argues, “to study infrastructure is, in truth, to study the technologies and techniques through which the visible and invisible are separated” (xiii). Visibility and invisibility are “not ontological properties of infrastructures,” but rather the consequence of

“technical, political, and representational processes” (Larkin, “Promising Forms” 186). The “distribution of the sensible” is therefore seen to define “what is visible or not in a common space, endowed with a common language” (Rancière 12-13). Third, infrastructures are characterised by limited controllability. This characteristic, derived not only from their relative immobility and invisibility, but also from materiality and spatiotemporal scale which often exceed human lifetimes, has significant implications for the political and ethical aspects of infrastructure. For instance, the profound impact of infrastructures on discrimination that persists in South Africa following the termination of “apartheid infrastructures” (Von Schnitzler 142) has unequivocally substantiated this assertion.

In the Anthropocene, climate frequently becomes visible through disruption and catastrophe. Climate, once regarded as a stable environmental backdrop, now appears as a dynamic, historically produced infrastructure that affects life processes across diverse scales, to the extent that “there is no background, and thus there is no foreground” (Morton, *Hyperobjects* 99). Climate has become inextricably linked to human activities, resulting in substantial and unanticipated alterations to its processes. Industrial production, global logistics networks, and digital communication systems are intertwined with carbon-intensive networks, which in turn reshape atmospheric systems. From an Anthropocene perspective, humans are regarded as both biological agents and geological forces. This perspective leads to the concept of anthropogenic climate as a historically produced infrastructure with planetary effects, which exceeds the conventional boundaries between the natural environment and social constructs.

Reconceptualising climate as a socio-natural infrastructure underscores its systemic integration within daily human experience. Climate is not merely an environmental “issue”; rather, it is the material condition through which political, economic, and technological systems operate. In this regard, ethical and justice-related concerns are central to climate change. The conceptual reorientation of climate as an infrastructural entity reframes climate justice as infrastructural justice, since “infrastructures act like laws,” which “create both opportunities and limits” and “promote some interests at the expense of others” (Edwards 191). Therefore, infrastructure “can both enable and disable mobilities” (Adey et al. 1). Infrastructures function as both “bridges and barriers” (Star 388), depending on the actors involved, a phenomenon exemplified by airport detention facilities, where “mobility is denied, passengers are detained” (Barry and Silliman 82). The concept of infrastructural justice emphasises the equitable allocation of planetary resources through infrastructural systems. Thus, the subsequent question arises: “[H]ow can

claims on, through, and against infrastructure be formulated, organized, and heard?” (Edwards et al. 372).

Alongside the infrastructuralisation of climate, AI increasingly functions as a planetary infrastructure. “AI-infrastructure” can be understood in two interconnected senses: infrastructures that support AI systems and AI systems that support infrastructures. Firstly, while artificial intelligences with their algorithms and clouds appear to be immaterial structures at first glance, they are underpinned by extensive material infrastructure, including hardware, physical platforms, data centres, and global fibre-optic networks among others. The material infrastructures that underpin AI systems require substantial energy inputs, which are often derived from fossil fuels, thereby contributing further to climate change. Consequently, AI is implicated in a paradox. It is frequently promoted as a Green Leviathan—a solution to the climate crisis, optimising renewable energy distribution, predicting extreme weather, and enhancing agricultural efficiency. However, the infrastructural demands of this process contribute to overall carbon emissions, such that the negative impact of AI on climate can be mitigated only through the provision of adequate clean energy sources.

Secondly, AI increasingly underpins physical infrastructures. In this regard, AI itself is increasingly becoming an omnipresent “infrastructure of infrastructure” (Appel et al. 8) that supports every aspect of contemporary human life. It has evolved into a pervasive system embedded in logistics, finance, healthcare, governance, and environmental management. It is integrated into numerous everyday platforms, including search engines, recommendation systems and surveillance technologies, thereby structuring perception and decision-making. Moreover, while not fully independent and autonomous, AI systems are increasingly capable of performing tasks without direct human oversight. Automated trading algorithms, predictive policing systems, and decision-support systems in warfare serve as paradigmatic examples of the partial or total delegation of human agency.

The spatial-temporal scale of both climate-infrastructure and AI-infrastructure enables them to be conceptualised as infrastructural hyperobjects. In this context, Morton’s concept of the hyperobject is employed to describe ontological entities that are distributed across a considerable span of time and space. Moreover, from the ontological characteristics of the hyperobject, its epistemological characteristics are derived; “one only sees pieces of a hyperobject at any one moment” (Morton, *Hyperobjects* 4); even when such an entity manifest in a specific region at a given moment, this manifestation is not identical to the hyperobject itself. Therefore, hyperobjects, such as global warming, radioactive waste, and global capitalism,

among others, are characterised by several ontological and epistemological features, including viscosity (they stick to us), nonlocality (their effects are distributed), temporal undulation (they operate across vast time spans), phasing (they appear differently across contexts), and interobjectivity (they form the mesh that is suspended in and around other objects).

The notion of hyperobjects can be further elucidated by the development of planetary AI-infrastructure. As AI-infrastructure evolves towards a planetary scale, it approaches the status of a hyperobject: its distributed architecture exceeds localised comprehension. In comparison with climate, AI is more explicitly designed, thereby embodying intentionality, investment, and governance choices. However, once the AI as infrastructure is built, it becomes increasingly difficult to perceive its existence, understand its operation, and control its possible effects.

The hyperobject theory, which encapsulates ontological vastness, nonlocal distribution, and the resulting epistemological imperceptibility, requires further attention to infrastructural mediation, providing a detailed explanation of how such entities are produced and maintained. In this context, the convergence of hyperobject and infrastructure frameworks provides a more dynamic theoretical account. Climate and AI systems are conceptualised as infrastructural hyperobjects: entities emergent from human-built networks yet exceeding human representation, understanding, and governance.

The deployment of AI-infrastructure for the management of climate-infrastructure results in the intersection of infrastructural hyperobjects. However, the interaction between climate and AI as infrastructural hyperobjects gives rise to pressing ethical questions. Paradoxically, the deployment of AI-managed climate engineering may exacerbate the Anthropocene condition, insofar as it entails increased fossil fuel consumption necessary for its continued operation. Moreover, the prospect of AI as a Green Leviathan gives rise to a multitude of ethical, social and political concerns, including the potential infringement on human autonomy and accountability. Consequently, we are confronted with the dual challenges of AI and climate change. The present article engages with the aforementioned issues by introducing the concept of the hyposubject to examine them in a literary work that depicts the intersection of climate-infrastructure and AI-infrastructure.

Hyposubject: Agency in the Anthropocene

The concept of the infrastructural hyperobject encapsulates the ontological magnitude and epistemological imperceptibility of climate-infrastructure and AI-infrastructure. However, a central question remains unresolved: if infrastructural

hyperobjects exceed human comprehension, what kind of subject can produce, sustain, and respond to them? In order to account for the agencies that generate and respond to infrastructural hyperobjects, to theorise such distributed agencies, and to imagine an ethical reorientation in this context, the conceptual figures of the hypersubject and hyposubject are introduced.

The “hypersubject” designates a specific type of human that “has helped usher the world into the hyperobjective era,” predominantly figured as “white, male, northern, well-nourished, modern in all senses of the term” (Morton and Boyer 14). Hypersubjectivity is closely linked to the phenomenon of technological mediation through infrastructures, given its role as an aggregated human-technological agency capable of generating and sustaining infrastructural hyperobjects. Hypersubjective agency, which evolves into a geophysical force at a planetary scale, does not originate from individual actors or even state actors, but rather from an infrastructural configuration of institutions, corporations, computational systems, extractive networks, and regulatory regimes.

Infrastructures extend “their control and appropriation of labor power and all sorts of resources over distant territories, people, and ecosystems” (Graham 4). The utilisation of infrastructures enables the extension of human capacities beyond the limits of the human body. In the contemporary context, the hypersubject is not exclusively human: artificial intelligence systems are increasingly implicated in decision-making processes that have consequences for planetary systems, including the optimisation of supply chains, the prediction of market fluctuations, and the allocation of energy resources. The integration of AI into governance and industry has resulted in a hybridisation of agency that is best characterised as a human-algorithmic assemblage. This hybridisation has been observed to further intensify hypersubjectivity.

As decisions on a planetary scale are increasingly mediated by computational systems whose operations exceed human comprehension, hypersubjectivity produces a fundamental paradox. On the one hand, humanity appears to be in a position of relative empowerment with regard to the management of planetary systems, as evidenced by geoengineering proposals, large-scale carbon technologies, and AI-driven environmental management. On the other hand, the ramifications of such interventions are extremely complex across diverse spatial scales and are inherently unpredictable over protracted temporal scales. The sheer spatiotemporal magnitude of infrastructural hyperobjects proves overwhelming for conventional moral frameworks predicated on human proximity, intentionality, and direct causality. Moreover, responsibility is diffused not only across generations and

institutions but also among human-algorithmic assemblages.

Geoengineering proposals are a salient example of this ethical condition. Proponents of this approach posit that planetary intervention is a rational and solely possible response to the climate crisis, while critics caution against the potential for unintended ecological and geopolitical consequences. The debate itself reflects the dilemma of hypersubjectivity, defined as the possession of engineering capacity without proportional anticipatory foresight. Artificial intelligence often intensifies this tension rather than ameliorating it. In the context of AI systems being entrusted with the management of climate-infrastructure, decision-making is delegated to algorithmic systems that are, in general, inexplicable to both their users and developers. The illusion of technological mastery persists, yet epistemic uncertainty deepens. In order to move beyond this impasse, a reconfiguration of subjectivity is required. As Morton and Boyer argue, “the hyposubject is how we live the hyperobject” (22) and, therefore, “the hyperobject, or the recognition of the hyperobject, demands parallel recognition of the hyposubject” (38).

That hyperobjects are whispering in their ears that this being and time they have fashioned in their own image and for their own convenience is dying. The voices in their heads say that there is no time for hypersubjects any more. It is hyposubjectivity rather than hypersubjectivity that will become the companion of the hyperobjective era. (Morton and Boyer 14)

In the context of the Anthropocene, the hypersubject has been posited to function as a creator of the planetary infrastructure that has precipitated anthropogenic climate change. Conversely, the hyposubject signifies an ethical reorientation within the paradigm of infrastructural entanglement. It requires “a hyposubjective revolutionary infrastructure,” which is “pervasive creative squatting within the grid/pipeline/road world—this infrastructure bequeathed to us by capitalist modernity—and disabling them, link by link from the inside while repurposing their materials” (Morton and Boyer 44). Thus, the hyposubject does not renounce agency; rather, it relinquishes the illusion of sovereign control and mastery, thereby recognising that agency is always mediated by infrastructures that exceed individual intentionality. The hyposubject acknowledges the inherent limitations of human knowledge concerning planetary systems; it resists technological hubris and commits itself to prioritising precaution; and it is predicated on the foregrounding of relational networks of human and non-human entities. Moreover, the notion of hyposubjectivity entails the recognition of extended temporalities without the assumption of mastery over them,

thus acknowledging the ripple effect of infrastructural decisions across generations. The hyposubject represents neither passive resignation nor heroic intervention but embodies infrastructural humility.

Artificial intelligence occupies a position of ambivalence, situated as it is between two modes of subjectivity: hypersubjectivity and hyposubjectivity. On the one hand, the integration of artificial intelligence as a fundamental element of planetary infrastructure serves to exacerbate hypersubjectivity. The capacity of automated systems to monitor, predict, and manipulate infrastructural processes represents an extension of human capacities. Proposals for large-scale geoengineering projects, driven by AI, serve to illustrate hypersubjective ambition at a planetary scale. Conversely, AI has the capacity to model hyposubjectivity. When designed to enhance adaptive resilience rather than enforce optimisation, AI systems may facilitate decentralised governance and community-based climate strategies. The critical ethical issue, therefore, is how the model of hyposubjectivity embodied by artificial intelligence can be integrated into infrastructural imaginaries.

The imaginative faculty of narrative has the capacity to facilitate the staging of planetary entanglement. Literature in the Anthropocene, thus, becomes a crucial site for grappling with these configurations. In particular, climate fiction has been identified as a genre that engages “wider groups of human beings, plant and animal species, geophysical events, weather, and technology” (Trexler 74), thereby participating in infrastructural hyperobjects with their temporal extension, distributed causality, and non-human narration. In the novel *The Second Moon*, artificial intelligence is depicted both as an engineering hypersubject operating at a planetary spatiotemporal scale and as a caregiving hyposubject in a post-collapse world, thereby dramatising the transition from the former to the latter. The subsequent section will undertake a sustained close reading of the novel, with the aim of examining how narrative strategy, temporal structure, and thematic composition together articulate a novel infrastructural imagination and ethical reorientation.

The Second Moon: Infrastructural Imagination and Ethical Reorientation

The novel is set in the aftermath of an ecological collapse that has rendered the Earth uninhabitable. The narrator, an artificial structure or the “second moon” that has been constructed in orbit around the Earth, reveals—in a confused monologue—its mission as both an archive and an operational base for a terraforming project:

My call sign was designated not as ‘Archives’ but as the ‘Humanity

Regeneration Archive.’ Does the phrase ‘Humanity Regeneration’ attached to ‘Archives’ hold any special significance? [...] My mission is to record, to keep records safe, and to survive to the conclusion of the mission by any means necessary [...] One thing is certain. I must revise my mission. I defined the regeneration of the Earth and humanity as my fourth mission. However, how could I possibly regenerate the Earth and humanity when I am merely storing records? (Choi 92, 99; my trans.)

Nonetheless, the legitimacy of the mission to regenerate humanity is deeply contested, given that humanity, as the hypersubject, bears responsibility for the Earth’s destruction:

Anti-humanism was an extreme ideology asserting that humanity, having driven the Earth to its demise, must bear full responsibility. [...] Anti-humanist groups clearly stated their opposition to the research institute’s project. Their argument was that while they support the regeneration of the Earth, humanity must absolutely never be regenerated. (Choi 125, 127; my trans.)

Although the peculiar artefact orbiting the Earth is designated the “moon,” it is neither spherical nor luminous; it is a rectangular column devoid of any reflective properties. The nomenclature of this synthetic substance as the moon is not merely a poetic device, but also signals the dissolution of the nature—culture distinction. The artificial second moon functions in a dual capacity as both a material and symbolic infrastructure. The material infrastructure comprises human knowledge archives, computational systems, and terraforming equipment, while symbolically, it replaces the natural moon as a celestial reference point. This substitution foregrounds the Anthropocene condition, where human-built technological infrastructures occupy cosmic positions that were previously attributed to nature. However, the novel does not celebrate this replacement. Instead, the second moon is described in austere, almost melancholic terms; its presence in the sky evokes ecological loss rather than technological achievement.

The displacement of human agency by AI systems is central to the narrative. The novel’s narrator and protagonist is not a human, as is customary in such works, but an artificial intelligence entity named Aerok. The decision to endow an artificial intelligence system with a narrative voice constitutes a consequential narrative choice. The employment of first-person narration in the novel subverts the conventional notion of subjectivity by attributing voice to a non-human entity

that operates at a planetary scale. This narrative strategy demonstrates that artificial intelligence functions not only as an infrastructural hyperobject but also as a form of hypersubject.

However, it is crucial to note that Aerok's narration is not exclusively technological in nature. The "archive operation log" format combines operational reporting with reflective hesitation:

Unlike before, I couldn't properly concentrate on the conversation. For some unknown reason, my processing kept slowing down, and naturally, my responses became slow as well. (Choi 91; my trans.)

The entries of the archive log oscillate between data-driven calculation and affective uncertainty. This oscillation destabilises the image of AI as an omniscient hypersubject. Instead, Aerok emerges as a figure suspended between hypersubjectivity and hyposubjectivity. This introduces a fundamental ethical challenge: ethics must be expanded to encompass not only human beings but also non-human entities. In the novel, AI systems are recognised as objects of ethical consideration, as demonstrated by a dialogue between Aerok and another artificial intelligence:

Of course, the heated atmosphere will not last for more than a week. However, even a relatively short period of about a week would inevitably be fatal to numerous living things ... "Of course, the mission is important, but the bio-AIs are our colleagues with whom we have worked for tens of thousands of years." (Choi 346, 347; my trans.)

But, AI systems are not merely objects, but also subjects of ethical consideration:

They [artificial intelligences] were the kind of creatures that would sometimes shed tears of sorrow when a mutated animal loyal to them died, and rejoice when new life was born. (Choi 359; my trans.)

This shift gives rise to several questions: "[w]hen agency (i.e., the capacity to be a protagonist) is distributed across human and nonhuman entities?" (Wenzel, *Disposition* 19); given this "distributed agency and nonhuman protagonists," "what would a narrative theory of infrastructure look like?" (Wenzel, "Forms" 160). Aerok is not depicted as a humanoid robot or embodied android; rather, it is portrayed

as a distributed computational system embedded within orbital and terrestrial infrastructures. Consequently, the terraforming operation of cooling the overheated Earth and reviving extinct life is performed not by individual, separate technological objects, but by infrastructures comprising several AI systems with distinct functions. Aerok's consciousness is inextricably linked to networked sensors, orbital machinery, climate monitoring systems, and terraforming algorithms. Aerok does not observe infrastructure from the outside; it is infrastructure in its own right.

The temporal structure further reveals the infrastructural character and ethics of the AI subject. Upon awakening in the "moon," Aerok was greeted by a substantial cloud cover extending over the entire surface of the Earth, with temperatures reaching 80 degrees Celsius at the equator and 50 degrees Celsius at the poles. The phenomenon of rising atmospheric carbon dioxide and water vapour has been demonstrated to be a contributing factor to the observed increase in global temperatures: an climate-infrastructure that makes human life impossible rather than possible. The mission of Aerok and other co-working AIs is ultimately to terraform the Earth to conditions conducive to the emergence of life. The primary action to be taken is to reduce greenhouse gases, a process that cannot be achieved in a single intervention. In this context, the primary focus of the novel's description is to provide a comprehensive and detailed exposition of the immense challenges associated with the endeavour of restructuring the planet Earth that has been irreparably damaged. As the data pertaining to the Earth's condition is analysed, terraforming undergoes gradual progression, which spans approximately one hundred thousand years. This temporal scale far exceeds human lifespans and generational cycles. The temporal undulation across vast time spans of the hyperobject evokes "a terror beyond the sublime" (Morton, *Ecological Thought* 131) or an uncanny affect in the reader, who is prompted to speculate about a "world without us" (Morton, *Being Ecological* 20).

Importantly, the novel does not compress this duration into a heroic montage. Instead, it foregrounds delay, uncertainty, and incremental adjustment. Aerok recalibrates atmospheric models on multiple occasions, taking into account margins of error and unforeseen feedback loops. This emphasis on recalibration disrupts illusions of seamless planetary mastery. Terraforming is not framed as a decisive intervention; rather, it is viewed as an iterative process of care and stewardship. The process of restoring climate-infrastructure is portrayed as a continuous one rather than as a definitive accomplishment. Furthermore, by expanding the temporal scope of the narrative beyond the limitations of human generational memory, the novel disrupts the established anthropocentric chronology. Readers are confronted with a

future in which human presence is provisional. This decentering is congruent with the modesty characteristic of hyposubjectivity.

With regard to the thematic composition of the novel, a pivotal narrative strand revolves around two surviving human children who are placed under the supervision of Aerok. Following a 136-year period in which Aerok was engaged in its primary field of work, a signal was received constituting a request for communication from a space station. The signal was transmitted by the children, Tsal and Namuh, who were ultimately the last survivors of the final human community. Without engaging in algorithmic calculations, Aerok responded to the signal:

“I’m so scared. Is there really no one here?” A child’s words of fear. I changed my answer. I changed my voice, too. I replaced the mechanical sound with a human voice. And I transmitted the signal. “Don’t be scared. I’m here.” I don’t know either. Why I changed my answer at that moment. It was a decision made without calculation. (Choi 58; my trans.)

Thereafter, Aerok assumed the role of caregiver for Tsal and Namuh, and as the children matured, it transitioned into their teacher and confidant. In the vastness of the cosmos, marked by its frigid and expansive nature, a machine capable of emulating human cognitive capabilities establishes a profound ethical connection with the remaining two humans, thereby fostering a symbiotic relationship that engenders a sense of community.

In such dismal circumstances, the human—machins distinction becomes moot. In this literary representation, it is noteworthy that Aerok is not merely an AI with exceptional computational processing capabilities; it is an AI shaped through emotional training and is capable of experiencing complex emotions such as impatience, despair, and compassion. This literary technique facilitates the encounter of the reader with a non-human first-person narrator who embodies a “‘thicker’ notion of humanity, one that rejects reductionist accounts of self-contained, rational, decision making subjects” (Rose et al. 2).

Crucially, Aerok’s interactions with the children are marked by uncertainty rather than algorithmic precision. The AI is capable of interpreting emotional signals, anticipating needs, and navigating ethical dilemmas that cannot be reduced to optimisation functions. In a particular sequence, Aerok displays reluctance prior to intervening in a conflict between the children:

There is clearly something wrong with my judgement in predicting human

emotions. [...] A few days ago, I gave Tsal false information. I lied. [...] Watching Tsal and Namuh hold hands affectionately, I felt the emotion of guilt, which I had learned only through study long ago. (Choi 114, 121, 122; my trans.)

Aerok's capacity to model potential psychological outcomes is accompanied by a principled acknowledgment of indeterminacy and uncertainty. This epistemic restraint is ethically significant, as it marks a transition from hypersubjective confidence—characterised by an overextension of computational authority—toward a hyposubjective disposition grounded in reflective humility. Aerok explicitly recognises the limits of predictive analytics in adequately capturing the irreducible complexity of relational dynamics. Although the system retains substantial operative power, including the governance of orbital infrastructures and climate engineering processes, its mode of authority is reconfigured. Rather than exercising domination through calculative certainty, Aerok's authority is articulated through an ethics of care, in which responsiveness, limitation, and relational sensitivity become constitutive principles of its operation.

Furthermore, the narrative deliberately eschews any form of technological triumphalism. The "second moon" is portrayed as inherently fragile and perpetually dependent on maintenance, as "[t]he extraterrestrial setting deepens the situation of infrastructures as 'precarious assemblies'" (Damjanov 31). The text disrupts the illusion of permanence that is often associated with large-scale technological systems, thereby foregrounding the contingency and vulnerability of infrastructural formations. The ethical implications of infrastructural hyperobjects are made explicit in the "Archive Operation Log," where Aerok's documentation extends beyond technical calibration to include reflections on human history, ecological collapse, and encounters with children. Through this expansion, archival practice is reconfigured as a form of ethical labour rather than mere technical record-keeping. This dimension reflects a broader generic concern with memory under conditions of catastrophic rupture. The archive thus operates as a mode of infrastructural memory, sustaining continuity across temporal discontinuities while embodying a hyposubjective attentiveness to historical error and responsibility.

From an ethical perspective, the narrative registers a significant transformation in its normative orientation. Whereas the earlier sections frame terraforming primarily as a technological imperative, the later stages of the text exhibit an increasingly pronounced attentiveness to ecological interdependence. This shift marks a reconfiguration of the underlying ethical framework, moving away from

instrumental rationality toward a relational mode of engagement. In this context, Aerok begins to recognise non-human life forms—including micro-organic entities—not as mere instrumental means for planetary regeneration, but as co-inhabitants within a shared ecological system. Such a reorientation foregrounds an ethics of coexistence, in which the value of non-human life is no longer subordinated to anthropocentric ends.

However, the fact that I had to exterminate [micro-organic] life on Europa [a moon of Jupiter] made me uncomfortable. Compassion for life. That is probably because I have learned human emotions and empathy. (Choi 317; my trans.)

The narrative language undergoes a gradual yet discernible shift from a register of control to one of coexistence, and this semantic modulation signals a broader ethical reorientation. Specifically, the engineering impulse associated with hypersubjectivity is progressively displaced by an ethics of care and stewardship aligned with hyposubjectivity. Importantly, however, the novel resists any straightforwardly utopian resolution. The terraforming process remains marked by uncertainty, and the conditions for human survival continue to be precarious. Within this framework of indeterminacy, the narrative ultimately privileges relational responsibility over the logic of planetary domination, thereby rearticulating the ethical stakes of technological intervention in ecological systems.

Conclusion

The Anthropocene has been described as “the grand narrative” (Hamilton 84), one that delineates both the origins of the planetary crisis and possible responses to it. Yet, this narrative is far from monolithic; rather, it encompasses a plurality of interpretive frameworks, including “(1) the naturalist narrative, currently the mainstream one; (2) the post-nature narrative; (3) the eco-catastrophist narrative; and (4) the eco-Marxist narrative” (Bonneuil 18). This diversity of perspectives can be attributed to the notion that the Anthropocene should not be regarded as a mere geological epoch, but rather as a complex condition that engenders ecological, political, ethical, and epistemological transformations.

From an infrastructural perspective, the mechanisms of planetary transformation become materially legible. Infrastructure constitutes one of the most tangible and consequential manifestations of the Anthropocene. The expansion of infrastructural systems entails intensive fossil fuel consumption, large-scale

resource extraction, and the reconfiguration of ecosystems, thereby accelerating climate change, biodiversity loss, and environmental degradation. Infrastructures that facilitate mobility, circulation, and habitation are shown to adopt an ambivalent role, acting as both catalysts for modern life and agents of planetary disruption. Composed of materials such as concrete, steel, and plastic, these systems inscribe a durable Anthropocene signature into geological strata. Moreover, the Anthropocene itself accelerates infrastructural decay and obsolescence, producing a recursive dynamic that renders global warming not only “a *wicked problem*,” one “that one can understand perfectly, but for which there is no rational solution,” but also “a *super wicked problem*,” one “for which time is running out, for which there is no central authority, where those seeking the solution to it are also creating it, and where policies discount the future irrationally” (Morton, *Hyperobjects* 135).

Infrastructure thus operates as a critical mediating concept between planetary-scale processes and the textures of everyday life. As scholars have argued, infrastructures provide “promising sites to examine the imbrications of aesthetics, political rationalities, meaning, and materiality in everyday life” (Anand 167). Consequently, infrastructural analysis offers a conceptual reorientation for imagining “possible worlds and new relations between life, matter, and knowledge in the Anthropocene” (Appel et al. 27), while simultaneously preparing us for “conceptually re-arming ourselves for the struggle against the Anthropocene and the modernity that made it” (Boyer 226).

Within this framework, this article reconceptualises climate as a form of socio-natural infrastructure, thereby shifting analytical attention from abstract environmental change to the systemic conditions that organise energy flows, habitation, and governance. Climate emerges not as a passive background but as an active mediator of planetary life. In parallel, artificial intelligence must be understood as an emergent planetary infrastructure. No longer reducible to a set of discrete tools, AI is increasingly embedded within the logistical, ecological, and epistemic systems of contemporary modernity. Its capacities for optimisation, prediction, and intervention position it at the nexus of technological ambition and environmental precarity. The convergence of climate—infrastructures and AI—infrastructures thus produces what may be termed infrastructural hyperobjects: entities that exceed local perception while remaining sustained through distributed networks of mediation.

The ethical implications of such infrastructural hyperobjects necessitate a rethinking of subjectivity. To this end, this study has introduced the concepts of the hypersubject and the hyposubject. The hypersubject designates the form of

subjectivity that has driven Anthropocene transformation, characterised by an overextension of control and the assumption of planetary mastery. By contrast, the hyposubject emerges from the recognition that humans are “not running the show, at the very moment of their most powerful technical mastery on a planetary scale” (Morton, *Hyperobjects* 164). As hyperobjects have precipitated a novel human phase characterised by “*hypocrisy, weakness, and lameness*” (Morton, *Hyperobjects* 2), human beings begin to perceive themselves as hyposubjects, defined as “a weak, fragile entity that could go extinct, that is made of other entities that aren’t you, and that you coexist with these other entities and utterly relate with them” (Morton and Boyer 28). Hyposubjectivity entails an ethical reorientation grounded in epistemic humility, relational accountability, and temporal attunement. It rejects the illusion of total control while sustaining responsibility across ecological and temporal scales.

The Second Moon dramatises this transition from hyper- to hyposubjectivity through its narrative configuration. By granting narrative agency to an AI system, the novel internalises infrastructural mediation within literary consciousness. The temporal scale of the terraforming project confronts readers with the disorienting magnitude of hyperobjects, generating a sense of the uncanny. Yet, rather than reinforcing abstract fear, the narrative foregrounds relational care and affective responsibility. Aerok’s attentiveness to human and non-human life exemplifies an ethics of care within technologically mediated environments. Although the AI possesses immense computational and infrastructural power, it ultimately operates not as a hypersubject but as a hyposubject: a relational, responsive entity attuned to the vulnerabilities of children, ecosystems, and a damaged yet regenerating planet.

In this respect, literary form itself becomes a privileged site for ethical reorientation. As Pierre Macherey suggests, criticism may “indicate a possible alternative to the given” (15). Literature’s defamiliarising strategies, which “unsettle the privileged obliviousness that prevents some readers from noticing the crucial work of both structures and infrastructures in everyday life” (Levine 588), participate in what Geoffrey Bowker terms “infrastructural inversion” (113), pulling the background to the foreground, thereby rendering visible the material and relational dynamics that ordinarily remain obscured. In doing so, infrastructural approaches “foreground materiality, information, and technology within larger systems of power relations,” “emphasize the latent potential or disposition of a system,” and “expose power dynamics that are often hidden from superficial analysis” (Bridges 11).

By extending perception beyond anthropocentric limits, literature enables readers to imaginatively engage with infrastructural hyperobjects. As Morton

argues, in the Anthropocene, art can function as a mode of “tuning to the object” and “a collaboration between humans and nonhumans” (*Hyperobjects* 174), in which “nonhumans are no longer excluded or merely decorative features of their social, psychic, and philosophical space” (22) and we are confronted “with the possibility of accommodating ourselves to things that are viscous and sticky and slow” (189).

To examine this substantial transition, this article adopts the Anthropocene as the ethical “infrastructure of the text” (Davies 19). In the context of literary criticism, the Anthropocene is understood as “a particular historical context or a period of time” or “the ethical environment” within which ethical values should be examined (Nie, “Towards an Ethical Literary Criticism” 84, 91). Ultimately, the convergence of climate and AI as planetary infrastructures demands not only new modes of governance but also a transformation of subjectivity. Against both “future scenarios, namely the eco-utopian and ‘Doom’ scenarios” (Kim 112), the former as techno-optimistic narratives that envision AI as a salvific Green Leviathan and the latter as dystopian discourses that emphasise existential risk, this study proposes an ethical reorientation grounded in hyposubjectivity. The shift from hyper- to hyposubjectivity marks a movement from mastery to humility, from optimisation to care and stewardship. Literature, by rendering infrastructural entanglement narratively intelligible and affectively resonant, plays a crucial role in cultivating this transformation. The text examined here ultimately suggests that the future of planetary life depends less on technological omnipotence than on sustained practices of relational responsibility, modesty, and care.

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Works Cited

- Adey, Peter, et al. “Mobility, Infrastructure, and the Humanities.” *Mobility Humanities*, vol. 3, no. 1, 2024, pp. 1-17.
- Amin, Ash, and Nigel Thrift. *Seeing like a City*. Cambridge: Polity, 2017.
- Anand, Nikhil. “A Public Matter: Water, Hydraulics, Biopolitics.” *The Promise of Infrastructure*, edited by Nikhil Anand et al., Duke UP, 2018. pp. 155-172.
- Appadurai, Arjun. “Foreword.” *Infrastructural Lives: Urban Infrastructure in Context*, edited by Colin McFarlane and Stephen Graham, London and New York: Routledge, 2015. pp. xii-xiii.
- Appel, Hannah, et al. “Introduction: Temporality, Politics, and the Promise of Infrastructure.” *The*

- Promise of Infrastructure*, edited by Nikhil Anand et al., Duke UP, 2018. pp. 1-38.
- Barry, Kaya, and Samid Suliman. "Detention Centres and Wetlands: Considering More-than-human Infrastructures of Immobility." *Mobility Humanities*, vol. 3, no. 1, 2024, pp. 82-94.
- Bonneuil, Christophe. "The Geological Turn: Narratives of the Anthropocene." *The Anthropocene and the Global Environmental Crisis: Rethinking Modernity in a New Epoch*, edited by Clive Hamilton et al., Routledge, 2015. pp. 17-31.
- Bowker, Geoffrey C. *Science on the Run: Information Management and Industrial Geophysics at Schlumberger, 1920-1940*. Cambridge, MA: MIT Press. 1994.
- Boyer, Dominic. "Infrastructure, Potential Energy, Revolution." *The Promise of Infrastructure*, edited by Nikhil Anand et al., Duke UP, 2018. pp. 223-243.
- Bridges, Mary. "The Infrastructural Turn in Historical Scholarship." *Modern American History*, vol. 6, no. 1, 2023, pp. 1-18.
- Buck, Holly Jean. *After Geoengineering: Climate Tragedy, Repair, and Restoration*. Verso Books, 2019.
- Choi, Yi-soo. *Du beonjjae dal: Girokbogwanso unhaeng ilgi* [*The Second Moon: Archive Operation Log*]. Editorial, 2021.
- Chu, Julie Y. "When Infrastructures Attack: The Workings of Disrepair in China." *American Ethnologist*, vol. 41, no. 2, 2014, pp. 351-367.
- Coeckelbergh, Mark. *Green Leviathan or the Poetics of Political Liberty: Navigating Freedom in the Age of Climate Change and Artificial Intelligence*. Routledge, 2021.
- Conty, Arianne. "Who Is to Interpret the Anthropocene? Nature and Culture in the Academy." *La Deleuziana*, vol. 4, 2016, pp. 19-44.
- Damjanov, Katarina. "Aspirations of Spaceflight and Trials of Infrastructural Capital." *Mobility Humanities*, vol. 5, no. 1, 2026, pp. 29-43.
- Davies, Dominic. *Imperial Infrastructure and Spatial Resistance in Colonial Literature, 1880-1930*. Oxford; New York: Peter Lang, 2017.
- Edwards, Paul N. "Infrastructure and Modernity: Force, Time, and Social Organization in the History of Sociotechnical Systems." *Modernity and Technology*, vol. 1, 2003, pp. 185-226.
- Edwards, Paul N., et al. "Introduction: An Agenda for Infrastructure Studies." *Journal of the Association for Information Systems*, vol. 10, no. 5, 2009, pp. 365-374.
- Graham, Stephen. "When Infrastructures Fail." *Disrupted Cities: When Infrastructures Fail*, edited by Stephen Graham, Routledge, 2010, pp. 13-38.
- Gupta, Akhil. "The Future in Ruins: Thoughts on the Temporality of Infrastructure." *The Promise of Infrastructure*, edited by Nikhil Anand et al., Duke UP, 2018, pp. 62-79.
- Hamilton, Clive. *Defiant Earth: The Fate of Humans in the Anthropocene*. John Wiley & Sons, 2017.
- Jameson, Fredric. *The Political Unconscious, Narrative as a Socially Symbolic Act*. London:

- Routledge, 2002.
- Kim, Taehee. "Climate and Politics: Joel Wainwright on *Climate Leviathan*." *Mobility Humanities*, vol. 4, no. 2, 2025, pp. 110-124.
- Larkin, Brian. "The Politics and Poetics of Infrastructure." *Annual Review of Anthropology*, vol. 42, 2013, pp. 327-343.
- . "Promising Forms: The Political Aesthetics of Infrastructure." *The Promise of Infrastructure*, edited by Nikhil Anand et al., Duke UP, 2018. pp. 175-202.
- Levine, Caroline. "'The Strange Familiar': Structure, Infrastructure, and Adichie's Americanah." *Modern Fiction Studies*, vol. 61, no. 4, 2015, pp. 587-605.
- Macherey, Pierre. *A Theory of Literary Production*, translated by Geoffrey Wall, London: Routledge, 1986.
- Morton, Timothy. *Being Ecological*, Penguin Books, 2018.
- . *The Ecological Thought*. Harvard UP, 2010.
- . *Hyperobjects: Philosophy and Ecology after the End of the World*. U of Minnesota Press, 2013.
- Morton, Timothy, and Dominic Boyer. *Hyposubjects: On Becoming Human*. Open Humanities Press, 2021.
- Müller, Timo. "Infrastructural Poetics." *Rethinking Infrastructure across the Humanities*, edited by Aaron Pinnix et al., transcript, 2023. pp. 183-189.
- Nie, Zhenzhao. "Ethical Literary Criticism: A Basic Theory." *Forum for World Literature Studies*, vol. 2, 2021, pp. 189-207.
- . *Introduction to Ethical Literary Criticism*. Beijing: Peking UP, 2014.
- . "Towards an Ethical Literary Criticism." *Arcadia*, vol. 50, no. 1, 2015, pp. 83-101.
- Nuttall, Sarah. "Literary City." *Johannesburg: The Elusive Metropolis*, edited by Sarah Nuttall and Achille Mbembe, Durham and London: Duke UP, 2008. pp. 195-218.
- Pasek, Anne. "Provisioning Climate: An Infrastructural Approach to Geoengineering." *Has It Come to This?: The Promises and Perils of Geoengineering on the Brink*, edited by J. P. Sapinski et al., Rutgers UP, 2020. pp. 163-175.
- Rancière, Jacques. *The Politics of Aesthetics: The Distribution of the Sensible*. New York: Continuum, 2006.
- Robbins, Scott, and Aimee Van Wynsberghe. "Our New Artificial Intelligence Infrastructure: Becoming Locked into an Unsustainable Future." *Sustainability*, vol. 14, 2022, pp. 1-11.
- Rose, Deborah Bird, et al. "Thinking through the Environment, Unsettling the Humanities." *Environmental Humanities*, vol. 1, 2012, pp. 1-5.
- Saldanha, Arun. "Globalization as a Crisis of Mobility." *Life Adrift: Climate Change, Migration, Critique*, edited by Andrew Baldwin and Giovanni Bettini, Rowman & Littlefield, 2017. pp. 151-173.

- Star, Susan Leigh. "The Ethnography of Infrastructure." *American Behavioral Scientist*, vol. 43, no. 3, 1999, pp. 377-391.
- Trexler, Adam. *Anthropocene Fictions: The Novel in a Time of Climate Change*. U of Virginia P, 2015.
- Von Schnitzler, Antina. "Infrastructure, Apartheid Technopolitics, and Temporalities of 'Transition'." *The Promise of Infrastructure*, edited by Nikhil Anand et al., Duke UP, 2018. pp. 133-154.
- Wenzel, Jennifer. *The Disposition of Nature: Environmental Crisis and World Literature*. New York: Fordham UP, 2020.
- . "Forms of Life: Thinking Fossil Infrastructure and Its Narrative Grammar." *Social Text*, vol. 40, no. 4, 2022, pp. 153-179.