Advances in 21st Century Human Settlements

Kon Kim
Heewon Chung *Editors*

Gated Communities and the Digital Polis

Rethinking Subjectivity, Reality, Exclusion, and Cooperation in an Urban Future

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Preface

This edited collection provides an alternative discourse on cities evolving with physically and virtually networked communities—the 'digital polis'—and offers a variety of perspectives from the humanities, media studies, geography, architecture, and urban studies. As an emergent concept that encompasses research and practice, the digital polis is oriented toward a counter-mapping of the digital cityscape beyond policing and gatekeeping in physical and virtual gated communities. Considering the digital polis as offering the potential for active support of socially just and politically inclusive urban circumstances in ways that mirror the Greek *polis*, our attention is drawn toward the interweaving of the development of digital technology, urban space, and social dynamics. The four parts of this book address the formation of technosocial subjectivity, real-and-virtual combined urbanity, the spatial dimensions of digital exclusion and inclusion, and the prospect of emancipatory and empowering digital citizens. Individual chapters cover varied topics on digital feminism, data activism, networked individualism, digital commons, real-virtual communalism, the post-family imagination, digital fortress cities, rights to the smart city, online foodscapes, and open-source urbanism across the globe. Contributors explore the following questions: what developments can be found over recent decades in both physical and virtual communities such as cyberspace, and what will our urban future be like? What is the 'digital polis' and what kinds of new subjectivity does it produce? How does digital technology, as well as its virtuality, reshape the city and our spatial awareness of it? What kinds of exclusion and cooperation are at work in communities and spaces in the digital age? Each chapter responds to these questions in its own way, navigating readers through routes toward the digital polis.

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Contents

Introduction: The Digital Polis and Its Practices—Beyond Gated Communities

Heewon Chung and Kon Kim

Abstract This chapter introduces the concept of the 'digital polis' as the focus of this edited collection, which investigates the idea along the dimensions of subjectivity and reality as well as in terms of exclusion and cooperation in communities across physical and virtual urban spaces. Tracing back to Mumford's description of the city as media and its development by Kittler, the chapter launches the 'digital polis' as a key concept underpinning a new theoretical framework that brings to the fore the (re)production of power, knowledge, and space by physically and virtually networked communities, thereby expanding the scope of research for Urban Humanities in contemporary urban environments. The questions we explore in the book revolve around how people, urban spaces, and technologies relate to and affect each other in an urban future. With the advent of a digital divide that produces cyberspace as a kind of gated community, what will our urban future be like? What is the 'digital polis' and what kinds of new subjectivity does it produce? How do digital technology and its virtuality reshape the city and our spatial awareness of it? What kinds of exclusion and cooperation are at work in communities and spaces in the digital age? This introduction helps readers navigate the following chapters to open avenues for research and to build new discourses on the 'digital polis' as the grounds for a genuinely humanizing urbanism in latent futures, or in other words, futures in the making that are 'on the way'.

Keywords Digital polis · Gated community · Urban humanities · Alternative urbanism

In her witty and satirical video *How Not to Be Seen* (2013), German artist and critic, Hito Steyerl demonstrates five lessons in being invisible in the digital age. The fourth lesson, entitled 'How to Be Invisible by Disappearing', presents 'thirteen ways of becoming invisible by disappearing', perhaps parodying the title of American

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Fig. 1 Still from *How Not to Be Seen: A Fucking Didactic Educational.MOV File* (2015). Image courtesy of the artist, Andrew Kreps Gallery, New York and Esther Schipper, Berlin/Paris/Seoul

modernist poet Wallace Stevens's 'Thirteen Ways of Looking at a Blackbird'. If Stevens's poem ponders on how to observe an object, Steyerl's essayistic video asks: 'how do people disappear in an age of total over-visibility?' (Steyerl 2013). Interestingly enough, the first answer that the video offers is 'Living in a Gated Community'. With this voiceover, an image of a luxurious residence is given, with the subtitle of 'Safe and Secure: Gated Community with Multiple Tier Security' (Fig. 1). Utilizing clichés of promotion video images provided by real estate developers, this section intends to make a twisted comment on the possibility of the separation and 'filtering' of certain groups of people and/or their images from a territory of (in)visibility in the era of digital technology.

When Jeremy Rifkin in his seminal work *The Age of Access* (2000) opens the chapter 'Access as a Way of Life' with the subject of gated communities, he rightly recognizes that the problem of accessibility speaks to the double dimensions of community: that is, both communities based on physical space and cyberspace as a virtual community.

> Part of the appeal of gated communities is the belief that by living with others who share common values and enjoy comparable incomes, and by being able to shut out others who might threaten real estate values, one's investment in home and property can be secured.

> The gap between the possessed and the dispossessed is wide, but the gap between the connected and the disconnected is even wider. The world is fast developing into two distinct civilizations—those living inside the electronic gates of cyberspace and those on the outside. … The separation of humanity into two different spheres of existence—the so-called digital divide—represents a defining moment in history. (123, 13–14)

As Steyerl's *How Not to Be Seen* aptly puts it, residents of gated communities pursue security and invisibility from others by denying public access to their common space. Likewise, as the word 'digital divide' indicates, cyberspace has arguably evolved into a kind of gated community despite its potential as a virtual commons. As is widely known, the Internet and the World Wide Web was once hailed as the advent of a global commons where users can both produce and receive information by using new technology. What shifted over recent decades, then, and what will our urban future be like? What is the 'digital polis' and what kinds of new subjectivity does it produce? How do digital technology and its virtuality reshape the city and our spatial awareness of it? What kinds of exclusion and cooperation are at work in communities and spaces in the digital age? The title of the book invites us to explore these questions.

1 From Global City to Global Polis

Before giving a detailed overview of this edited collection and the concept of the 'digital polis' that it explores, we will briefly introduce the history of research carried out by the Institute for Urban Humanities (IUH) over the past decade. In 2007, IUH opened up the interdisciplinary field of 'Urban Humanities' with the support of the National Research Foundation of Korea, launching a major project entitled 'Humanistic Vision of Global Polis'.[1] IUH coined the term 'global polis' in order to rediscover the potentiality of the city as a community in which political agency is not entirely dominated by capitalistic networks in the age of capitalist geopolitics and globalization (Kwack 2009). In this view, the 'global polis' was proposed as a term that would rewrite the definition of the 'global city' as proposed by Saskia Sassen (2001), thereby suggesting post-colonial implications for a counter-discourse while both endorsing and criticizing Sassens's analysis of metropolises mainly focused on the Global North. The project searched for diverse possibilities toward a global polis through multidisciplinary work by philosophers, literary researchers, historians, sociologists, geographers, and urbanists at IUH. Themes covered during the project include the cosmopolis and global city, gender justice, critiques of the capitalist production of space and gentrification, commons and communality, the production of urban subjectivity and literary community, and more. In addition, IUH issued twenty-five edited collections and monographs during the project, including *The Ambivalence of Global Polis and the Perspectives of Urban Humanities* (2010), which is the fruit of the first three-year phase of the project and comprises interdisciplinary research articles on

[1] https://ihuos.uos.ac.kr/eng/eng2_2.php.

the global polis, the political economy of difference, and other relevant subjects. Later during the project, IUH also published an anthology, *The Humanities of Seoul* (2016), a result of the 2015 Seoul Humanities Project—a team effort by IUH and the Seoul Institute, a think tank in the megacity of Seoul. This edited collection 'sought to record the present of the city of Seoul' and the interiority of Seoulites 'from the perspective of humanistic reflection'.[2] With these varied academic research projects and ensuing publications for a broader reading public, IUH has endeavored to enrich the idea of the global polis simultaneously through its scholarly conceptualization and through the dissemination of the outcomes of our academic efforts.

2 From Digital City to Digital Polis

Building upon a refined idea of the global polis, IUH embarked on a novel research project, 'Humanistic Vision of Digital Polis: Digital Urbanism and Post-urban Communities', with the support of the National Research Foundation of Korea in 2019.[3] Central to the research project is the work of decoding and critically revisiting the multifaceted aspects of digital urbanity, and thereby paving paths toward open urban communities and communality in the digital age beyond policing and against gatekeeping as exclusion. To this end, IUH coined the term 'digital polis' to contemplate a digital city discourse based on interdisciplinary scholarship, such as that of Manuel Castells, Lewis Mumford, Henri Lefebvre, Friedrich Kittler, David Harvey, Shoshana Zuboff, and Edward Soja. Since Castells's groundbreaking work *The Informational City* in 1989, much discourse on the structure of contemporary cities has taken into consideration information and communication technology (ICT) as a crucial element and mediator. Unsurprisingly, the digital city has become one of the key issues of urban studies. A considerable number of researchers have used the term 'digital city' interchangeably with 'smart city' (Ishida and Isbister 2000); however, more recent works on the digital and smart city have made attempts to define the boundaries of this terminology (Dameri and Cocchia 2013; Cocchia 2014). According to Annalisa Cocchia, the most cited definitions of 'smart city' include ICT as its essential aspect, while those of 'digital city' tend to accentuate its virtuality ('*a virtual digital space* for a city') and consider digital technology as its communicative devices and infrastructure (32). The aforementioned discourse on the digital city commonly recognizes its potential as communication media, and media studies also question the relationship between digital technology, digital media, and the production of urban places. For instance, developing Yi-Fu Tuan's (1979) renowned distinctions of space and place, Germaine R. Halegoua in her book *The Digital City* (2019) defines place as performative, and makes the diagnosis that people are 'replacing the city' in contemporary urban places; that is, they perform 'the subjective,

[2] http://49.247.26.159/books/3080/?book_category=humanities.

[3] https://ihuos.uos.ac.kr:57009/eng/eng2_1.php.

habitual practice of assessing and combining physical, social, and digital contexts in order to more fully understand one's embeddedness within urban places' (8).

In retrospect, it was Mumford who had already described the city as media as early as the 1960s:

> Through its concentration of physical and cultural power, the city heightened the tempo of human intercourse and translated its products into forms that could be stored and reproduced. … By means of its storage facilities (buildings, vaults, archives, monuments, tablets, books), the city became capable of transmitting a complex culture from generation to generation. … As compared with the complex human order of the city, our present ingenious electronic mechanisms for storing and transmitting information are crude and limited. (569)

Citing this paragraph in his essay 'The City Is a Medium' (1996), Kittler assesses that Mumford obviously comprehends cities to be comparable and compatible with computers—'and therefore media' (721). If media can 'record, transmit and process information' (722), Kittler insightfully indicates that the city is a medium with its own inscription and storage systems, such as buildings, archives, monuments, and books, that enable the recording and transgenerational transmission of information. In her talk at IUH's 2021 international conference, 'Mapping Digital Cityscapes', Tiziana Terranova (2021) updates Kittler's argument and writes that 'the city is a technosocial medium'. By deploying the term 'technosocial' to describe 'the process by which the social has become directly coded and recursively reconfigured by digital communication technologies as a space of security, that is a [Foucauldian] milieu or [Kittlerian] medium of circulation', Terranova offers the analysis that technosocial mediation now pervades all spaces: '[t]here is no social relation (between buyers and sellers, teachers and students, between friends and between lovers, between hosts, between politicians and electors) that has not become somehow technically encoded as a relation' (42).

With these scholarly perspectives on the digital city from various fields in mind, this edited collection launches the 'digital polis' as our key concept and offers a new theoretical framework for thinking through the (re)production of power, knowledge, and space by both physically and virtually networked communities in contemporary urban environments. Instead of the digital 'city', we use the terminology of the digital 'polis' for a more nuanced articulation of the project's participatory and alternative orientation toward a counter-mapping of the digital cityscape. Considering the potential of the digital polis in the active support of socially just and politically inclusive urban circumstances that mirror the Greek *polis*, our attention is drawn toward the interweaving of the development of digital technology, urban space, and social dynamics. As cities and urbanity incorporate multifarious levels of actors such as people, their cultures, mediated communication among them, social/physical space, the architectural built environment, and networked or virtual communities, research on the digital polis requires an inherently interdisciplinary approach.

The understanding of the digital polis put forth in these chapters, as an emergent definition encompassing research and practice, may not converge at a single vanishing point; however, each chapter deliberates on the term in its own way, and readers will be able to navigate their routes in the following pages. Definitions of the digital polis may include:

- a de-territorial network and hybridity, an urban network where the flows of technology, people, goods, money, and images are intricately interconnected (chapter "Digital Polis and the 'Safe' Feminism: Focusing on the Strategies of Direct Punishment and Gated Community")
- a digital version of the 'space of appearance' that Hannah Arendt (1958) depicts; that is, a space in which the vulnerable subject struggles to overcome one's vulnerability and to appear as an equal within the unequal techno-urban cultural structure (chapter "Toward Digital Polis: Gendered Data (In)justice and Data Activism in South Korea")
- a network that produces the subjection and de-subjectification of networked individuals (chapter "Subjection or Subjectification: Representation of 'Networked Individuals' in Korean Web Novels")
- an urban space that operates simultaneously as a digital medium and through digital media (chapter "Digital Polis and Urban Commons: Justice Beyond the Gated Community")
- a structure of combined operation of three forms: imaginary-virtual, intermediary-virtual, and real-virtual gated communities (chapter "Production and Reproduction of Space and Culture in the Virtual Realm: Gated Communities as the Imaginary, Intermediary and Real Spaces")
- a post-family imagination as a building block to bridge the expanded communities between the pre-digital and digital generations (chapter "The Uniformity of Living Space and the Anxiety of the Middle Class")
- a fragmented production of urban space through multi-layered physical and digital fortification (chapter "Spatial and Digital Fortressing of Apartment Complexes in Seoul: Two Case Studies")
- a radical transition toward a digital version of a 'genuinely humanizing urbanism' in David Harvey's terms (chapter "Inclusion, Exclusion, and Participation in Digital Polis: Double-Edged Development of Poor Urban Communities in Alternative Smart City-Making")
- a more inclusive and collective foodscape emerging through the creation and appropriation of social networks by online-based food hubs (chapter "Online-Based Food Hubs for Community Health and Well-being: Performance in Practice and Its Implications for Urban Design")
- smart cities as a new paradigm of urban transformation with digital third places grounded on 'open source urbanism' as defined by Saskia Sassen (chapter "Third Places: The Social Infrastructure of the Smart City").

These definitions focus on diverse facets of the digital polis that embrace both analyses of, and alternatives to, the contemporary networked city and society. Some chapters emphasize the closed tendency of the digital polis in view of gated communities that operate under the (capitalistic) techniques of governmentality, and others pay more attention to the possibility of the redistribution of power and knowledge within the cityscape of the digital polis in an urban future. With this in mind, the next section outlines what each chapter presents and how they are laid out throughout this edited collection.

3 Overview of Chapters

This book comprises eleven chapters, including this chapter, which introduces background information and the general structure of the book. The following chapters present varied topics regarding digital feminism, data activism, networked individualism, digital commons, real-virtual communalism, post-family imagination, digital fortress cities, rights to the smart city, online foodscapes, and open source urbanism across the globe. This publication is a result of the open dialogue we had during the IUH 2022 international conference, 'Rethinking gated communities in the digital polis: digital pathology, imagination, exclusion, and cooperation', as well as a subsequent selective peer review process. Researchers from numerous fields including philosophy, literature, media and communication studies, geography, architecture, and urban studies have contributed to this book, and their essays are organized across four sections.

4 Part 1: The Digital Polis and the Formation of Technosocial Subjectivity

Part 1 opens with timely diagnoses of the ebullient activism and production of networked individuality in the contemporary South Korean virtual realm, as it witnesses the formation of technosocial subjectivity. Hyun-jae Lee (chapter "Digital Polis and the 'Safe' Feminism: Focusing on the Strategies of Direct Punishment and Gated Community") traces the recent trajectory of digital feminism under the time-space conditions of the digital polis which, in her view, is characterized by 'a de-territorial network and hybridity, unlike traditional cities as territorial places of homogenization'. Developing Soja's discourse on the postmetropolis (2000) into that of the digital polis, Lee explains why some Korean digital feminists test out strategies of forming virtual gated communities that strengthen sexual boundaries and use gatekeeping as a method of digital feminist activism.

In chapter "Toward Digital Polis: Gendered Data (In)justice and Data Activism in South Korea", Namhee Hong analyzes datafication and data activism from a gendered perspective. Datafication is regarded as a new scientific paradigm for quantifying all kinds of sociality and social actions, including personal information (van Dijck 2014), which leads to 'surveillance capitalism' (Zuboff 2019). The data produced and collected across online and urban spaces cause problems of injustice toward marginalized or vulnerable groups such as women. Hong focuses on young women in South Korea as both digital natives and vulnerable subjects, and examines how they make various attempts to improve their techno-cultural conditions through data activism. Data activism is a kind of critical attitude and practice toward big data that uses the given digital affordances in reverse form to produce counter-discourses. If the digital polis is a networked space where diverse people explore their own identities and participate in digital place-making, Korean young women's data activism forges

their own empowerment in it, at the same time as it reveals the unequal techno-urban cultural structure. In this respect, the digital polis questions the promise of technology and datafication. Also, it makes us consider what and how we must develop if we want to move toward a digital polis.

Inhyeok Yu (chapter "Subjection or Subjectification: Representation of 'Networked Individuals' in Korean Web Novels") argues that in the genre of the Korean web novel, the network functions as a device that subordinates the human subject to the huge machine of capitalism, and asserts that these web novels properly grasp the contradictory conditions of capitalism under which subjectification takes the form of subjection. Taking insights from Terranova's famous discussion of 'netslaves' who voluntarily indulge in free labor (2004) and Maurizio Lazzarato's theoretical notion of 'social subjection' and de-subjectification (2014), Yu maintains that the networked individuality represented by contemporary Korean web novels arises from the indivisible two sides of subjection to the network on the one hand and subjectification through the network on the other. Overall, Part 1 contains a critical contribution to the understanding of the digital polis, and its three chapters observe and analyze the formation of technosocial subjectivity within it.

5 Part 2: Real-and-Virtual Combined Urbanity in Seoul and Istanbul

The second part forms a stimulating comparison of Seoul and Istanbul in terms of reality and virtuality. Defining the digital polis as an urban space operating as a digital medium, Eun-joo Kim (chapter "Digital Polis and Urban Commons: Justice Beyond the Gated Community") critically introduces S-Map, or 'Virtual Seoul' (https://smap.seoul.go.kr), unveiled in April 2021 as 'the nation's first urban problem-solving simulation' (Ministry of Land, Infrastructure, and Transport, 2001). After delineating a brief outline of S-Map, Kim raises a question concerning the logic or philosophy of demarcation innate in its design: if S-Map is built by funding from Seoul and taxes from Seoulites, does it exclusively belong to the city and the citizens of Seoul? The author follows by suggesting a reconsideration of the philosophy of urban commons as a principle of the digital polis.

Basak Tanulku (chapter "Production and Reproduction of Space and Culture in the Virtual Realm: Gated Communities as the Imaginary, Intermediary and Real Spaces") argues that there are three categories of virtual gated communities in Istanbul: 'imaginary-virtual gated communities', reproduced in formal websites provided by supply-side actors (developers) to promote themselves; 'intermediary-virtual gated communities' acting between imaginary and real-virtual gated communities, produced through social media open to anyone such as Instagram and Facebook;

and finally, 'real-virtual gated communities' reproduced on various platforms exclusively reserved for their residents/members. Read side by side with chapter "Digital Polis and Urban Commons: Justice Beyond the Gated Community", Tanulku's paper inquires into 'what or who is included and excluded' in the virtual city.

6 Part 3: The Spatial Dimensions of Exclusion in the Digital Polis

The third and fourth parts shift the analytical focus from the conceptual realm of the digital polis to a more concrete and empirical realm. In chapter "The Uniformity of Living Space and the Anxiety of the Middle Class", Yangsook Lee draws attention to the flatness and uniformity of space created by apartments against the backdrop of the anxiety and pain of the Korean middle class, through a contextual analysis of the 'apartment novels' of Park Wan-seo in the 1970s. By highlighting the women's dreams of defamilizing, she raises questions simultaneously about how to break out of a flat and uniform space, and about imagining the transition from an isolated family to a more extended community. Her post-family imagination gives a clue to understanding the transformation of gated urban communities from early modern times to the contemporary digital era in South Korea.

Ji-in Chang and Soe-won Hwang (chapter "Spatial and Digital Fortressing of Apartment Complexes in Seoul: Two Case Studies") investigate the progressive strengthening of spatial and technological means of control in apartment complexes in Seoul. Tracing the evolution of spatial control from the 1970s to the 2020s, the authors argue that the control of access through physical and digital measures is an expression of power derived from surveillance and exclusion. Reinforced by technology, the power that the authors indicate can be turned both outwards and inwards to determine insiders and outsiders. By highlighting the ongoing phenomena of spatial and digital fortressing, this chapter calls for discussion on how urban design and technology can contribute to mitigating social and urban fragmentation against the relentless privatization of space and security.

In chapter "Inclusion, Exclusion, and Participation in Digital Polis: Double-Edged Development of Poor Urban Communities in Alternative Smart City-Making", Kon Kim shifts the focus from upscale apartment complexes to shanty 'jjokbang villages' where the urban poor can afford to live in Seoul. The author explores how the urban poor creates an alternative 'smart city'-making pathway in cooperation with radical social groups outside the institution. His qualitative exploration concludes that radical intermediary intervention deprives the urban poor of opportunities to join official partnerships for government-driven smart city projects, even as such interventions serve, within certain limits, to improve their communal autonomy and build their self-governing system. Arguing that radical intermediary intervention is still seen as unauthorized, unofficial, or unlicensed, the author highlights the double-edged nature of alternative 'smart city'-making for the urban poor, where

their substantive rights to the smart city remain unachieved despite the fact that their radical approach contributes a step toward a genuinely humanizing smart urbanism. Overall, by presenting contrastive case studies from Seoul, Part 3 forms the basis for a more nuanced understanding of socio-spatial exclusion and inclusion in the gated communities that emerge and evolve in the digital polis.

7 Part 4: Toward a More Emancipatory and Empowering Digital Polis

Part 4 introduces more optimistic and hopeful scenarios with a focus on prospective collaboration and cooperation among communities in the digital polis. Sang-hee Kim (chapter "Online-Based Food Hubs for Community Health and Well-being: Performance in Practice and Its Implications for Urban Design") explores online-based food hubs in London, which facilitate the direct connection of producers and customers by promoting community-based box schemes virtually as well as producing and delivering them physically. In an empirical analysis of these case studies based on practice theory (Warde 2005), Kim argues that online-based food hubs serve as a platform that can engage a diverse population of local communities, and thereby promote a more holistic approach to urban design and management for inclusive growth. Her argument helps us imagine ways in which the recent pandemic may reconfigure local foodscapes, the spatialization of foodways, and the interconnections between people, food, and places in the digital polis.

In the final chapter, Katharine Willis proposes a smart city as a new model of integrated urban design bringing people, urban spaces, and technologies together. Building on Ray Oldenberg's idea of 'third place' (1999) and Sassen's concept of 'open sourced urbanism' (2011), Willis introduces different models of place-making and ways of interacting with and shaping the city that can start with the local neighborhood, rather than with technology. Her novel approach to the smart city requires thinking about not only the digital but also the social infrastructure of cities, including living labs, car-sharing, community currencies, hackerspaces, time-banks, and tool libraries. Such a novel way of envisioning the future city helps lay the foundations for creating emancipatory and empowering place-making pathways in the digital polis.

Collectively, the papers in this collection serve to generate an alternative discourse the digital polis, our term for cities that are evolving with physically and virtually networked communities. The questions guiding the research revolve around how people, urban spaces, and technologies relate to and affect each other in contemporary neighborhood transformations. The aim of this book is not to present idealistic concepts of an urban future ungrounded in contemporary reality, nor is it to enumerate a variety of present cases as success stories or failures. The intention is to open avenues for research and new discourses on the 'digital polis' as the grounds for a genuinely humanizing urbanism (Harvey 1973) in latent futures, or futures in the making that are 'on the way' (Adam and Groves 2007). In this sense, this

collection provides valuable insights into fundamental considerations on relationships between people, place, and society—relationships that are physically, but also virtually, constructed across the globe.

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The Digital Polis and the Formation of Techno-Social Subjectivity

Digitalpolis and the 'Safe' Feminism: Focusing on the Strategies of Direct Punishment and Gated Community

Hyun-Jae Lee

Abstract This paper starts with the following questions: Why did some of the digital feminists in Korean society set *safety* as the number one issue today, rather than *freedom*? Why did they come to emphasize gatekeeping communities for women? Digitalpolis is the time-space conditions under which the recent digital feminism is reignited. It is characterized by a deterritorialization and hybridization, unlike traditional cities as territorial places of homogenization. In digitalpolis, women experience the invasion of their body territorial image through unexpected connections from others online, which leads to mental breakdown and anxiety of uncertainty. In the psychasthenia and anti-intellectualism which appear with the fear and anxiety in the digitalpolis, women tend to drive a movement that puts safety first. While emphasizing safety, some digital feminists intend to directly punish perpetrators by disclosing the identities of those who robbed their body images online, and to create a gated community only for women while emphasizing ab imaginary identity such as biological woman. However, direct punishment and the creation of gated communities go in the direction of strengthening security while fostering fear rather than guaranteeing women's safety.

Keywords Gated community · Digitalpolis · Digital feminism · Safety · Anxiety

1 Safety, the Logic of Oppression or Liberation?

In the history of patriarchy, 'safety' has been a term used to bind women to the realm of family; the streets at night are 'dangerous' and women are weak, so women need to stay home to be 'safe.' Expanding on this logic, public places and streets are regarded as dangerous and fear-inducing places for women, and homes as safe

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places under the protection of men. In response, feminists from 1970s have resisted the logic of safety and protection that puts women in shackles, insisting on the right to explore the streets at night and walk freely on the streets as men do.

However, feminism, having been reignited in Korean society by digital media since 2015, has been calling 'safety' the logic of liberation, not oppression. Women in the digital era complain of fear and anxiety, thereby making 'safety' their top priority. In the 'Women's Life Through Statistics 2020' published by the National Statistical Office, the percentage of women who answered that they were anxious about crime was 57.0%, higher than that of men (44.5%) (National Statistic Office, Ministry of Gender Equality and Family 2020: 26). In 2016, the murder of a woman in a public toilet near Gangnam Station ignited fear, as much as anger, to women. It is no exaggeration to say that the non-consensual shooting and dissemination of videos, which has exploded with the development of digital media, has maximized fear in women in their 20s and 30s. Accordingly, the state began to periodically check whether there are hidden cameras installed in public toilets across the country, and the National Assembly passed a strong law punishing not only the shooting or dissemination of illegal videos, but also the possession of illegal videos as a crime. The city of Seoul has implemented a policy for women's safety in package delivery services. The Women's Human Rights Institute of Korea also used the 'equal right to safety' of women living alone as a catchphrase for the 2019 Gender Equality Week events. Feminism is amending the issue from the right to freedom to the right to safety.

For example, some trends of digital feminism that formed after the Gangnam Station murder case emphasized the need for a separate public toilet for 'biological women,' and some women's college clubs regarded men as space invaders and insisted on excluding men from the spaces of women's college. Some feminist clubs at Sookmyung Women's University opposed the admission of transgender people, while promoting safety as a banner. The Hyehwa Station protest, led by the 20 and 30 generations, used 'biological women' as a qualification for participation in the protest, emphasizing the 'fear' of digital intrusion by men. So why did some of the digital feminists set 'safety' as the number one issue today rather than 'freedom?' Why did they come to emphasize on gatekeeping communities for women, instead of focusing on safe urban spaces for everyone? How are gatekeeping communities different from the traditional realm of families that used to restrict women's freedom?

To answer these questions, I first want to name the recent trend of feminism reignited on the Internet as 'digital feminism,' and define the time-space conditions under which they live as 'digitalpolis.' And then, I want to show that the digitalpolis is characterized by deterritorialization and hybridization, unlike traditional cities as territorial places of homogenization (2. Conditions of Digitialpolis: Deterritorialization and Hybridization). Furthermore, it will be argued that in the digital polis, where the bodily territorial boundary between themselves and their environment is not clear, women experience their body images frequently invaded through the connection of others, and in the fear of self-loss, women make safety the most important issue (3. Fear of Loss of Body and Anxiety caused by Uncertainty: How Safty Became the Top Priority for Feminism?).

Based on this, I will show that, for women's safety, some digital feminists (1) use a strategy of online activism as well as national security laws; (2) form gated communities that strengthen sexual boundaries and natural roots, (3) maintaining an imaginary identity such as 'biological woman' that is expected to stop the flow and guarantee the separated bodily self from others (4. Response to Fear and Anxiety: Direct Punishment, Gated Communities, Imaginary Identity).

Finally, I want to reflect on whether direct punishment and gated communities can guarantee women's safety and whether women can be liberated through it (5. Are Gated Communities Safe?). In a digitalpolis full of flow and hybridity, no matter how much security is strengthened, women will inevitably face heterogeneity, and the fear and anxiety will not disappear if they solely focus on security. This is because women continue to express anxiety in spaces where the boundaries and divisions of the male/female dichotomy are clear, and where heterogeneous things, others, and outsiders are excluded based on homogeneity.

2 Conditions of Digitalpolis: Deterritorialization and Hybridization

The recent wave of feminism was reignited worldwide with the development of digital media, and is often called 'fourth wave feminism' (Cochrane 2014). Journalist Kira Cochrane has compiled its core into rape culture, online feminism, humor, and intersectionality (Chamberlain 2017). The fourth wave feminism starts with online-based resistances to sexual violence, with the unique humor culture of the Internet community making this possible.[1]

In Korean society, online-based feminism has appeared before in the early and mid-90s in the days of PC communication. They formed a flow, centered on the anti-sexual violence movement, and criticized digital sexual violence through the non-consensual video filming with hidden cameras, such as in 'red muffler' video incident. This was more powerfully and widely ignited in 2015 when the female-centric internet communities, 'Megalia' and 'Womad,' were created to respond to misogyny online. On one hand, the birth of cyberspace led to women suffering from misogyny in their daily life, but on the other hand, it also provided an environment in which they could respond to it. To pay attention to the characteristics of this feminism via digital media, in this paper, I will call this wave 'digital feminism,' and define the time-space condition where digital feminism was born as a 'digitalpolis.'

Today we live in the space-time of globalization. Globalization generally means the compression of the world, and the intensification of consciousness of the world as one (Soja 2000: 191). As part of globalization, cities have become nodes of global

[1] In the past, feminisms are divided according to the content it aims for. The first wave feminism emphasized political equality, the second wave feminism sexual class criticism, and the third wave feminism the intersectionality between race, class, and gender. In contrast, the fourth wave of feminism refers to the global and rapid igniting of these diverse contents through online media.

capitalism and migration. For example, John Friedman proposed the concept of 'world cities,' saying that the global capital uses major cities as 'basing points' in the process of spatially organizing and connecting production and markets. According to Edward Soja's description, Freidman's 'world cities are major sites for concentration and accumulation of international capital' and 'points of destination for large numbers of both domestic and/or international migrants.' (221) Saskia Sassen developed Friedman's thesis of world cities as basing points for global capital into the concept of 'global city' (Sassen 2001). She emphasized that the 'global city' is a postindustrial production site based on finance and producer services, etc. Going one step further, the Institute for Urban Humanities, University of Seoul, has proposed the concept 'globalpolis' instead of 'global city' in 2008. This is because the concept of global city, that emphasizes the contractual relationship between individuals, cannot fully express the possibilities of urban community (Kwack 2008). Through the concept of 'globalpolis,' they try to criticize urban life during a globalized era, while also not giving up on the possibility of political community in city life.

However, in this paper, I can go one step further and propose the shift from 'globalpolis' to 'digitalpolis.' Since 'globalpolis' does not explain how urban landscapes—as key points of global capital and migration—intersect with the development of science and technology, such as digital media. Therefore, I would like to pay attention to the characteristics of urban life created by the complex intertwining of globalization with digitalization through the concept of 'digitalpolis.' Then, how can the time-space conditions of digitalpolis, different from globalpolis, be understood? With reference to Edward W. Soja and Naoki Yoshihara, I would like to summarize the key conditions of 'digitalpolis' in the two following ways.

2.1 From Place-Based Communities to Nodes of Network

In the digital era, cities no longer just mean physical places with extension and volume. This means that cities have come to be understood as nodes of network rather than territory-based places. In general, a city, was understood as 'a space where people who obey the laws of the market meet physically or symbolically' (Balibar and Wallerstein 2011: 64), and as a place where a built environment for the meetings is concentrated. Even in global cities or globalpolis discourses, cities such as Los Angeles or Seoul have always been understood as a fixed coordinate or a territorial region on the map. However, according to Castell, who proposed the theory of the 'information city,' we, with the information revolution, also live in a space of flow connected by information networks. Urban life now takes place not only in fixed places, but also via networks of information flows. Castell sees this deconstructive reorganization of the urban life as the replacement of the community with a network as central form of organizing interaction (Castells 2001: 127). Yoshihara, citing N. Rose, describes the network as a 'virtual community' that 'exists only if the individual members are connected with each other through the identification established by the non-geographical space of the actor's speech, cultural product, and media image'

(Rose 1996: 333; re-cited in Yoshihara 71). Iain Chambers also describes how the metropolis is changing from a territorial community to a node of network:

> While the earlier city was a discrete geographical, economic, political and social unit, easily identified in its clearcut separation from rural space, the contemporary western metropolis tends toward drawing that 'elsewhere' into its own symbolic zone. The countryside and suburbia, linked up via the telephone, the TV, the video, the computer terminal, and other branches of the mass media, are increasingly the dispersed loci of a commonly shared and shaped world. Towns and cities are themselves increasingly transformed into points of intersection, stations, junctions, in an intensive metropolitan network whose economic and cultural rhythm, together with their flexible sense of center, are no longer even necessarily derived from Europe or North America. (Chambers 1990: 53)

Soja named the points of intersection, stations, nodes of networks developed along with the mass media 'postmetropolis,' and explains that this new form of city is in interaction with deterritorialization and reterritorialization (Soja 2000: 151). On one hand, the postmetropolis is moving toward a process of deterritorialization. According to him, the 'end of geography' is not a phenomenon unique to today, but perhaps, its impact has never been as intense and widespread as it is today (152). However, deterritorialization does not mean the complete transcendence of a place, but 'refers to the weakening attachments to a place' (151). Postmetropolis is less attached to the city as a physical place, unlike the metropolis. Soja explains that even if urban life in the digital age is led by a non-territorial network with ambiguous boundaries, territorial cities do not disappear completely, for if we have a body, we still live in a physical place. On the other hand, postmetropolis is being reterritorialized. Commodities also require physical space for production, distribution, and consumption. However, the pattern of territorialization is different from the past; for example, in an era where products are distributed through online platforms rather than in stores, downtown area lined with shops are transformed into slums, while the outskirts of warehouses and delivery companies become the center of the city.

In my view, digitalpolis is also a node within the network of interactions between deterritorialization and reterritorialization. Digitalpolis flows rather than being static. If digitalpolis is a form of urban life that is greatly influenced by the digital network of flows, we could be connected to the urban network even in the countryside. It creates far more connections and movements than traditional place-based communities. Not only can we connect to diverse communities at the same time, but we can also access and leave the network relatively easily. 'Digitalpolis' is much more everchanging than the urban communities of the past, given its freedom of flow.

2.2 From Homogenization to Hybridization

Digitalpolis is characterized by hybridity as well as nodes of networks. According to Henri Lefebvre, capitalist cities are abstract spaces which are 'measurable' (Lefebvre 1991: 352) 'homogeneous, or better homogenizing.' (355) In the cities, the capitalist logic swallows all the differences. Lefebvre argued that to resist the homogenization

of the city, the city of difference as 'a work' must be produced. However, he did not fully explain how this production of difference would be possible. In contrast to Lefebvre, John Urry describes the source of the difference more clearly. According to him, the city not only has the power of homogenization, but also hybridization processes facilitated by technology, such as computers, through which digital media, people, goods, money, and images will flow beyond society. In the process of intertwining capital and technology, human intentions, machines, texts, objects, and other science and technology are intricately interconnected, and in that sense, the city becomes hybridized (Urry 2000). Digital media has made global-local encounters much faster and easier, and as a result, we have multifaceted points of contact with the heterogeneity in our urban life. Albrow also saw that homogenization and heterogeneity compete in the urban space—created with intersections of deterritorialization and reterritorialization—forming a multi-layered relational mode. Soja explains this in the postmetropolis discourse as follows.

> The Postmetropolis thus becomes a replicative hub of fusion and diffusion, implosive and explosive growth, a First-Second-Third World city wrapped into one. In Europe and North America, as Chambers notes, postmetropolitan culture is no longer necessarily derived from local or even national territories. This is bringing about another radical change in the culture political of cyberspace highlighting in new ways the practical and theoretical meaning of difference, identity, subjectivity, multiplicity, integration, as well as race, class, gender, sexual orientation, age, and so on. Old binary categories such as black-white, man-woman, capital-labor, colonizer-colonized are breaking down and becoming reconstituted in different ways that we are only beginning to understand. (Soja 2000: 153)

In urban communities, nodes of networks, the racial, technical, capital, media, and ideological landscape, as described by Apadurai, are mixed more quickly and complexly, increasing the hybridity. The logic of capital accumulation is maintained, distorted, and transformed in the interaction with race, gender, and media, etc. With these complex intersections, digitalpolis creates unpredictable variables.

3 Fear of Loss of Separated Body and Anxiety Caused by Uncertainty: How Safety Became the Top Priority for Feminism?

Now, I would like to argue that the deconstruction of territoriality brought the fear of loss of separated bodily self, and the increasing hybridity through hyperconnectivity brought anxiety of uncertainty. Under these digital police conditions, women tend to prioritize safety.

First, let us look at how the shift to these networks can be connected to the fear of losing one's bodily self. Soja pointed out that with the territorial disintegration of urban space, the boundaries of cities have become vaguer. This means that it has become difficult to draw the boundaries of the city, and therefore, becoming increasingly difficult for us to draw boundaries between nature and manufactured, cities and countryside, and between cities. Soja, citing Celeste Olalquiaga, explains

that the anxiety caused by the territorial disintegration of urban space appears as a 'psychasthenia' at the psychological level. Anxiety about losing a hard material, a place to anchor, is expressed as anxiety about losing the bodily self. In the digital network, the body appears not as a physical organism, but an image, a represented space, and a digital city dweller who stays in the represented space for a long time becomes an image beyond the volume and weight of their body. Rather than being an independent reality, the body as a space of representation is more likely to be experienced as cognitive information carried through various information networks that various actors influence. This condition can cause psychasthenia.

> Defined as a disturbance in the relation between self and surrounding territory, psychasthenia is a state in which the space defined by the coordinates of the organism's own body is confused with represented space. Incapable of demarcating the limits of its own body, lost in the immense sea that circumscribes it, the psych asthenic organism proceeds to abandon its own identity to embrace the space beyond. (Olalquaga 1992: 1–2)

According to Soja, our physical identities become more entangled in our computer screens, and we come to understand ourselves through images handed down by computer networks. This means that one's inner and outer (self and environment) are no longer clearly separated. As city dwellers are increasingly drawn into the imaginary world—what Lefebvre called the space of representation—'hard materiality' evaporates, which leads to the loss of the physical self. The outside of oneself that is separate from oneself ceases to exist. According to Olalquiaga, this leads to fear of loss of bodily self, with a core symptom being a nervous breakdown. In this respect, 'psychasthenia is a psychological syndrome associated with life in the postmetropolis' (Soja 2000: 151). The fear in digitalpolis is not just the fear of losing one's bodily self.

Second, I would like to pay attention to the anxiety of uncertainty that arises as the flow and complexity of the network increases exponentially as the second fear that exists in digitalpolis, and argue that the fear of losing one's bodily self can be amplified by the anxiety caused by uncertainty.

Douglass C. North begins with the following question in *Understanding of the Process of Economic Change*: 'If we are continually creating a new and novel world, how good is the theory we have developed from past experience to deal with this novel world?' (Noth 2005: 13) According to him, this new world is one of uncertainty rather than a world of risk. He separates the two concepts as follows.

> For Knight, risk was a condition in which it was possible to derive a probability distribution of outcomes so that one could insure against such a condition. Uncertainty according to Knight was a condition in which no such probability distribution existed. Theorizing against such a condition of uncertainty therefore was not possible, according to eminent theorists such as Kenneth Arrow (1951) and Robert Lucas (1981). (North 2005: 13)

According to North, uncertainty related to the natural environment has decreased, while the human environment has become more complex. As mentioned above, the digitalpolis has increased in hybridity due to the flow and connection of urban networks. Human history, belief systems, and institutions were attempts to reduce

uncertainty between human relationships with nature, through science and technology, institutions, and norms.'[2] However, North sees the constantly changing human environment as having non-ergodic characteristics. Despite remarkable advances in science and technology, there is no indication that we understand the world correctly. In the non-ergodic world, even if an institution was the best at a particular point in time, it may move away from optimality over time as the humanistic environment changes.

The beliefs and institutions created to reduce uncertainty have created complex situations and new uncertainties. Revolutionary changes in technology in response to the barren natural environment, such as agriculture or the industrial revolution, for example, have resulted in unexpected circumstances, such as population growth and an increased gap between the rich and the poor. The development of transportation and communication has created increased migration, and consequently, a problem of migrant hatred. Advances in digital technology have also increased the experience of social contact, which is as unpleasant as free. In Korean society, the development of micro-cameras and the spread of smartphones are intertwined with capitalism and gender issues, increasing digital sexual violence related to the shooting and distribution of non-consensual videos. As we have seen, the entanglement between capitalism and digital technology has created different kind of regional, racial, class, sexual, and cultural conflicts, making predicting or controlling the future of urban society more difficult.

People have introduced a system to prepare for the aftermath of an incident, such as 'insurance' to reduce the anxiety caused by even a little non-ergodic uncertainty. Insurance is a prime avenue that has calmed anxiety by calculating and institutionalizing the risks to come after an event. The institutionalization of insurance was an important issue for the state or society. North sees the advent of marine insurance as a reflection of the fears of fifteenth-century merchants (20). According to Ulrich Beck, the institutions of modern society developed in the nineteenth and twentieth centuries were a process of creating a system of rules that dealt with industrial unrest and risks arising from human decisions through conflict. Beck explains that, the belief that we can control the risks produced by modern times has already been broken and in this regard, insurance as a safety device to respond to a 'risk society' was developed (Beck 2010: 26).

However, except for insurance, which is a countermeasure, there are not enough humanistic belief systems and institutions to prevent the uncertainty brought about in digitalpolis, where digital media and capital are intertwined. Although the development of digital technology is fast, institutional preparation for the pathology brought about by this development is always late. Even if a legal system can be created to

[2] 'The beliefs and institutions that human have devised only make sense as an ongoing response to the various levels of uncertainty that humans have confronted and continue to confront in the evolving physical and human landscape. While the deep underlying source of institutions have been and continues to be the effort by humans to structure the enviroment to make it more predictable, this effort can and frequently does make for increased uncertainty for some of the players.' (North 2005: 14–15).

prevent the death of non-regular workers from happening again, it may not be implemented in the face of the profit-seeking logic of capital, within the whirlwind of power and desire intertwined in layers. The capitalist market principles have unleashed the chains of state and supranational control. Beck uses the word 'risk society' to express the side effects of modernization, which cast off traditional lifestyles and grapple with uncertainty. According to him, today, no one can avoid this danger, and no one can provide adequate protection (28). Likewise, digitalpolis also created an unpredictable landscape, while intertwined with capital, gender, region, race, and culture. In this respect, digitalpolis is 'non-ergodic'.

If psychasthenia is a symptom associated with the loss of the physical self, then anti-intellectualism is one of the human responses to the uncertainty of the non-ergodic digitalpolis, which is considered impossible to predict and counteract. For example, people think that academic truth or legal system is powerless before capital or power. The loss of respect for professionals and intellectuals today is due to the inability to guarantee that the knowledge acquired 30 years ago remains valid. On the one hand, people demand strong legal punishment, but on the other hand, they believe that the legal system cannot prevent YouTubers from sedition. A tendency to depend on luck or irrational belief systems is also a typical response to uncertainty; uncertainty can also lead to moral crises. For example, in agricultural societies, cooperative interactions were a desirable relationship to control certain risks, but those who came to live in neoliberal societies that stimulate infinite competition, believe that the value of cooperation does not have as much value as it used to be. The reason there is a sense of distrust of government policy, along with a cynical attitude today, is that we believe that the crime prevention policies implemented are no longer condescending, reducing the fear of the unpredictable world or securing its survival.

Now, let us think about how the fear and anxiety we face in the digitalpolis affects women's lives. First, in a digital network full of images, women can become engulfed in fear of the loss of bodily self. In addition, this fear is further fueled by the uncertainty of the non-ergodic world. The development of computers and digital media has promoted aversion to alien beings as much as it has increased freedom of communication. Hate speech on social media was amplified, and non-consensual videos were commercialized, bought, and sold. As the humanities environment developed, people have been faced with the uncertainty brought about by the new environment. The logic of capital and the development of digital technology have met the current presence of misogyny and created an unexpected danger of digital sexual violence. Digital undertakers have been created to delete non-consensual videos, but they often pretend not to notice that videos that are deleted are being re-uploaded on the platform. With the development of digital media, non-consensual videos trading continued to evade all control as they were distributed from internet sites to social media and various apps. In the digitalpolis, where the logic of capital, digital media, and digital sexual violence are mixed, women can be easily gripped with fear due to the anxiety of losing their physical integrity and the uncertainty of when and how this loss will occur.

Ultimately, anxiety caused by uncertainties and fear of the loss of bodily self have become the basic affectivities of digitalpolis. And this effects are used to link to safety first. According to Beck, anxiety creates a psychology that makes safety more important than anything else. Anxiety determines the feeling of life. In the hierarchy of values, safety displaces freedom and equality and rises to the top. The law becomes stricter, and rational 'totalitarianism of risk defense' emerges. 'The right to liberty' is limited in anticipation of disaster. Safety is more important than freedom or equality to those who are insecure, even if their hands and feet are tied. In situations where risks cannot be predicted or calculated, anxiety and fear are transformed into subjective concerns rather than objective ones. If even a little uncertainty unfolds in a situation where we are already detecting danger, it may be linked to fear beyond imagination. Uncontrollable fear is again the prey of capital. For example, women anxious for their safety, have no choice but to use special delivery products that guarantee safety, install CCTV for security, and pay a lot of money to delete non-consensually traded videos. In these circumstances, women consider 'safety' more important than freedom or equality.

4 Direct Online Activism in Gated Communities with Imaginary Identity

I think that some digital feminists in Korean society also have psychasthenia and anti-intellectual attitudes. Seized with the fear that their bodily autonomy may be invaded by hidden cameras installed in public toilets, they believe that society will not be able to keep women safe in response to the ever-evolving image exploitation technology and capital. On the one hand, they demand that society should take measures for women's safety and punish those who break the rules, but on the other hand, they do not believe that male-dominated power, technology, and capital will make this possible. They do not believe that experts will be able to predict the disease of technology that is evolving differently each day and produce effective measures. They also criticize that the history of feminism and the discourses of the past no longer fit today's reality. For example, while the third wave of feminism has evolved to consider not only consciousness but also unconsciousness, and not only gender but also class, race, and disability, some of fourth wave feminism conveyed that the moral attitudes that consider such complexities do not guarantee the 'survival' of women. They also complain that moral solidarity for the entire community makes no guarantees to increase their pie. I think that this cynical feminist attitude that has recently appeared in our society comes from the view that the women's fear of loss of their physical self and the anxiety caused by uncertainty, which is increasing in the digitalpolis, cannot be dealt with the feminism of the past.

I would like to pay attention to the fact that feminism, which was strongly affected by digital media, established different strategies from other movements. The first thing to note is that women suffering from fears related to loss of bodily self and

uncertainty demand not only strong punishment from law, but also direct punishment from victims. In her article 'Feminism: The Fourth Wave?' Ealasaid Munro noted that recent online feminism is moving toward online activism like call-out culture (Munro 2013: 22). I believe that 'mirroring' as a Korean feminist strategy is a form of online activism that has appeared since 2015. Second, in addition to direct punishment, some digital feminists also emphasize the strategy of creating a 'safe space' which moves toward securing a closed community of women rather than making all cities safe for women. Emphasizing 'fear,' women have moved toward creating a gated space, only for women, such as women-centered internet Cafes or Women's Universities, rather than a campaign to create a safe space for everyone, like the 'reclaim the night movement' of the past. Lastly, some feminists, who adhere to a gated community, tend to focus on identity politics to secure order and simplicity. Ealasaid Munro observed that as the fourth wave progressed, feminism gradually became more open and inclusive, with an increasing awareness about intersectionality. However, in my view, some digital feminists in Korean society, who emphasized fear, showed a pattern of politics based on the imaginary identity of a biological woman.

4.1 Mocking and Direct Punishment

The Sewol Ferry incident and the non-regular worker Young-Gyun Kim accident are considered a safety accident that was issued because the so-called safety rules were not followed, so countermeasures for these accidents lead to punish those responsible and reinforce compliance with safety rules. In other words, in this case, the social movement urges a social response rather than a personal direct punishment. However, unlike these movements, some digital feminists responded to safety accidents with two strategies. On one hand, digital feminists demanded strong legal and social responses, while on the other hand, they opted for direct punishment, such as 'doxing.' As the legal system failed to properly catch or punish perpetrators, women in fear and anxiety directly traced the perpetrators, obtained information about them, and exposed their personal identities online.

Before discussing this, let's first look at the statistics related to sexual violence. According to the '2019 Sexual Violence Safety Status Survey' conducted by the Korea Women's Policy Research Institute and Korea Gallup Research Institute on 10,000 men and women between the ages of 19 and 64. Although sexual violence involving physical contact slightly decreased in 2019 (9.6) compared to in 2013 (10.2) and in 2016 (11.0), the damage related to illegal shooting and distribution of illegally filmed videos more than tripled from 0.1% in 2016 to 0.4% in 2019 (0.3 illegal filming, 0.2 illegal film distribution). Women who have been victims of sexual violence have had to make changes in their daily life due to the fear of physical invasion and the anxiety of uncertainty. They said, "I have lost trust in others' (34.4%), 'I have developed a sense of disgust for the same gender as the offender' (28.3%), and 'I have developed a fear that someone might harm me' (27.3%). The level of risk perceived by the survey participants was 4.7 points, indicating a higher

tendency to feel that the risk is increasing (Very decreased [1]-the same [4]-very increased [7 points]). More than half of those answer the question 'why has the risk of sexual violence increased?' with the reason being the punishment for crimes of sexual violence was weak (56.5%). Above all, they argued that it is necessary to strengthen the punishment of perpetrators (MGEFOB 2019).

Among sexual violence, digital sexual violence, according to an unspecified majority, was particularly associated with the risk of unpredictable physical invasion. Rape mainly occurred at home (45.2%), and sexual assault with violence and rape by someone they knew were 81.8 and 80.9%, respectively, while 74.9% of illegal shooting was committed by the perpetrator of whom the victims had no knowledge. In many cases, the locations of the damage caused by illegal shooting could not be specified, such as outdoors, on a street, on a walking trail, or on a public transportation facility, etc. The distribution channels of illegally filmed videos were also extensive. From instant messengers such as KakaoTalk, Line, and Telegram, and social network services such as Twitter, Instagram, and Facebook, to blogs, Internet community sites, and P2P, they varied beyond our control. This shows that the risks associated with digital sexual violence are linked to fear of unpredictable uncertainties.

I argue that the fear of loss of body and the anxiety caused by uncertainty has driven women toward direct responses such as online activism.[3] Women who were disappointed that society did not properly punish perpetrators or who judged that the distribution of illegally filmed videos by newly developed media could not be properly controlled went beyond urging social responses to take immediate and direct punishment. The correlation between women's fear and direct punishment is seen in examples of online activism such as 'online revenge' or 'digital vigilantism.' According to Namgoong-hyeon, the incident in which netizens divulged his identity after the so-called 'peanut turn' of Korean Air vice president Hyun-ah Cho in 2014 corresponds to retaliation through information disclosure, that is, identity robbery. 'Letzgo Hunting' in the UK, which disclosed the identities of pedophiles, 'Perverted Justice' in the US, where the identity of illegal prostitution of minors was identified and reported to the police, and the Chinese Internet site 'human flesh search,' where personal information of corrupt bureaucrats and civil servants was identified and shared, falls under vigilantism (Namgoong 2017: 3).[4]

According to Hyeon Namgoong, vigilantism is 'the act of an individual or group organized to replace the role when the systematic service of an official criminal policy institution is absent, or if such an institution does not perform its duties properly.' (4) Digital vigilantism refers to 'if an voluntary individual or group judges that the

[3] My survey of users of female-centered Internet communities also showed that women feel a great deal of fear in the digital environment, and that whenever the level of fear online increases by one level, the degree to which they consider direct punishment online increases. The results of this investigation are only included in the appendix due to the limitations of the sample.

[4] Here, Namgoong introduces various examples of British and American cases. In 2013, Gary Cleary, 27, from the UK, committed suicide by hanging when it was revealed that he was a pedophile by Letzgo Huntign, an online group that monitors illegal activities. In the United States, an organization called Perverted Justice also took a direct response by identifying the identity of a person who had engaged in illegal prostitution with a minor and reporting it to the police.

conduct of another person violates the positive law or is extremely inappropriate or disgusting in light of the regular online rules, retaliation against the actor online is prohibited. It is a phenomenon that seeks retaliation in the real world.' (6).

I would like to note that from 2016 to 2018 in Korea, there were internet sites like 'digital prison' that disclosed the identity of criminals. Under the conditions of uncertainty that society cannot properly respond to digital sexual violence that has emerged as a result of capitalism, digital technology, and misogynistic culture combined, women who are engulfed by the fear of body invasion, have chosen direct punishment rather than appealing to a legal system.

4.2 Fear of Invasion of Space and Gated Community

The second strategy of the digital feminists who emphasize fear and anxiety is to close the space only for women rather than to open the space for all. The internet site 'Womad,' which applied mirroring to minorities such as gay and transgender people, had the subtitle 'shelter,' and it is impossible to join the woman-centered internet Cafe such as 'Women's Time,' unless you prove that you are a woman in your 20s. Several feminist groups at Sookmyung Women's University posted statements opposing transgender women's admission to women's university, and the Hyehwa Station protests, which began as a criticism of the police's harsh attitude only toward female perpetrators, stipulated 'biological women' as a condition of their participation in the protests. They want to respond to fears by creating a partial safe space in situations where it seems impossible to keep the entire society safe. In other words, they think that it is a safe measure to create their own space in fear of the infringement on their body and rights, and to exclude foreign objects from entering it.

First, let us look at how fear of sexual violence is linked to strengthening vigilance. The article below shows that the sexual violence case in Pusan National University's female student dormitory is linked to the fear of space invasion (body invasion) and is moving toward creating a closed security space.

> The Pusan National University Student Council said, 'After the attempted sexual assault by an outsider last year, trespassing has occurred again, and the students of the Liberty Hall were trembling in fear. So, the university should implement measures to prevent recurrence as soon as possible.' The Pusan National University administration has increased security personnel, and in May, it decided to install a 'speed gate' that closes quickly so that outsiders cannot easily enter; and considers introducing a biometric system. (Sun-Ho Kim 2019)

Woman's fear of sexual violence in digitalpolis escalates through the exploitation of images through digital media, that is, the distribution of non-consensual videos by hidden cameras. In the internet café 'Uncomfortable Courage,' which was created for the Hyehwa Station protests, was posted countless fears and anger against men who illegally shoot female bodies and distribute their images. For example, a woman confesses that she is trembling with fear of men after witnessing non-consensually filmed videos of her face being circulated in the internet site 'Soranet.' There are

multiple stories of digital sexual violence; after a woman saw a man taking pictures of her while riding the subway escalator, she looked around to see if a hidden camera was installed, and looking at a hole in a public toilet made her tremble with fear. Here, the fear of illegal filming of body without consent corresponds to the fear of rape. The hidden camera's gaze that replaces the male genitals invades the female body, and the image of the woman's body quickly spread through a global network. Here, she has a feeling that the boundaries of her body are being dismantled. Faced with the fear of non-consensual videos invading her body, along with the fear of uncertainty about when and where the videos will be circulated, she ultimately seeks to secure safety by creating a gated community.

> Before the first and second Hyehwa Station protests were held, the staff checked whether there were hidden cameras in the surrounding public toilets and based on this, a separate map of the toilets available to the participants was created. In the middle of the protest, the organizers recommended that several participants move together by setting a time to go to the toilet according to the guidance of the staff. It seemed to be sensitive to the 'safety' issue. (Hyun-Jung Park 2018)

In a situation with a post about a hydrochloric acid terrorist attack, the organizers who must safely host the protest eventually limited the conditions for participating in the protest to 'biological women.' This was an expression of the will to offset the fear of intrusion by creating a closed space in a situation where one does not know how and when an invasion will be carried out.

The flow of closed community creation is linked not only to the fear of sexual violence, but also to the fear of 'being taken away' of rights. Women in digitalpolis are also linked to neoliberal anxieties. For example, some phrases in the bulletin against transgender admissions posted at Sookmyung Women's University show the fear of 'being taken away' of ones right. Let us look at the phrases below.

> In the meantime, women have been deprived of numerous seats by men for outrageous reasons. And now, women have lost their place to transgender people for another reason to respect diversity.' 'We will never be robbed of Sookmyung Women's University.' 'We were afraid that a man claiming to be a woman would break into a space where we could most safely exist as us.' 'Do not obscure the women's time, the 114 years herstory of Sookmyung, with the name of the minority, not the name of the woman. Women's space should not be destroyed by men who advocate minority.' 'Sookmyung is a space that gives women the opportunity to enjoy equality and safety. Women's right to equal education, to live safely, and to be recognized for their abilities regardless of gender, these are rights that can be enjoyed only in women's university. Now, however, we may have to feel a fear of safety, even in Sookmyung. (Uridongne Baths 2021)

Here, M–F transgender people are considered 'men' who take away women's space. The fear of being deprived also takes away the need to take care of the minority aspect. It contrasts with the attitudes of the early feminists who took care of slaves and children even in situations of deprivation. Here, fear is maximized to the point that it paralyzes their thinking of intersectionality. This shows that the condition of digitalpolis is fueling the anxiety of neoliberal competition, and that women are no exception.

4.3 Fear of Disorder and Summoning Imaginary Territorial Identity

Finally, I would like to note that in the digitalpolis, in the conditions of flow and hybridity, some digital feminists, who are engulfed by the fear of loss of body and uncertainty, tried to create a gated community while mobilizing imaginary territorial identities such as 'biological women.' It is said that they were trying to create a community that felt safe by imagining a smooth, unified collective identity that did not exist in reality, and a territorial body identity that did not exist in the digital space.[5]

Let us look at the Hyehwa station protest site again. The street flow of cars and hybridity of various people became a very orderly and homogenized space during the protests. There was no such thing as deviating acts or sudden tangles found in the protest in general. By preventing participants from conducting individual media interviews on the day, the organizers prevented comments other than their representative answers. Participants read together the slogans prepared in advance by the management team. Those who participated in the protest were reduced by six or seven people to fill their seats from the front, and when one person was missing in front of them, the person behind filled the front. Everything was done with the intent of acting as vigilantes, even when they went to the toilet, where several people came together and moved in an orderly fashion. The participants of the protest all wore red clothing with masks to inform them that they were members, and several people raised the signs that read Transgender Out to visualize the exclusion of hybridity. Around the protesters were shields guided by female police, and all the invited journalists were women. Those deviating from the rules and order given in this space were immediately excluded, and the criteria for the dividing line were 'biological women.' By establishing an order of distinction through these standards, the protesters secured predictability and control, thereby responding to disorders such as external terrorism and illegal shootings.

I insist that the 'biological woman' that became a measure of order here is an imaginary identity. As if the child in the mirror phase of Lacan's theory was cheering as he imaginably distinguished himself from others, feminists in fear and anxiety acquire a sense of security by imagining the distinction of female and male body. In this context, Like Lacan, Elizabeth Grosz explains, without the mental action of an 'imaginary anatomy,' or an 'anticipatory image of its own body' as integration (Grosz 1994: 39) the child will not be able to recognize his body uniformly. The mapping of the body according to the imaginary against the uncertainty provides a distinct territorial dividing line between you and me. So, creating a safe space not only excludes men, but also transgender people who have a fear of disorder.

However, according to Grosz, the body is punctured. The body is a threshold connecting inside and outside. In other words, the body flows. Likewise, urban spaces are a threshold connecting inside and outside. Cities are full of migrants and various

[5] See also the following article: Hyun-Jae Lee (2020).

sexualities. Digitalpolis is a space of complexity, a network of multifaceted contact points. However, the feminists in fear and anxiety try to transform the space of flow and hybridity into a stop, unity, and territory. Caught up in fears, they want to return to the mirror phase of Lacan, longing for the 'myth of purified community,' (Sennett 1992: 85) as Richard Sennett puts it. They imagine of themselves as consistent beings to cope with the crisis. They do not want to explore or wander. Rather, they seek to have a safe zone, to firmly grasp their position in the order of things, based on the roots of imaginary biological women.

5 Are Gated Communities Safe?

So far, this paper has seen the digitalpolis as an urban network where deterritorialization breaks down the physical boundary between the self and the other, and unpredictable hybridity increases due to hyperconnection. These conditions of digitalpolis have led women whose body images were stolen by non-consensual filming to face the fear of the loss of separated body and anxiety of uncertainty. Furthermore, this paper showed that to keep themselves safe from the risk of self-destruction, women made safety a top priority; they practiced online activisms such as doxing, created gated communities, or maintained an imaginary identity of 'biological woman.'

Finally, I would like to briefly reflect on whether women can feel safe in these strategies and whether they can enjoy freedom in the 'safe' space. According to Richard Sennett, a homogeneous and orderly space can provide a sense of security, but not a lively life. The urban network brings creativity and maturity to its members in the process of confronting and appropriately coping with heterogeneity, diversity, and disorder. However, a gated community that excludes these elements brings limits to freedom. This is Sennett's concept of 'uses of disorder.' The suburban middle-class home was a secure but minimal contact point with heterogeneity, and as a result, the community easily immersed itself in exclusive and violent behavior in front of heterogeneity. Similarly, the closed women's community could become an area of homogeneity in minimizing contact points with heterogeneity for safety, resulting in an exclusive attitude of avoiding strangers. The feminist strategy of establishing an imaginary territory of the biological body to fix their position and maintain an orderly system of distinction can provide a sense of security, but it will be unchallenged.

To go a step further, I would like to point out that homogeneous and orderly spaces may not actually provide enough safety for women. Those who depend on closed territory and homogeneity are bound to have a lower degree of understanding of heterogeneous functions and flows. The result could prompt for more CCTV surveillance and stronger police force or a more imaginary form of body. And when such conditions are not satisfied, they will still be plagued by fear. In the end, this could result in more power to companies and bureaucracy, to produce and supply such goods. On the other hand, the method of pursuing novelty along with heterogeneity will not be explored.

In this regard, safety or freedom is not a matter of choice. Knowing how to properly handle the heterogeneous and hybrid interface will give us a sense of safe, and we will feel free in a society that provides a mechanism for the contact point of diversity to be safe. All of this is possible when we break free from the urban imaginary that we are completely separated from the other, or that we are perfectly identical within. To this end, society needs to prepare an institutional device to prevent women's body image from being invaded through unexpected access. Only under this condition, women in digitalpolis can lay the groundwork for welcoming heterogeneity and hybridity.

Appendix

I conducted a survey among 112 Korean women aged 16–43 who had the experience of using women-centered Internet sites and online communities[6] in July, 2017 by using a questionnaire with 76 items rated on a 5-point scale in order to investigate the relationship between the online and offline experience of misogynistic hate speech, perceptions about cyberspace, and identity formation.[7] The results showed that the level of fear of crime among respondents was 3.9 points for the fear of online crime and 4.3 points for the fear of offline crime, revealing that women have a high level of fear for both online and offline bullying and crime (Fig. 1). As shown by the fact that the emergence of the fourth wave of feminism is related to fear about rape culture, the users of women-centered online communities in Korean society also have a high level of fear of cyberbullying or sexual violence.

When asked a question about the appropriate responses to cyberbullying against women in online space, respondents showed a preference for legal regulation (4.4 points) and retorting/mirroring (3.36 points). 'Mirroring' is a strategy used in female-dominated communities, and it refers to retaliating in kind in response to men's derogatory comments by using similarly disparaging expressions when males objectify or ridicule women with a sexist or male chauvinistic attitude. For example, 'hannam' (literally 'Korean man', a derogatory term for Korean men) is used as a retort in response to derogatory terms such as 'kimchinyeo' (literally 'kimchi

[6] I conducted a survey in July 2017 and analyzed the results with two other researchers, Myeonghun Lee (Master's degree, Sungkyunkwan University) and Taeyeong Kang (Sogang University Ph.D. student). To examine social trends related to digital feminism, the survey participants were limited to those who had the experience of using any of the women-centered online communities, such as 82cook, DOKDO, Redism, Lemon Terrace, Momsholic, Mango Café, Between Night and Dawn, bestiz, SoulDresser, Supsokgodchideul (literally 'godchis in the forest'), Ssanghwacha Cocoa, Yeoseong Shidae ('women's era'), oebang community, WOMAD, ezday, instiz, Imshi Daepiso ('temporary shelter'), Zzukbbang Café, and Powderroom.

[7] Since women-centered online communities characteristically consider anonymity important, it is difficult to obtain the lists of members of such communities, and thus it is also difficult to select participants by probability sampling based on the lists. For this reason, in this study, participants were selected by nonprobability sampling among people who accessed the website link of the online survey. To increase the reliability of study results, a follow-up study should be conducted using a sampling method that can secure the representativeness of samples used.

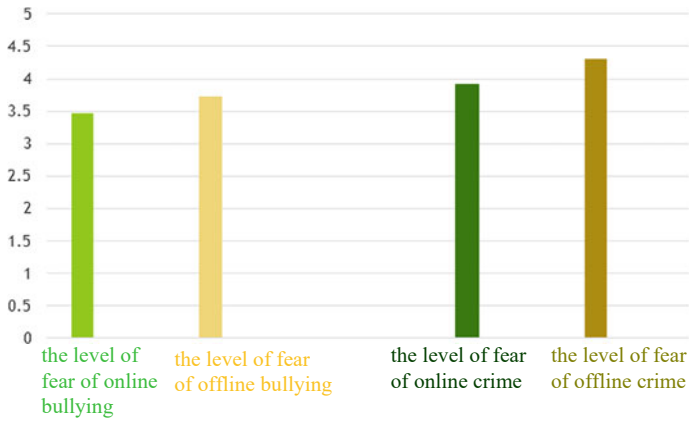

Fig. 1 Levels of fear of online/offline bullying and crime among women

woman', a derogatory term for Korean women) or 'deonjangnyeo' (literally 'soybean paste woman', a derogatory term for women who tend to engage in conspicuous consumption of luxury goods beyond their means). To take another example, 'heosuaebi' ('scarecrow'; 'aebi' is a word for father in Korean) is used to respond in kind to the disparaging expression 'momchung' (literally, 'mom worm', a derogatory term for mothers who let their children cause trouble or inconvenience to others in public places without managing their children's behaviors as parents). Although mirroring started as jocular or jesting remarks, it has rapidly brought women together on a large scale, and the women brought together in this way have identified themselves as feminists. In this study, direct responses such as mirroring were shown to be less preferred than legal regulation but it was found to be a more preferred approach than logical persuasion (3.25 points) (Fig. 2).

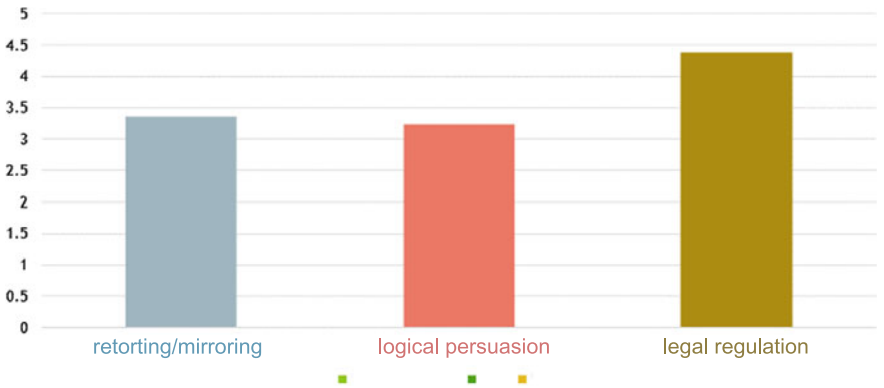

Fig. 2 Preferred responses to cyberbullying against women

In addition, I performed a regression analysis to examine the impact of the degree to which respondents show a higher level of fear of online crime than offline crime on their perceptions about cyberspace, experience of hate speech, and responses to hate speech.[8] Interestingly, the level of fear of online bullying and crime was found to have a significant effect on the degree to which respondents perceive cyberspace to be male-dominated, the degree to which hate speech is considered a playful or jocular remark, and the need for the legal regulation of hate speech ($\alpha = 0.05$). More specifically, as the degree to which respondents perceive online bullying and crime to be more threatening than offline bullying and crime was increased by 1 point, the degree to which respondents perceive cyberspace to be male-dominated was incremented by 6.59 points (Fig. 3). This result suggests that women's fear of bullying and crime in online space may be associated with hate speech, cyberbullying, and the illegal distribution of videos with illegal content by males. It is more remarkable that as the degree to which respondents perceive online crime to be more threatening than offline crime is increased by 1 point, the degree to which hate speech used by females among themselves is perceived as acceptable and jocular was increased by 3.75 points (Fig. 4), and the need for the legal regulation of misogynistic hate speech was rather decreased by 4.99 points (Fig. 5). These results suggest that women with a higher level of fear of online crime or women with a higher level of fear about uncertainty regarding digital policing show a greater preference for direct retaliation over legal regulations.

[8] Since women-centered online communities characteristically consider anonymity important, it is difficult to obtain the lists of members of such communities, and thus it is also difficult to select participants by probability sampling based on the lists. For this reason, in this study, participants were selected by nonprobability sampling among people who accessed the website link of the online survey. To increase the reliability of study results, a follow-up study should be conducted using a sampling method that can secure the representativeness of samples used.

Fig. 3 Correlation between the degree of fear and the degree of male dominance in cyberspace

	Dependent variable:
	cyberevaluation_factor4
age	−0.551
	(4.326)
gender_not_hetero	6.982
	(5.187)
household	0.759
	(2.552)
education	0.125
	(1.581)
fear_subtract	6.591**
	(2.555)
Constant	53.309**
	(21.989)
Observations	118
R^2	0.070
Adjusted R^2	0.029
Residual Std. Error	27.516 (df = 112)
F Statistic	1.691 (df = 5; 112)
Note:	*p<0.1; **p<0.05; ***p<0.01

Fig. 4 Correlation between the degree of fear and and the acceptance of hate speech among women

	Dependent variable:
	femaledomisogyny_factor1
age	2.128
	(2.991)
gender_not_hetero	6.816*
	(3.587)
household	−1.330
	(1.765)
education	−0.918
	(1.093)
fear_subtract	3.756**
	(1.767)
Constant	31.130**
	(15.205)
Observations	118
R^2	0.078
Adjusted R^2	0.037
Residual Std. Error	19.027 (df = 112)
F Statistic	1.889 (df = 5; 112)
Note:	*p<0.1; **p<0.05; ***p<0.01

Fig. 5 Correlation between the degree of fear and the legal restriction demands of hate speech

	Dependent variable:
	CvPrevF06
age	-3.639
	(3.270)
gender_not_hetero	-5.364
	(3.921)
household	1.539
	(1.929)
education	1.799
	(1.195)
fear_subtract	-4.990**
	(1.932)
Constant	62.528***
	(16.624)
Observations	118
R^2	0.097
Adjusted R^2	0.056
Residual Std. Error	20.803 (df = 112)
F Statistic	2.393** (df = 5; 112)
Note:	*p<0.1; **p<0.05; ***p<0.01

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Toward Digital Polis: Gendered Data (In)Justice and Data Activism in South Korea

Namhee Hong

Abstract This study aims to analyze the unequal techno-urban structure by datafication and the possibility of data activism where we live today and develop the concept of the *digital polis.* Datafication, collecting and quantifying affairs of everyday life, expressions, emotions, and personal information, indicates a gendered privacy infringement aspect. Gendered problems such as technology-facilitated sexual violence and data surveillance are connected to presenting a problem that the gendered perspective should be adopted to the concept of the vulnerable data subject in the data era. The concept of vulnerability is divided into the universal existence condition of all humans in the data society and the unique condition of marginalized social groups. Vulnerability in the sexual, discriminatory society and the networked data society needs to be understood in a multilayered way from the perspective of the networked society. This study asserts that vulnerability should be complexly considered along with datafication's unequal power distribution, unforeseeable damage scope and details, subject resilience, and empowerment. Meanwhile, young women as digital natives in the gendered data surveillance society are making various attempts to improve technological cultural conditions through data activism that inversely uses technology and affordance in South Korea. It shows how young women affected by the gendered order try to improve urgent problems, although they are accustomed to technology and are affected by feminism, which needs to be emphasized. As such, this study explores the limitations and possibilities of *digital polis* by analyzing the structural conditions of datafication and examining the data activism of young digital native women who resist it.

Keywords Datafication · Surveillance capitalism · Data activism · Digital native · Vulnerability

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1 Introduction

With the development of digital technology, the boundary between the physical urban space and the virtual digital space in which we live is blurring. Urban space functions as a medium for recording, transmitting, and processing information (Kittler and Griffin 1996, 722), as well as a physical space for embedding and practicing technology. Moreover, the advancement of digital technology is enhancing our mobility and social practices between digital and urban spaces.

The advances in technology throughout history have led to the dream of an ideal future space. As a digital version of the *polis* that has been considered an ideal community since the Greek era, '*digital polis*' also asks what kind of ideal community will be drawn with the development of technology. As we know, Greek *polis* is portrayed as a utopia, while in reality, it is an exclusive place that assumes communication between very homogeneous groups and has excluded heterogeneous others. According to Arendt (1958), *polis* does not only mean a Greek physical space but also means a 'space of appearance' where actions and words can create a space between people. The *polis* is 'not the city-state in its physical location; it is the organization of the people as it arises out of acting and speaking together, and its true space lies between people living together for this purpose, no matter where they happen to be' (Arendt 1958, 198). In this sense, the *digital polis* questions whether technology can create an ideal community with common sense between people. And it also asks how we can appear to each other with visibility. It serves as a starting point for expanding the discussion of the *polis* into a *'digital polis'*, and at the same time asks whether technology can realize the goal of an ideal community.

The *digital polis* 'as active support of socially just and politically inclusive urban circumstances mirroring the Greek *polis*' (Chung and Kim 2022), we can ask and analyze the contemporary media environment characterized by *datafication* to examine the possibilities and limitations of the *digital polis.* In particular, smart technology traverses all time and space, from smartphones, IoT, and wearable devices to autonomous vehicles, and is converging our daily lives into *datafication.* This is manifested in the dynamic interaction of our urban space and media and is composed of the relationship between people, technology, data, and culture. According to Mayer-Schoenberger and Cukier (2013), datafication refers to all processes involving many aspects of the world, which have never been quantified before. Datafication is regarded as a new scientific paradigm for quantifying and coding sociality and social actions such as friendship, interest, usual conversation, information search, taste expression, and emotional response, including personal information (van Dijck 2014, 198). Data left due to users' activities through smart devices is passively collected without a huge effort or consciousness of being recorded (Mayer-Schoenberger & Cukier, 2013, 101). Namely, datafication causes the appearance of a surveillance society characterized by a systematic collection of everything. If a traditional sense of surveillance assumed monitoring with a specific purpose by national power, the dataveillance is characterized by ceaseless data collection in which purpose is not set (van Dijck 2014; Andrejevic 2012, 86). Zuboff (2019) named the data

society 'surveillance capitalism', which unilaterally uses human experiences as free-of-charge raw material, translates them into data, and collects various behavioral surpluses generated in the network environment.

How can *digital polis* be imagined in such an environment of *datafication* and *dataveillance*? Are these problems common to all? What efforts are being made to solve this? This study examines how the realization of a 'socially just and politically inclusive urban environment' (Chung and Kim 2022) appears as gendered in data society. In fact, the results of datafication always cause privacy infringement. The concept of privacy collapses the modern classification of private and public areas and the classification of real/virtual space in the network environment. It places technology-facilitated life by covering all space–time ranging from streets to home, from workplace and school to home, cars, toilets, and bedrooms. The produced and collected data in all life areas explicitly cause an injustice problem to 'historically marginalized groups' (Crawford et al. 2014, 1666).

Who is the 'historically marginalized group' here? I would like to note here that datafication has broadened the scope of gender violence. Traditionally, gender violence showed gendered characteristics having women as victims, including sexual violence, domestic violence, and so on. However, online sexual harassment, sexist hate speech, stalking, illegal shooting, non-consensual image distribution, and doxing caused in the network environment are emerging as the new types of gender violence cases having mainly women as victims, based on traditional gender stereotypes. In these cases, sexist social culture and legal system combined with technology increase various harms against women. Moreover, as damage scope spreading to individual women extensively in everyday life is delivered through various reports in the Korean society, the new technology-facilitated sexual violence (TFSV) (Henry and Powell 2015) is discussed as a new social risk, including the seriousness of the damage, the inadequacy of the legal system, and the problems of social and cultural recognition and education. In the network environment, cases such as TFSV make it difficult to completely solve the problem due to anonymity, *spreadability* (Jenkins et al 2013), and sexism in the legal system and investigation process.

As such, datafication is associated with various privacy violations and surveillance targeting women. However, there is no effort to view women as a 'historically marginalized group' or to analyze datafication structurally. Malgieri and Fuster (2021) examined European General Data Protection Regulation (GDPR) and criticized that the subject here was white male adults. They asserted that datafication should be viewed from a gendered perspective because of various data-related damage cases occurring to women in reality and that women should be regarded as the 'vulnerable data subject'. As technologies are expanded to the general area of life, adopting gender interest in surveillance research is becoming an essential factor (Marwick 2017). From this position, this study examined the modes caused by surveillance due to datafication and the modes in which privacy problems caused gendered injustice and tried to elaborate on the concept of vulnerability.

Meanwhile, this study tried to find the possibility of activism in the surveillance society. So-called 'data activism' is a kind of social practice taking a critical attitude toward big data and is the case in inversely using technology society's affordance.

It is a position to regard datafication in a dynamic composition process rather than a complete and structural condition. It seeks to find data-mediated society's possibilities and limitations through the method of responding to the structural condition of a digital native, that is, young women. Although the method of defining data activism differs among scholars, the critical point is that it refers to various attempts to improve the problem of injustice arising from datafication (Kazansky and Milan 2021, 64). This study insists that there is a need to pay attention to the fact that young women's digital experience affected by a gendered order is revealed as cases of practicing activism using technologies although they are accustomed to technologies. As data society's injustice condition, this has effects to signify young women's various attempts not to be unilaterally victimized and to clarify the limitations that the data society's condition has while critically pointing out the technological development and existing sexism. In doing so, this study aims that analyze the unequal techno-urban structure and the possibility of data activism where we live today and develop the concept of the *digital polis.*

2 The Topology of Datafication and Injustice in the Digital Polis

Here, this article analyses the unequal structural conditions of the *digital polis* with datafication, and how datafication is linked to the problem of injustice in a specific group. Datafication transforms all areas of life into data and enables tech giants to accumulate all data about people's lives. This leads to a data-based surveillance society. First, by arranging that datafication is related to the realm of historical and socio-cultural discrimination, not just the technical realm, the necessity of a gendered perspective is needed. So, I will discuss about the injustice of datafication and the necessity of gendered perspective in data society. Second, I will deal with the background of the rise of gendered surveillance studies in a technology-mediated society. Third, I examine how the concept of vulnerability can be refined in the data society and the concept of vulnerable data subjects from a gender perspective. Through this process, Part II analyzes the unequal structural conditions of contemporary techno-society.

2.1 Injustice of Datafication and Gendered Perspective

Datafication is based on a strong belief in dataism ideology that all sorts of human activities or sociality can be objectively quantified and tracked through digital technologies (Van Dijck 2014, 198). Dataism is based on the reliability of the size, number, and data technology, accumulates of data through the routine collection

process, and the past accumulated data aims to predict the future through a correlation analysis with patterns (van Dijck 2014; Andrejevic 2012; Zuboff 2019). The prediction of the future is mainly used for marketing purposes or is revealed as a prediction of crimes or as 'emergent social sorting' (Lyon 2005). For example, the data and prejudice in the past are used to predict criminals and crime-occurring areas, and this affects overall domains of life, including insurance, banking, housing, entering school, employment, and events occurring in a specific period. As data collection, classification, or application become automated, automating inequality occurs in the insurance product, criminal case, and welfare system (Eubanks 2018). Automation makes the problems of injustice and surveillance through technologies invisible, while natural resistance to injustice makes the surveillance problems more difficult. Benjamin (2019, 5) pointed out that everyday life tools to express oneself play a role in making racial discrimination invisible, and she named it the 'New Jim Code.' This condition allows new technologies to reflect and reproduce existing inequality.

Social and historical factors intervene in the technology design and use, and technological affordance occurs in combination with the social thing, so 'gender' is also a group that suffers from injustice, just like 'race' (Fraser 2003). According to Nancy Fraser, gender alongside race is a mixed category suffering from social discrimination from the economic distribution and cultural recognition. Fraser pointed out a need to conceptualize harm because harm encompasses physical and mental damages and is related to social exclusion. For instance, the issue of cultural ignorance is not a 'merely cultural' dimension (Butler 1997). It is not an individual's phycological problem; however, it means being excluded from participation in social life as a colleague. For example, the racial and gender biases of developers and designers in tech companies influence what constitutes a technological affordance that encourages people to participate. These biases influence thinking about why the participation of specific races and genders is constrained and why certain races or genders are reluctant to trade their personal information. In the digital environment, bias affects multiple dimensions, including monetization processes, ranking systems, and the removal of hate speech. They affect economic distribution, legal system, or cultural reproduction and disturb participation equally (Fraser 2008, 94). In doing so, people cannot equally appear in digital space that social and historical injustice is embedded in.

From this perspective, the gender issue in the data society raises the need to examine how the problem of surveillance society and privacy infringement, which can be the results of datafication, is discussed and what relations it has with the economic distribution, cultural recognition, and parity of equity realization of specific groups. From the representation and discourse of privacy, women's privacy is easily infringed due to media technology, but it has shown that the infringement has not been adequately acknowledged. Privacy is a survival condition challenging to obtain for specific people, and it is a kind of 'invisible suffering' and 'dual suffering' whose privacy infringement is hard to reveal if you are women. The issue of privacy is 'an unequal condition obtained differently depending on social classes' (Lee 2020, 172), so there is a need to elaborate on the concept of privacy from a gender perspective.

Continuous surveillance and systematic data collection of individuals, which can be a significant characteristic of the surveillance society, are accelerating along with the advent of big tech companies, and they are justified for industrial promotion or public security. Privacy infringement is revealed as a gendered injustice, so we need to analyze the surveillance society and privacy problems from the gender perspective.

2.2 Technology-Mediated Society and Gendered Surveillance

Studies on surveillance have explored relationships between power, technologies, and individuals. Technological development has also affected the mode of media representation and the popularity of reality programs, such as CCTV, and reflected the change in discourses, such as voluntary surveillance in the private area and citizenship (Couldry 2008). The discussion generates essential topics since the opening of private life, self-management, and citizenship have become universal governing techniques in the digital technology-mediated data society. Privacy infringement and opening private life should gain attention, but they do not generate the same result from all citizens. Surveillance studies have been concerned about the influence of surveillance technology adopted for many workplaces and homes, as well as the surveillance of individuals by the government. The studies have also mentioned that surveillance is associated with power relationships and historical discrimination (Stark et al. 2020).

Technological development achieves black-boxing that makes existing media representation and the custom of pervasiveness in everyday life reach a stage where they no longer become problems. It is when a particular technology used infiltrates everyday life and effectively silences the privacy infringement argument. The 'habituation' is a kind of normalization phase of specific technologies (Zuboff 2019) that can be efficiently carried out thanks to the 'remediation' of the customary representation and use mode in the past media that continues in the new media (Bolter & Grusin, 1999). For example, the objectifying process of the gendered body is carried out based on traditional terms, as visual-media technologies inherent to existing visual customs in social media continue (Dubrofsky and Wood 2015, 93). A so-called 'upskirting' that shoots women under their skirts in public places, such as the subways and stairs of a building, has become illegal in South Korea, not only in the Western developed countries nowadays. However, it has been hashtagged as well and become popular on visual social media, including Instagram, based on specific visual representations and sexual expectations of women (Sebastian 2019). It has accumulated as a customary visual representation displaying women's fragmented bodies in the 'attention economy' (Goldhaber 1997), emphasizing visual bias for profit or fame in social media. In a digital environment where people's attention affects economic capital and cultural reputation, women's bodies have become the most easily accessible target for public attention.

In the stage of 'habituation,' in which technology has infiltrated everyday life, the issue of privacy becomes invisible as a very personal thing. Privacy is the fundamental right of male citizens of Western liberalism, and it has been formed along

with gender role separation in the public/private area. The privacy right emphasizing the domestic and private sphere, alongside market, labor areas, and modernization, has subordinated women under the role of the domestic area within the family and men's economic support. It has been used to deprive women of political, economic, and social rights, continue men's abuse of women within the family, and perpetuate social ignorance and discrimination (Gavison 2017). Sexual experience or personal information has been used to lower women's reputations under the traditional stereotype of women's roles. Women's privacy has played a role in subordinating women within the home and prescribing unequal treatment of the work at home and in the private area. Simultaneously, women's privacy has been working to continue their sexual, economic, political, and social subordination.

The problem is that gender violence, due to technical impacts, expands beyond private/domestic areas (Maher et al. 2017). Stalking, including GPS tracking using a smartphone, illegal shooting, doxing, and non-consensual distribution, shows that network environmental connectedness is used to surveil women. An active social process strengthens a subject's differential position (Finn 2011, 424), revealing that technology consolidates and maintains patriarchy.

Also, surveillance is applied and accepted differently in the public area, depending on gender. For instance, in a study addressing the problems of surveillance within workplaces, women employees frequently experience becoming unwanted attention objects in organizations where men are managers or occupy a majority. Therefore, they feel more anxiety than men to direct surveillance, facial recognition technology, and increased visibility in open office spaces (Ball et al. 2012; Hirst and Schwabenland 2017; Stark et al. 2020). A desire to collect everything in life, from mobile media to wearable devices, more elaborately and extensively is shown alongside technology innovation, and the degree of acceptance of new technology is revealed differently depending on gender. According to Pew Research Institute (2021), Americans are concerned about losing human jobs, surveillance, hacking, and digital privacy due to technological advancements, such as artificial intelligence (AI). They recognized that the design of technology was centered on white male adults.

Although new technologies enable individual empowerment and are used as a tool for social participation, a contradictory social yardstick on women's privacy reveals very gendered violence on women's digital participation. In a data society where people act, individuals release their data, and all activities in their lives are connected to privacy infringement in everyday life, such as providing individual information and private details online, active participation in online activity, presence on the street, or subway station, and going to the public toilet. It is revealed as a more threatening aspect to women. Livestreaming can be connected to real-time murder (threat) and raids. Technology-facilitated stalking, the experience of sexual harassment, the distribution of sexual images using deep fake or other technical manipulation, and threats through disclosing personal information show that women's privacy infringement is a threat to life in the data-driven environment. In this sense, the concept of vulnerability from a gendered perspective needs to be elaborate in a data society.

2.3 *Vulnerability and Gender as a Vulnerable Data Subject: Elaboration of Vulnerability in Datafication*

What does the concept of vulnerability mean in a data society and how can it be elaborated? Malgieria and Fuster (2021) pointed out that European data protection legislation, General Data Protection Regulation (GDPR), presumes an average male subject who makes a rational judgment as a standard data subject. Meanwhile, children are presumed as vulnerable subjects. The reason is that datafication of child information nowadays is carried out omnidirectionally through *sharenting* (*share* + *parenting*) by parents, Internet connection at school and home, and direct participation in digital media (Livingstone et al. 2020). Here, children's vulnerability means young existence with poor judgment and grave concern about their privacy, which can be infringed due to technology and adults' indifference and negligence. In the media policy discourse, the concept of vulnerability or vulnerable groups mainly means an immature subject with poor rational judgment, and it is related to children and youth groups. Children are premised to be vulnerable in that they can be easily manipulated due to their lack of ability and experience to understand the data-based technology structure's complexity and their lack of recognition of risks and rights (Livingstone et al. 2020; Malgieri & Fuster 2021). For this reason, studies on children deal with vulnerability from a protectionist perspective.

Vulnerability in the data society may have highly complex and multilayered meanings. Concerning data society's risk, Malgieri and Niklas (2020) asserted that the problem of vulnerability should be an essential theme when individuals face new risks in datafication. According to them, discussions of vulnerability are divided into a universal approach and a particular approach. The former means that all are equally vulnerable in the data society. However, a particular approach is that some subjects are more vulnerable than others. Another division is that vulnerability appears whether the data 'processing procedure' or 'outcome.' Some data can be revealed differently in the 'outcome,' including the generation of secondary damages such as discrimination, manipulation, and physical and mental damages. Malgieri and Fuster (2021) pointed out that the concept of standard data subject presumed by data laws lacks a gendered perspective and asserted that a gendered perspective needs to be considered a factor of vulnerability. Marwick (2017) reported that women's privacy infringement is not seriously treated from the human rights aspect, and it is re-distributed maliciously through a nude photo outflow incident due to an American female celebrity's cloud account hacking. Therefore, she presented the concept of 'gendered privacy.' This case shows that infringement of women's fundamental rights is not recognized as human rights infringement by the tech platform, legal system, and the public, but it is revealed as an unexpected and victim-insulting mode of the outcome.

There is a need to analyze the concept of vulnerability by recognizing that it consists of various layers in addition to a universal/particular approach (Luna 2019). It can be an alternative language that can handle diverse impacts and effects caused by the problems of datafication in a more elaborate way (Malgieri and Fuster 2021). Recognizing vulnerability in association with gender means that the conflicting and

contrasting perspectives from privacy discussion should be recognized. For example, there is a case where the gendered concept of silence is adopted in cases associating women's privacy with vulnerability. An average data subject is men, and vulnerability is considered an aspect in which women's privacy should be protected for femininity. From the protection perspective, women are regarded as an object rather than a subject of privacy. An outcome of the continuation of compassionate sexism, protectionism, and patriarchy may be brought about by consolidating gender stereotypes and bias. However, a vulnerable subject does not always mean the opposite of a powerful or average subject, and the classification is not clear. The concept of a 'resilient subject' means that all are not exposed to the same degree of risks in the same situation, and it is applied differently depending on the individual and social situation. There can be various layers between the average and vulnerable subjects, such as non-average and non-vulnerable subjects.

The concept of a resilient subject is associated with a meaning that resilience varies depending on groups, although everyone can be exposed to privacy infringement in the data society. It has close relations with social and cultural customs and technical conditions. For example, although cloud account hacking is a structural condition of datafication that may occur to anyone, this is used to degrade women's social reputation. The cloud storage system can be shared with others and becomes a representative case of non-consensual distribution. Image-file transmission, saving, and processing become possible in the global context in real-time, and personal information is distributed globally, or privacy infringement may occur with search engine keywords in portal sites such as Google or Naver. Internet sites insulting women provide similar images by collecting them in large quantities. The cases reveal that technology use and privacy infringement damages are significantly gendered in the contemporary situation where the same technologies are used. Goodin (1985) insisted that vulnerability means more than sensitivity and that damage is not pre-determined. Therefore, vulnerability means the possibility of damage, not the actual damage.

Examining the concept of vulnerability from the gender perspective premises structural factors that frequently cause damage to particular groups and a particular approach considering the discriminatory context in the reality that tech society's conditions are more amplified by social structural discrimination. This point can be understood as the unpredictability of data processing and the concept of paying attention to the outcome. It also means that technology and data are the product of unequal social relationships and that one should pursue restorative justice to correct past inequality, errors, and wrong-doings while heeding for algorithms not to conduct black-boxing inequality (Costanza-Chock 2018).

3 The Meanings and Limitations of Data Activism in Data Society

As a response to the gendered injustice cases caused by datafication, the trends of data activism are rising as kinds and series of online activism. Discussions on activism, emphasizing the public's empowerment, are concerned about simplifying various complex problems in the techno-centric society. However, various injustice cases show that the outcomes of datafication are highly gendered damage cases, and women are limited to participation as active members of digital society. Malgieri and Fuster (2021) suggest looking at Luna (2019)'s layered vulnerability perspective. They emphasize that vulnerability is not a fixed characteristic of a specific individual or a group but is a trait composed of status, time, and space. They assert that vulnerability is an open concept to a more intersectional approach. In presenting a solution, vulnerability demands complex institutional terms, including personal capability consolidation and a protective apparatus offering to overcome vulnerable positions and remove damages. Specifically, data activism pays attention to special damages occurring in the datafication and demands the pertinent people wishing to solve the problems to complexly approach activism from the technical, social and cultural, and legal system perspectives.

Data activism is a practice of gathering people (and information and technology) for a sort of activity and social and political mobilization participating in resisting datafication as a grass-roots response to the datafication, as well as social practices with the critical situation to datafication (Milan and van der Velden 2016, 57). It can be regarded as a political activity to improve society using data and technology. From improving society through software or online activities, data activism uses technical expertise as a political motivation (Milan and van der Velden 2016, 60). Data activism pursues practices such as encryption to resist surveillance of companies or government, campaigns (movement), or training to consolidate datafied citizens' agency, or software creation (Milioni and Papa 2022, 2).

The execution types and purposes of data activism are varied and diverse. What is important here is the role of a mediator, namely data activists. They volunteer the role of mediator to support the public's agency (Baack, 2015, 1) and play a role in making counter-imaginaries on datafication (Kazansky & Milan, 2021). These premises work to translate data operation into something tangible (McKelvey 2014, 597), not to subordinate user subjectivity made by algorithm media to the power (Gehl 2014). Here, data activism can be summarized as follows: First, data activism has data, a cause of datafication, as a tool, and second, it can be arranged as activism in which experts skilled at data and technology are mediated. Kazansky and Milan (2021, 63–64) explained data activism as finding the site to intervene by composing counter-discourses and counter-cultures; namely, it can work, causing cracks in the mainstream discourses and cultures and putting on the brakes to technology-centralism and mythology by intervening in technology cultures.

To interpret this, the *affordance* concept needs to be explained. *Affordance* is a concept presented by Gibson and can be explained as a structural condition presented

by the technology environment. For example, Postigo (2016) elaborated on the 'architectures of digital labor' concept and explained affordance as technical and social affordances. *Technical affordances* are the set of functions that technology makes possible. *Social affordance* is the social structure associated with a given technical structure. Inversely, the given technical and social conditions can be viewed as an oppositional affordance. Milioni and Papa (2022) classified the concept of *'oppositional affordance'* into four categories of data activism cases. They presented the following as the method: First is finding hidden affordance. It is discovering affordances that users felt burdensome or did not use much due to inconveniences, although a platform developed them. Namely, it provides a setup-customized function, a method to improve privacy or a quicker method of account deletion. The second is imagining a new affordance, namely making data profit without meditation on Facebook or methods to think and realize beyond the existing platform framework. The third is making 'meta-affordance,' namely identifying significant affordances of a platform and allowing online activities to be revised. The meta-affordance process aims for users to recognize algorithm processes and revise activities so that users can escape from filter bubbles or automated decisions. Fourth is creating 'anti-affordance.' It refers to a method to reject or distort intended affordances made by companies. A strategy to reject the platform's business model premised on the consistent identity or an attempt not to identify user profiles or face recognition directly is introduced as software. Milioni and Papa (2022) pointed out that the cases are provided in a mode to encourage technology's subversive use and have the merit of giving various alternatives to average users, but that there are limitations to drawing fundamental innovation due to individualized resistance. They asserted that technical experts need to be informed that all technology affordances should be understood and regulated accordingly.

Major discourses on data activism are mainly being carried out in a gender-neutral way; however, data activism should be done to improve gendered injustice outcomes. According to D'ignazio and Klein (2020a), data feminism as a tributary of data activism uses data and technology to practice feminism. They pointed out the following: First, data feminism should start by analyzing the power relation in the world. It means that the social structural power relationship needs to be understood and that the data, being the product of the stoical structure, should be recognized. Second, the core of data feminism is challenging unequal structures and having a nature of activism toward justice. Third, the emotion and embodiment issue should be elaborated concerning data; that is, an attitude to challenge a premise that data is a neutral and rational fact to challenge the dichotomy of objectivity and subjectivity, and reason and emotion, and to accept a concept of situated knowledge expressed by Haraway is necessary. Fourth, data feminism should challenge the gender dichotomy that perpetuates oppression because the dichotomy of men and women causes a worry about ignoring varieties of hierarchy and intersectionality. Fifth, data feminism professes pluralism, respecting knowledge produced by various subjects. Sixth, context should be considered. It is an essential process to carry out an accurate and ethical analysis and this means that data as the product of unequal social relationships should be recognized. Lastly, platforms and technologies that are mutually connected

in the *datafied* world should be recognized, and the *datafied* world should play a role in making invisible labor and world connectivity visible.

The principles and discussions on data feminism emphasized that datafication should start from a critical mind and that datafication does not produce objective and neutral knowledge (D'Ignazio ans Klein 2020b). That means we need various activism to address and resolve data injustice and inequality. Based on the discussions, South Korean cases are analyzed, and the meanings and limitations are provided as follows.

4 Data Activism from the gender perspective in South Korea

Data activism in South Korea can be accessed through journalistic reports rather than academic studies.[1] Data activism is discussed in limited dimensions, including data as a technical tool and a legitimate method. I will analyze the South Korean cases of data activism bearing the lacking discourses about data activism as the meanings and limitations.

Kannengießer (2020) mentioned that data activism could be divided into reactive activism cases appearing after a specific incident and proactive activism cases with preemptive and campaign nature. Data activism can be considered the extension of online/digital activism, but it raises a problem of technology's operation process and has a nature of activism using technology, which can make a difference. Data activism is heading toward a change in recognition, a shift of discourses, and a transformation of the legal system alongside technical (re)design or improvement of algorithm, while reminding that the current *datafication* problem renders a specific group particularly vulnerable beyond an intention to awaken the current technology system problem to the public. It is not easy to classify activism as a specific reactive or proactive incident. The classification is challenging in the various privacy infringement and gender violence cases occurring to women since the online era. However, illegal shootings and non-consensual distribution of sexual images have been increasing mainly by making women victims since the 2010s. The technology-facilitated gender violence cases that have occurred since the development of smartphones and social media are related to cloud account hacking and women's images datafication. South Korean data activism can be regarded as reactive activism. A Gangnam Station toilet murder case in 2017 was regarded as misogynistic femicide for women, but police published it as a kind of crime by psychopaths, and young women's feminism was expanded. Illegal shooting in a toilet and non-consensual distribution of sexual images in an

[1] Data activism is defined as the way in which civic movements use data as a tool for social change. In addition, legal methods such as utilizing publicly available data or constructing data directly are mobilized. For example, 'Nono Japan', which provides information related to the boycott of Japanese products, and the 'Corona Live App', which provides information on confirmed cases of Corona, are representative (Seunghee Han, 2019/08/15).

intimate relationship has made women's digital experience especially vulnerable. Cases, where female celebrities committed suicide due to misogynic harassment and non-consensual distribution have shown that datafication's outcomes especially exclude women from our society. The technical literacy of young women as digital natives competent in technology, their diverse damages, and discrimination experiences, and the so-called feminism-reboot wave can be interpreted as technical and cultural backgrounds and conditions making data activism possible. In a multilayered interpretation of vulnerability, women can quickly become the object of privacy infringement and gender violence. Therefore, women can be viewed as vulnerable data subjects regarding datafication's outcome and degree of resilience. Technical solution premises privacy infringement, and then it is performed. For example, a victim should prove or register the damage shooting images to prevent the spread of such images, and these images need to be exposed to the police and prosecution in an investigation process.

From this backdrop, women as the subject of data activism have shown a new campaign mode through Hyehwa Station Demonstration on the digital sexual violence problem. It is derived from the activism history of organizations in which young women are prominent members, such as Digital Sexual-violence Out (DSO), RESET, and Korea Cyber Sexual Violence Response Center. Those organizations have led digital sexual violence victims to support movements including illegal shooting images and rape conspiracy, and a movement to abolish Soranet, a porno-sharing site. Those organizations are voluntary organizations consisting of young women, and there is a need to mention that they started in an attempt to devise technical solutions to resolve technical culture's injustice problems. They pointed out that such terms as Revenge Porno and Hidden Camera are discriminatory terms to be changed and contributed to their transformation into non-consensual distribution and illegal shooting and making them crimes. The organizations emphasized that the consumption of the contents is problematic with the production and distribution of the contents. (Hong 2018).

Individual activities have correlations and have developed by mutually complementing. Those organizations started monitoring and deleting hidden shooting images or non-consensual distribution, supporting them technically, and have contributed to establishing a technical deletion system at the national level by the state. While emphasizing that damages are perpetual and globally spreadable in the global media environment, the organizations devised a legislation bill claiming indemnity to attackers. These cases are connected to 'Team Tracer Flame' (chujeokdan bulkkot) activities that got the full story of the nationwide sexual exploitation incident known as the 'N-th room incident.' They captured large-scale sexual exploitation crime evidence through infiltration to telegram and made the incident an agenda with explosive social impacts through mainstream media. The set of activities took on reactive activism on data society's injustice and had a meaning in that they tried to reverse the young women's problems excluded from mainstream discussions as technical, social, and cultural methods.

Improvement campaigns on misogynic discourses through social media and activities on Twitter collecting problematic articles can be discussed on the extension. It is related to activism history through Twitter, and hashtag activism is part of the campaign using Twitter's affordance to quickly classify big data on the SNS space, such as Twitter, and express solidarity. The #MeToo Movement can be viewed as a global-scale hashtag movement. In South Korea, hashtag feminism on sexual violence within diverse occupations, such as #sexual violence _within_the_literature_field, can be recorded as a pre-history of the MeToo Movement. Twitter functions as an archive collecting various misogynic phenomena, such as sexual and discriminatory articles and programs. The case of 'archive' activism, which stuffs various misogyny and sexist articles and programs, has been the primary method. Data archiving as a particular form of political activism for marginalized people to create the physical infrastructure for evidence and memories overtime (Currie and Paris 2018). Cases such as Twitter's 'anti-misogyny quarantine band' (Yeohyum Bangyeokdae) (Fig. 1) induce public awareness by accumulating data of a specific nature in the data environment. The 'anti-misogyny quarantine band', which was created in September 2021, has shared articles on violence against women on Twitter and has requested the closing of the comment window on sexual crime articles (Jin, Jan 13, 2022). These cases do not require a high level of technical expertise, but they can be seen as examples of 'meta-affordance' creation and 'new affordance' creation (Milioni & Papa, 2022) using social media collection, classification, and presentation functions. It is seen as an affordance that online sexual violence news itself induces specific reactions from users (second offenses such as accusations of victims, and sexist hate speech).

Another case of creating a new affordance is the site titled 'The Press Again (Unlonei Ddo, Fig. 2) also operates a Twitter account and presents sexist news

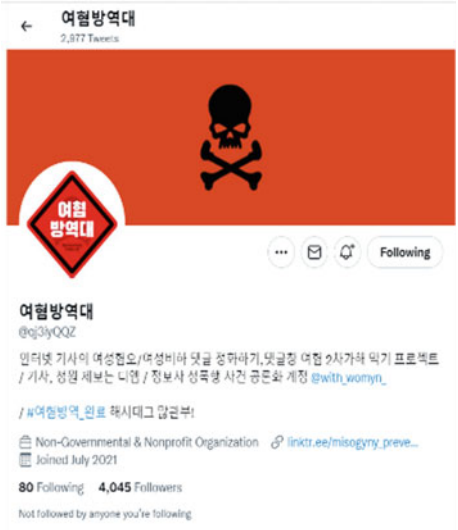

Fig. 1 Anti-misogyny Quarantine (Yeohyum Bangyeokdae)

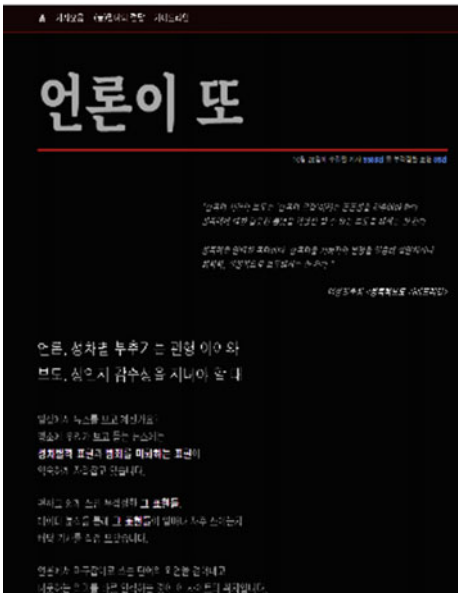

Fig. 2 Press Again (Unlonei Ddo)

reports by type through the homepage as well as the operation of a Twitter account. Archives media reports that use inappropriate viewpoints and terminology, such as undermining/covering up, demonizing/demonstrating, hidden camera, #MeToo (I was also hit), revenge porn, and child pornography in sexual crime reports. In addition, it presents the ranking of the media companies that report the most inappropriate articles (Hall of Fame), along with a report on sexual violence incidents, guidelines for reporting sexual violence, and detailed recommendations for reporting sexual violence crimes.

Meanwhile, female entertainers, influencers, journalists, and politicians in Korean society have become the object of routine privacy infringement along with datafication. In 2018, female idol entertainers' consecutive suicidal incidents revealed how characteristics of female celebrities and misogynic problems had been amplified in the digital spaces. In the background, new generations' activism equipped with fandom and technology on the idol industry is shown as fans' activities to improve the negative image of their favorite entertainers online. Specifically, female entertainers are vulnerable to sexual image distribution and sexual harassment, and young women have worked on purifying negative keywords in search engine or portal site related to specific female entertainers into other positive related keywords by establishing a 'female entertainer-related keyword purification bot.' The content for purification in the pertinent Twitter account is shared, captured, and publicized to other communities. According to an article, a related keyword deletion movement that was triggered by the death of Sulli was expanded to the purification movement of famous female entertainers' keywords such as Jennie of Black Pink and Yeri of Red Velvet. The movement is carried out as follows: polling

female entertainers whose keywords are needed to delete by receiving reports from fans, entering positive keywords in the search engines and portal sites related to the pertinent female entertainers, for example, a new keyword such as Love XX or XX's song, or reporting the existing keywords (Kim, Nov. 8, 2019). These cases are typical ones that make meta-affordance and new affordance by reminding of technology affordance to improve gender injustice cases by anonymous or real-name individuals. The Anti-misogyny Quarantine is a case of archive activism, establishes an evidence-based archive, and confirms that sexual discrimination is distributed through diverse discourses, cultures, and contents. Therefore, the related keyword deletion movement creates meta-affordance within the portal-centered digital industrial structure. It can be viewed as an attempt to identify affordance operation method, offer self-examination on the activities online, and revise the activities (Figs 3 and 4).

The way these cases create oppositional affordances is categorized as follows. Due to the reactive activism from misogynic culture, the cases take the character of an ex-post reaction to the already gendered cases of injustice. However, in Table 1, preemptive and ex-post criteria are divided based on the before and after a specific event. Also, refer to the classification of Milioni and Papa (2022) for the type of oppositional affordance, but the same case could not fit into one oppositional affordances.

The method to expose positive keywords together by identifying a platform operation method can produce limitations quickly. For example, many cases show that memorial keywords for a deceased entertainer disappear in a month, and sexual, discriminatory keywords are attached again (Kim, Nov. 8, 2019). Following the entertainment news, comment pages are cases where Daum Kakao deletes related

Fig. 3 Total attack bot for female celebrities

Fig. 4 The methods of deleting related keywords in portal sites

Table 1 The classification of oppositional affordances for Korean data activism types

The types of the oppositional affordances for data activism	Proactive activism	Reactive activism
The finding of hidden affordances (presenting for not using affordance well)		– Supporting DNA filtering of non-consensual distribution
The making new affordances (imagination of a new world)		– Closing of comment system or related keyword system in the portal sites
The making **meta-affordances** (awareness mechanism of algorithms)	– Team Tracer Flame(Chujeokdan Bulkkot) – Hashtag activism – Archive activism (anti-misogyny quarantine band:Yeohyum Bangyeokdae, The Press Again: Unlonei Ddo)	– Total Attack bot for female celebrities
The finding of **anti-affordances** (the anti-practices from tech giants designing)		– The movement of closure of commenting system – Total Attack bot for female celebrities

keywords, pressuring tech companies to remove profitability affordance, which can be part of activism. These cases are reactive to extreme cases such as female entertainers' suicide incidents due to misogynic violence, malicious comments, and digital sexual violence damages, and are post-activism, so there are limitations. Also, there is a limitation that technology's technical placement is accepted as a permanent structure, within which resistant affordance is output temporarily. A problem that social response to digital sexual violence is limited to technical solutions and punishment consolidation is raised. Kim (2021) saw digital sexual violence as novel violence

occurring in the new technology society and pointed out that various attempts at the solution through the use of technology affect removing the pertinent problems in the structural and historical sexual violence history. The damage recovery and victim perspective are removed in the discourse of filtering technology or harsh punishment against attackers. In other words, technical solutions are those for technical problems, but they are fundamentally parallel with the sexual equality realization issue.

Meanwhile, there is a need to share the gendered injustice that young women experience as digital native people, and the technical resistance cases need to be recorded. Since data activism aims to realize justice through data and technology, defining and analyzing young women's activities as meaningful activism is necessary. What needs to be emphasized is that making invisible gender injustice visible and that the output of resistant affordance to control technology and industry-centered discourse needs some change in political power and social and cultural discourse. Data activism in South Korea has a meaning as a circulating movement in a more extensive digital ecosystem, not limited to one-off and temporary and individual cases.

5 Conclusion

This study aims to show that datafication does not operate equally for all people. Even if we predict technology can fix problems in our society, in real technology can be operated while reflecting established social problems. Especially this study wanted to emphasize that problems in data society could appear for 'marginalized groups' such as women. Understanding gendered injustice in a data society and datafication with a gendered perspective is connected to the need for activism using data and technology to defend individual rights and society's fundamental changes. For instance, various organizations centered on young women contributing to making South Korean digital sexual violence crimes have played a role as data activists. They are accustomed to technology culture as a digital native and present monitoring of support for deletion and technical solutions. Various attempts such as understanding technology society's operation principles and accumulating cases of injustice as an evidence-based archive by using and suggesting them to the public and utilizing technology can be an example. Data activists-mediated data activism affects various subjects, technologies, and discourses in the digital environment and is expanded. It also encompasses various attempts that can be called digital activism. For example, hashtag movements, including the MeToo Movement in the global social media environment such as Twitter among the flood of data, enable solidarity among people, enhance the visibility of specific movements, and support the related movements. Therefore, these can be famous cases of data activism. In addition, diversities of attempts to promote social movements through Twitter space, identify sexual differentiation such as news articles and judgments, and develop archives have been made. From the South Korean context, the portal's related keyword deletion movement makes the public recognize the problems and limitations of portal sites' affordance

and makes the pertinent female entertainer-related keywords combine with positive words. Thus, the movement can be classified as part of making meta-affordance. This reveals that the data environment consists of citizens' repeated search and participation, and simultaneously the data environment improvement is shown to be made by citizens' participation.

Discussions of data activism have been defined as being carried out mainly by experts or some accustomed to technology. However, various attempts with a critical mind on the current technology operation principles that affect tech companies can be embraced. Namely, the ultimate goal can be improving social and cultural discourses and the recognition arena through discourse and policy intervention and technology intervention. Individualized data activism has a limitation in that it can be just a temporary movement rather than something that improves a massive portal power's gender-biased affordance or causes cracks. Although entertainment news's comment box was abolished after female entertainers' suicide, entertainment news is posted on the social page, and induction of posting comments has been frequently made. These cases have a post-nature after incidents occur, which can also be a limitation.

Nonetheless, various attempts to continuously point out, record, and improve the gendered affordance of the data environment must be interpreted as essential to improving affordance. Through elaborated discussions of privacy and surveillance capitalism, the fact that datafication is revealed as the gendered outcome should create history and context. The technology experiences and injustices of female youth as digital natives confirm that the data activism can be expanded to mainstream discourses and political activities rather than being limited to the technology and media discourses. This study wanted to reveal the fact of injustice in datafication and to emphasize the meanings of data activism by digital natives. In doing so, we can say that the digital polis is not static but a dynamic and constructive concept in progress. In addition, we should consider what we do to make a better digital polis.

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Subjection or Subjectification: Representation of 'Networked Individuals' in Korean Web Novels

Inhyeok Yu

Abstract The purpose of this article is to interpret the 'networked individual' in Korean web novels in the perspective of 'machinic enslavement'. I will argue that the network functions as a device that subordinates humans to the huge machine of capitalism in modern society, and that current Korean web novels are properly representing this phenomenon. Ultimately, this essay attempts to reveal the contradictory situation the individual subject is experiencing in the digital polis, digitally expanded social space. Chapter 2 examines the spatial background of Korean web novels. In particular, it delves into the way the network is reproduced as an environment that objectifies the subject such as a super panopticon. Chapter 3 analyzes the temporal background of recent Korean web novels. This chapter argues that the post-apocalyptic situation forces the individual to tolerate 'objectification of the subject'. Here, post-apocalypse represents an unfair market, and it is a condition in which subjects must endure injustice in order to survive. However, on the other hand, post-apocalypse is appeared as an aspect of 'creative destruction' which revitalizes currently stagnant social mobility. Chapter 4 analyzes the types of protagonists in recent Korean web novels. Former Korean web novels repeatedly reproduced cyborgs mediated in a digital environment. At this time, the cyborg was like a machine, able to withstand inhuman labor intensity, and on the other hand, it was a utopian body that recognizes and improves his 'specs' like a machine. However, in recent years, the type of protagonist who utilizes personality and authenticity, not machine-like labor, has become the mainstream. This reflects the situation in the 'attention economy', where human personality is increasingly evaluated as an important quality. This reveals that Korean web novels properly grasp the contradictory conditions of current capitalism and reproduce the appropriate subjectivity. In short, the current web novel shows the latest version of the 'free worker' that capitalism demands: the more the human figure

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becomes subjective, the more they are reduced to a part of an efficient mechanized device.

Keywords Web novel · Networked individual · Multi-panopticon · Attention economy · Post-apocalypse · Cyborg · Machinic enslavement

1 Networked Individual: Machinic Enslavement of Humans

The purpose of this article is to interpret 'networked individual' in Korean web novels from the point of view of 'machinic enslavement'. A networked individual refers to a subject newly born with the development of information and communication technology. In other words, it refers to a modern human being who forms a personal network with his/her own choice, leaving the locality-based social community, as the Internet develops (Castells 2003).

This discourse on humans is divisive and humanistic. Networked individuals tend to differentiate into two opposing representations. First of all, he/she is a free individual. He/She is liberated from the given boundaries and autonomously organizes and utilizes the network according to individual choices. 'Hackers' such as Neo in *The Matrix* (1998) and Major Kusanagi in *Ghost in the Shell* (1995) are typical examples. However, the networked individual is not a free subject either. He/She lost his autonomy in the network, as terms such as 'Internet addiction' and 'SNS addiction' indicate. This is properly represented through symbols such as 'reclusive loner'. This duality reflects the duality of academic and popular discourses looking at the digital society.

On the other hand, the discourse on the networked individual is humanistic. For it defines the network as a human tool. That is, while affirming the technological power of the network, it encourages the subject to make the wise use of it. At this time, the hacker or the reclusive loner will represent a human being who uses his or her tools appropriately or incorrectly. This shows the view that the capabilities and ethics of human subjects using technology should be strengthened.

However, according to Maurizio Lazzarato, technology and machinery are not merely human tools, but 'social machines' that produce subjects. It creates a form of subjectivity to reproduce a capitalist society. In other words, it subjugates the subject in order to operate the gigantic machine called capitalism (Lazzarato 2014).

When the network is understood as a social machine, networked individuals become the subject produced by such a machine. Accepting this point of view also requires revising the divisive and humanistic viewpoints of networked individuals. Humans are not divisive. Their duality is entirely the effect produced by the machine. Namely, the subject autonomously utilizing the network and the subject subordinated to it are all human beings needed by capitalism combined with digital technology. Terranova's netslave represents this very subject. According to Terranova, both producing content and consuming content eagerly in the digital society

have the characteristics of 'free labor'(Terranova 2004). This is because advanced capitalism in the twenty-first century uses data as a natural resource, and users are producing it in the form of unpaid labor (Srnicek 2016).

Then, the humanistic campaign of 'networked individual' is also not appropriate. In other words, a slogan that pitches for strengthening the human capacity to use the network or cultivating the ability to autonomously control the network is not appropriate. Conversely, we need to examine how the network mobilizes humans and what autonomy, self-control, or pleasure it requires.

Based on this awareness of the problem, the text we want to examine is the web novel. Web novels refer to storytelling products that are published serially on web platforms such as Kakaopage or Naver series. We currently have a lifestyle of frequently accessing the Internet through mobile devices. At this time, the web novel is 'a 'snack culture' which refers to cultural contents consumed in a short time of 5 to 10 min, just like eating a snack such as a cookie' (Korea Creative Content Agency 2018, 13). Its market is growing rapidly from about 20 billion won in 2014 to about 400 billion won in 2018 (Korea Creative Content Agency 2018, 3). Here, I would like to emphasize that web novels have become a representative product in overall Korean Mass culture, especially in contemporary Internet culture.

These web novels have been selected as the subject of study for three interrelated reasons. First, recent web novels comprehensively reproduce the contradictory identity of networked individuals. From the mid-2010s, in Korean web novels, storytelling in which a young man as a subordinate relays on a network his/her brutal struggle for survival and is reborn as a competent subject with the support of spectators has become customary. Here, the network appeared as an environment for inhuman competition for survival and as a condition for demonstrating social mobility at the same time. And the characters in the web novel are portrayed as contradictory beings who use oppression as an opportunity for subjectification.

Second, the representation of the networked individual in the web novel can be understood as the self-expression of the digital native generation. In web novels, consumers and producers of information are recognized as overlapping (Ryu 2019, 12). Namely, web novels do not have a clear boundary between the author and the reader of 'Literature'. In this case, the networked individual of a web novel should be understood as showing the internal perception of the group participating in the web novel, rather than the perception obtained through the observation from the outside. In other words, the duality of the networked individual is being revealed by the self-reflection of the digital native generation.

Third, the representation of networked individuals in web novels is being mass-reproduced. Currently, networked personal representations of contradictory nature are recycled in various works to form clichés. This means that the readers of web novels collectively demand the above image of the subject, and are enjoying vicarious satisfaction by means of the image.

In summary, reflecting the collective desire and identity of the current digital native generation, the representation of networked individuals in web novels is being produced in large quantities. Through the analysis of these web novels, we

will examine what kind of subject the networked individual is expressed in modern society.

Awareness of this issue is to revisit the complex relationship between urban communities and their subjects in the digital age. In urban communities such as the ancient polis, citizens and slaves were clearly separated. However, in modern life, the boundaries between these segments are not clear. We accept the contradiction of enduring voluntary subjugation in order to become the subject of the digital world. We will explore in detail the conditions under which the environment of digital networks makes this paradox possible.

2 From Cyberspace to Network: Spatial Desubjectification of Networked Individuals

When examining the representation of networked individuals, the first thing to analyze is the spatial nature of the network. This is because the name of the network is a spatial metaphor. At this time, the analysis of networked individuals is to explore what kind of spatial device the network is changing human beings.

> I was now seeing something stranger than the content of that breaking news. A letter appeared in front of me.
>
> [Congratulations on being invited to the tutorial world, Ho-jae Lee.]
>
> Tutorial? Are they referring to the tutorial that tells you how to operate the game at its beginning? Does heavy drinking make me see things? Or did I just go crazy?
>
> . . .
>
> "...Yes."
>
> My answer came out through my cracked throat. Is it all right to answer like this? After answering, the message changed.
>
> [Please select the desired difficulty level. According to the difficulty level, the danger level of the tutorial stage increases, and the rewards and growth rate increase proportionally.] There were four options. Easy, Normal, Hard, Hell. Four kinds of difficulty levels respectively with different English words. Without thinking, I decided. (Gandara, "*The Tutorial is Too Difficult*", Munpia. Episodes 1, 4)

The Tutorial is Too Difficult (2016–2018) is a web novel whose narrative background is the network. The main character of this novel, Ho-jae Lee, was moved to a world like a digital game embodied due to a mysterious phenomenon. In the above quotation, we can find that the *Tutorial* is intended for readers familiar with the world of digital games. First of all, *Tutorial* is a narrative of 'tutorial mode' as a guide stage for game content. And the experience of communicating with non-personal programs through the graphical user interface is also reflected. The main character also faces people who choose 'Hell Difficulty', which reflects the fact that a lot of multiplayer game services divide users based on difficulty level.

However, the explanation that the *Tutorial* is set in a network is not limited to the meaning that it is a digital space. The narrative background of this novel exposes

a distinct difference from the digital space that appeared in the past pop culture. Until now, a common digital space in popular culture was version of cyberspace. In William Gibson's *Neuromancer*, cyberspace is described as a global database and 'synesthetic fantasy experienced every day' by millions of users (Gibson 2004, 85). This cyberspace is vast and homogeneous. It is vast. Because it is spread out on the same scale as the world itself. On the other hand, it is homogeneous. The real world is divided into elements such as regions, cultures, and classes, but cyberspace is a virtual image shared by everyone. This character of cyberspace was reproduced in popular culture after *Neuromancer*. 'Net' from *Ghost in the Shell*, 'The Matrix' from *The Matrix*, and 'Oasis' from *Ready Player One* are typical examples.

However, *Tutorial* reproduces a digital space different from cyberspace. It is vast and not a homogeneous space. If the oasis of *Ready Player One* is a space where you can meet people from the other side of the world, the world of *Tutorial* is a space that isolates people according to specific conditions. First of all, it divides people according to the difficulty level, and there are borders that cannot be crossed even by country. This is a setting that reflects the fact that the server of the multiplayer game is divided according to the accessed country or difficulty level.

This space shows the concept of the Internet as a connection of 'networks' rather than cyberspace as a single virtual world. So, if cyberspace is a space that neutralizes spatial differences and confronts others, a network is a space where individuals are connected while maintaining their differences.

> Actually, it's not that boring fantasy that I'm worried about right now, it's the voyeurs who are showing excessive interest in me.
>
> [The god of adventure marvels at you]
>
> [The god of cynicism is curious about you]
>
> [The warrior god shows interest in you]
>
> [The god of Slow praises your will]
>
> . . .
>
> [There are many gods who respond positively to you. 5500 points have been obtained]
>
> [There are a number of gods who react negatively to you. 400 points will be deducted]
>
> (*Tutorial*, Episode 28)

The characteristic that the network is not a single space constitutes the narrative core of *Tutorial*. In this novel, anonymous viewers observe and support the 'play' of game participants including Lee, Ho-jae. At this time, the protagonist and the viewers appear to be separated in different dimensions. Of course, this aspect makes a narrative of the cultural experience of one-person media. In personal broadcasting through the Internet platform, the subject is divided into two spaces. Assuming that 'a game play' is broadcast, the subject is interacting with other gamers in the online space, such as collaborating or competing. And on the other hand, they are connected with the viewers. These viewers are connected to gamers without being directly involved in the game. And the gamer's body becomes the node between these heterogeneous spaces. *Tutorial* expresses this dual spatiality in a fantastic way. This indicates that networking takes place in spaces of difference.

In short, the background of the *Tutorial* is not a cyberspace, but a network. If a cyberspace uses a large space as a metaphor, a network embodies the connection of individual things. The important question here is: As a space different from the cyberspace, what kind of effect does the network produce? To answer this, we need to look at the differences between cyberspace and network actors.

First of all, people in the cyberspace often acquire autonomy by escaping from oppressive reality. Case from *Neuromancer*, Motoko Kusanagi from *Ghost in the Shell*, Neo from *The Matrix*, etc. showed entering the cyberspace to overcome the limitations of reality. Korean web novels have also dealt with these subjects for a long time. After the commercial success of *Legendary Moonlight Sculptor*(달빛조각사, 2007–2019), the story of a young man who is a subordinate subject turning his life around through virtual reality has become customary (Kim et al. 2018, 59–61). As a result, protagonist types with dynamic social mobility in a vast cyberspace have long been in vogue.

On the other hand, in *Tutorial*, the network is a space that limits individual autonomy like a prison. First of all, it is impossible for individuals to freely move there. In *Tutorial*, people's goal is to get out of the virtual world. They can go outside after passing the last mission, which is why they continue to take on very dangerous missions. On the other hand, in the Tutorial world, people who are divided into four parts of 'Easy, Normal, Hard, and Hell' can only interact with each other in a very limited way. In other words, the world is expressed as a space where communication with other communities is not free.

The Tutorial is reminiscent of the structure of a prison on a deeper level. It is a prison of sight. In other words, the network is being reproduced as a spatial device of visual power that objectifies humans. In *Tutorial*, Ho-jae Lee is surrounded by numerous viewers. Here, Ho-jae Lee cannot recognize the presence of viewers, but viewers can see Ho-jae Lee. Therefore, Ho-jae Lee cannot be said to be a subject of seeing at all. On the contrary, he is an objectified being. This aspect is similar to the panopticon as a spatial monitoring device that Bentham and Foucault talked about. The key concept of the panopticon structure is the unevenness of visual power. The watcher sees the inmates in the invisible state while the latter is watched without seeing the former. In this way, the panopticon makes the prisoner always aware of the watcher's gaze. Ho-jae Lee of *Tutorial* is also a surveillance target in the sense that he is seen without seeing it. However, Ho-jae Lee is imprisoned in the direct opposite way of the panopticon. In the panopticon, a single watcher exerts their sight-power over several targets. However, in *Tutorial*, several watchers exercise visual power over one person. This is a system that can be called multi-network monitoring (多網監視).

After having examined this far, *Tutorial* seems to be an allegory that reveals the negative aspects of network culture. The network is vast. But it does not bind people together as a community. Meanwhile, in the network, we are connected to a large number of others. Individuals expose themselves through one-person broadcasts or SNS. And this self-expression is observed by anonymous others. At that time, the individual is captured by numerous gazes and further becomes objectified. Thus, the

network changes to an environment where human interaction cannot be controlled by the subject's will.

And yet, it is at this point that *Tutorial* becomes interesting. *Tutorial* does not stop at accusing the network of operating as a spatial device to objectify humans. Thus, it distances itself from the enlightening lesson that 'reality is the only real thing'. *Tutorial* does not diagnose that individuals are objectified simply because they lack self-control or the network is too enticing. On the contrary, even when the subject is aware of the negativity of the network, it appears that they inevitably jump into the process of networking. Thus, it shows insight into why networking is required in the current capitalist society. We will analyze this aspect in detail in the next chapter.

3 Post-apocalypse: Temporal Background of Desubjectification

If the world of the *Tutorial* is a prison, it is an obscene prison. Ho-jae Lee, the protagonist of *Tutorial*, sees the beings observing him as 'voyeurs'. This is because viewers use the power of 'seeing without being seen' to obtain pleasure. They are immersed in the main character's struggles, admiring it, being curious, and harboring negative thoughts. Thus, the effort to escape the prison becomes an exciting spectacle, producing the pleasure for others.

However, even after Ho-jae Lee of *Tutorial* realizes that he is imprisoned in an obscene prison, he has no hesitation in exhibiting himself. That's because he is rewarded by viewers. Viewers offer money called points, and give special gifts to the person they like. Here, money is used to buy better tools, and gifts are very helpful for their special purposes. Namely, the protagonist receives the elements necessary for survival by providing himself as an object of pleasure. So, even though he did not clearly understand the social relations of the tutorial world, Ho-jae Lee was vaguely aware that it took on a form of trade.

In short, the reason the main character of *Tutorial* endures prison is because it is a kind of market. Of course, this aspect is to reproduce the market of the attention economy represented by personal media or influencers. According to Thomas Davenport and John Beck, attention is like real currency in the business of digital era (Davenport and Beck 2002). This is because the bandwidth of information has increased dramatically, but human attention is finite. Therefore, in modern society, competition takes the form of inducing the attention of others with only a difference in degree. In other words, the condition that success requires attracting attention creates a subject form that actively 'desires other people's desires'.

However, in *Tutorial*, the market of attention economy is not expressed as a reciprocal space. It is an overwhelmingly consumer-dominated market. First of all, here, producers and consumers of goods do not meet on an equal footing. This is because consumers have the advantage of 'seeing without being seen'. On the other

hand, the environment also shrinks producers. Ho-jae Lee and other characters are under strong pressure to actively sell their labor.

> In 2014, a sudden change occurred on Earth. Monsters appeared from all over the world and started attacking people. Most of the monsters were subdued by the army, but firearms did not work on a few monsters. Many cities around the world were destroyed, and there were many casualties. (*Tutorial*, Episode 2)

> It felt like the world stopped with a ticking sound. And a voice came.
>
> [The free service of the 8612th planetary system has ended.]
>
> [The main scenario has begun.]
>
> It was a moment that changed the genre of my life. (Singchon. *Omniscient Reader.* Munpia. Episode 1. Hereinafter, *Omniscient Reader*)

> Hyunmoo was standing in the middle of the crossroad. The scenery of the city that had become a mess caught my eye. Most of the buildings visible were collapsed and covered with something purple, and the sky was full of dark red clouds as if on fire. (Corgi Bear. *Hoarding in Hell.* Kakao Page. Episode 1)

Recently, storytelling, which relays one's own activities to anonymous viewers, is identified as a sub-genre named 'the constellation'[성좌물星座物]. And the constellations are commonly set in a post-apocalyptic situation. As shown by the above quotation, the background of the constellations is the human world changed rapidly due to an extraterrestrial invasion such as *War of The Worlds*, a cosmic-scale earth development such as *The Ultimate Hitchhiker's Guide*, or a devastation by environmental pollution or nuclear explosion. And the support of viewers appears as an essential element to survive in a harsh environment. In other words, viewers enter the market for pleasure, but service providers must attract attention to survive. These differences in positions create an asymmetry of power.

The fact that the audience's attention is limited also works as a disadvantage. In other words, the support of the viewers is not enough for everyone to survive. Thus, the competition for attention intensifies. This aspect often violates the self-esteem of the subject. So, the situation in which the main character suffers from viewers who want a stimulating spectacle is a staple material in recent web novels. It unfolds in an unfair situation, forced to do undesirable things, such as killing citizens who ride on the subway (*Omniscient Reader*) or showing a sexual performance (*The Little Prince of the Ossuary*). The fact that there are so many competitors at this point makes this situation unavoidable.

Considering these points, post-apocalypticism can be understood as a temporal sign that expresses capitalism in modern society. This is so on two interrelated levels. First of all, post-apocalypse expresses the exploitative environment that takes place in the capitalist system. Here, the subject is commodifying themselves. Because they have nothing to sell but themselves. But as these human goods flood the market, competition intensifies. Of course, the subject can refuse to compete, but that is the same as giving up on survival. Here, the post-apocalypse expresses that capitalism oppresses human beings using 'free competition' as an excuse.

However, it is also an environment in which the paradoxical dynamics of capitalism are revealed. In other words, the post-apocalyptic state is revealing that a new

phase of capitalism called the attention economy is practicing 'creative destruction'. According to Joseph Schumpeter, capitalist subject essentially seek innovation for growth, which is understood as a destructive action on the existing order. (Schumpeter 2010) In short, capitalism is the power to break up fixed systems and relationships. Referring to this position, post-apocalypse in web novels can be understood as a process of breaking down a tightly entrenched class society and revitalizing social mobility.

> Living isn't fun. Also, I shouldn't have given up being a pro gamer. I was the best at the game. There may be disagreements, but in my prime, when I was active for a long time, I was definitely called the best. However, as time passed, I was pushed out of my position at the top, and I couldn't stand that fact, so I decided to retire. (*Tutorial*, Episode 4)

> I hate to admit the appearance of Yoo Sang-ah talking, but it was cool. Her face shining brightly as if all the world's spotlights are only shining on one person. If this world were a novel, the protagonist would be such a person. In fact, it was a natural result. I didn't try. But Yu Sang-ah made an effort. I read the web novel. Yu Sang-ah studied. So, it was natural for Yoo Sang-ah to become a full-time employee and my contract to be terminated. . . . If the genre of my life was not 'realism' but 'fantasy' ……. Could I have been the protagonist? I do not know. That is probably something that will never be known. (*Omniscient Reader*, Episode 1)

From the above quotation, we can confirm that the protagonists of the web novel are in a contradictory state of being youth without dynamics. Ho-jae Lee in *Tutorial* is out of the competition, and Dok-ja Kim in *Omniscient Reader* is an uncompetitive worker. Although they are young, they cannot exercise social mobility. However, the apocalypse annihilates the present world, providing an opportunity for a fresh start for young people who cannot dream of change or innovation. Thus, the cataclysm is not just a catastrophe, but an event that expresses the great transition to a new society. In this context, *Tutorial* and other web novel constellations become narratives of the subject who failed in the existing capitalist system, but exerts their capabilities in the system of networks and attention economy.

In summary, the reason that the main character endures objectification in web novel constellations such as *Tutorial* is due to the two effects of post-apocalyptic representation. First, the post-apocalyptic situation limits the subject's choice. The harsh conditions of survival are forcing them to participate in an unfair market. On the other hand, it provides an opportunity for the regeneration to marginalized subjects. Thus, it is possible to escape from the stagnation and exercise social mobility. In this duality, subjectification appears as an inseparable relationship with objectification.

4 Individual Cyborg: Paradoxical Subjectification of Humans

According to what we have seen so far, the networked individual shown in the web novel is in a dual environment. First of all, the spatial background called the network

works as a force to objectify humans. And the temporal background of the post-apocalypse is exerting the power to make people participate in such a space. This can be seen as a fictional representation of the real context of networked individuals.

What is interesting is that these environmental conditions do not just make humans endure objectification, but on the contrary, it is a device that requires them to display their human autonomy actively. In other words, recent web novels reveal that humans are increasingly required to expose their individuality in networks. Thus, it is captured that capitalism seeks to mobilize human beings with individuality rather than simply skilled workers, and thus emphasizes the subjectivity that resists such instrumentalization, rather than merely reducing humans to a part of a gigantic machine.

> (a) "Can anyone beat a scarecrow for at least a month just to raise this level? If you are a human, you cannot do it because you are bored". Everyone who was watching nodded their heads. If you had to beat the scarecrow to death for a month in order to increase your strength by about 40, you would rather get good equipment at that time. Equipment that raises the strength by about 40 is rare, but it wasn't something that couldn't be obtained.
>
> . . .
>
> 'What is it that is boring and difficult?'
>
> Weed powerfully swung his wooden sword. Little by little, the character becomes stronger. They grow up They catch stronger monsters. And they make more money There was nothing more interesting than this in Weed's life. Weed was a natural navvy constitution. (Hee-seong Nam. *Legendary Moonlight Sculptor.* Kakao Page, Episode 3)

> (b) Challenge without stopping. Challenge and challenge again to gain experience and grow. Even if you dodge arrows or not, you gain experience anyway. . . . No matter how painful it is, let's grow as much as we can on this first floor. It's scary to get hurt, so if you shrink, you won't be able to grow. Now is the time to move forward.
>
> [The God of Adventure is interested in you.]
>
> [Physical strength increases by 1.] (*Tutorial*, Episode 10)

> (c) [. . . That's really cool.]
>
> A bright electric current rushing through the darkness. Bihyung was floating in the air, maintaining his hazy form.
>
> "How to use Stonehog's thorns like that. I hadn't even thought of it. Constellations, isn't it?"
>
> . . .
>
> Few constellations smile as if they knew. The constellations sponsored 100 coins. A few constellations belatedly understand your judgment. The constellations complain that they will tell them to themselves from now on. (*Omniscient Reader*, Episode 15)

This aspect can be confirmed that Korean web novels have gradually changed the storytelling in the direction of emphasizing the human qualities in the mechanical performance of the main character. Quotation (a) is a part of Nam, Hee-seong's *Legendary Moonlight Sculptor*. The main pleasure of this novel lies in the 'leveling up' of the protagonist. 'Level' is a digital game term and refers to the numerical expression of a game character's abilities. And level-up refers to the action of improving the character's ability statics by performing missions in the game. In other

words, *Legendary Moonlight Sculptor* set the narrative background to cyberspace, imagining the existence of a 'digital cyborg' that has 'specs' like a machine and can also improve them.

These protagonists perform mechanical virtues. In (a), Hyun Lee is described as being able to repeat a very simple action indefinitely. It is to perform labor that is tedious or painful for a 'human being' and therefore cannot be sustained for long. Namely, Hyun Lee became a 'cyborg, a hybrid of human and machine,' and became a being capable of continuing high-intensity labor for a long time without physical wear, and at the same time improving his overall productivity.

Such cyborgs have long been established as standard character types in Korean web novels. Thus, the story of a young man who was alienated from reality and reborn as a competent subject through leveling up in cyberspace was repeated extensively. However, the new flow of web novels that started with *Tutorial* is correcting this trend. Still, the main character of the web novel is a cyborg who 'levels up'. However, the cyborg's ability to mobilize for leveling up turned into human charm rather than mechanical labor. (b) is a scene from *Tutorial*. Here, too, the protagonist is performing level-up. If there is an important difference, it is that human empathy has become an important factor in leveling up. Ho-jae Lee's efforts lead to the viewer's immersion. His strong obsession with survival makes viewers admire, which makes him obtain active support from them. Here, Ho-jae Lee's 'humanity' or 'individuality' is evaluated as important as his ability itself. This is completely different from Hyun Lee's case. Hyun Lee's efforts were a sign of his inhumanity. Therefore, the expression that his actions make the viewer 'sick and tired' is repeated several times throughout *Legendary Moonlight Sculptor*. In other words, only the performance of the mission was important to him, and the reaction of those who looked at it was secondary. However, for Ho-jae Lee, whether viewers agree is an important factor in the competition. This is because the greater the empathy, the greater the support and the greater the possibility of survival. This aspect was similarly repeated in (c). Here, the act of breaking the expectations of viewers is emphasized. In other words, the unexpectedness of the subject is shown as a quality that expands the possibility of empathy and immersion in others and expands the possibility of survival by actively inducing support. Viewers aren't just asking for the mission to be solved, they're asking for it to be done in an interesting way.

Recent web novels really emphasize qualities such as improvisation, eloquence, and tenacity of the subject. In this way, the story emphasizes the personality as well as the performance of the subject. This reflects the general nature of the recent attention economy. According to Thomas Davenport and John Beck, in the network, one should be not only just to be good but also really different and authentic (Davenport and Beck 2002). The network is overflowing with a lot of information, products, and humans, so it is difficult to succeed without a point of differentiation from competitors. Thus, practical advice from successful 'creators' always includes the message to emphasize individuality.

The problem is that the more the subject's individuality is developed, the more deeply they are trapped in the net of objectification. As shown by the trend of new web novels such as *Tutorial* and *Omniscient Reader*, the expression of individuality

leads to an increase in attention. And the increased attention leads to intensifying obscene surveillance. This is not just a phenomenon limited to fictional stories such as *Tutorial* or some examples of one-person media that they imitate. In the network, we attract attention through self-expression. In other words, we express ourselves by revealing subjective attractiveness beyond revealing our objective indicators on SNS. However, the more people's interest is gathered by revealing my subjectivity, the more my daily life becomes a subject of constant observation. Conclusively, we are responding to the demand for authentic self-expression, which in turn becomes a practice of effectively objectifying ourselves.

5 Subjection or Subjectification of Networked Individuals

So far, we have looked at the representation of networked individuals in Korean web novels. Chapter 2 examined the spatial background of Korean web novels. In web novels since the mid-2010s, the network has been reproduced as a space that connects disparate things, which is a completely different background from the 'homogeneous and vast' cyberspace. In particular, it was working as a force to objectify the subject by making it 'seen without seeing'. Chapter 3 analyzed the temporal background of recent Korean web novels. Thus, it was investigated that the post-apocalyptic situation appears to be the cause of making the subject endure their own 'objectification'. On the one hand, post-apocalypticism is an expression of an unfair market, a condition in which subjects must endure impartiality in order to survive. However, on the other hand, post-apocalypse was an environment that revitalized stagnant social mobility as one aspect of 'creative destruction'. Chapter 4 analyzed the character figure of recent Korean web novels. Existing Korean web novels repeatedly reproduced cyborgs in a digital environment. At this time, the cyborg was a utopian body that could endure inhuman intensity of labor like a machine and, on the other hand, grasped and improved his 'spec' like a machine. However, in recent web novels, the protagonist's personality and sincerity are used instead of machine-like labor to improve his or her specifications. This reflects the situation in the attention economy where human personality is increasingly valued as an important quality.

If we look at it up to this point, it becomes clear that Korean web novels capture the image of a truly contradictory subject. For example, the protagonist in *Tutorial* is imprisoned, but uses the watchers beyond the prison to try to survive. On the one hand, he is in an unfair market, but it is also the last place to practice social mobility. And although he is objectified by obscene gaze, on the other hand, others are supporting the autonomous expression of the subject's individuality and authenticity.

With this aspect in mind, it is significant that the storytelling of web novels is developing a process that eventually leaves the network. The protagonists of the constellations that use 'streaming' as their subject, including the aforementioned *Tutorial* and *Omniscient Reader*, usually aim to become free from the interference of the viewers. In other words, they grow through the support of viewers, and based on that power, overcame the interference of viewers, and eventually develops a journey

to become self-reliant. Here, the subject desires the desires of others, but on the other hand, he is trying to escape from the obscene prison. These contents may express the image of a subject who lives in capitalist conditions but wants to escape from it. In other words, they were given a position in the social machine called a network, but it can be seen as an expression of the desire to become independent there.

However, this is also a narrative that shows that network-based capitalism is absorbing even the power of resistance with its own capabilities. This is because the practice for self-reliance ultimately becomes a part of the spectacle and is absorbed into the attention economy. In short, an individual's efforts to escape surveillance become a rare spectacle in the end. Ironically, the process of subjectification is precisely intertwined with the process of subjection. This aspect means that Korean web novels properly grasp the contradictory conditions of current capitalism and reproduce subjectivity suitable for them. Capitalism, which is currently taking place in the space of networks, especially demands the autonomy of market participants. In other words, it requests individuals to actively develop themselves and commercialize it. Briefly, what the web novels are showing now is the human figure that is reduced to a part of a more efficient machine as he/she becomes more subjective. It presents the latest version of the free labor, who is willingly commercializes oneself, required by network-based capitalism.

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Real-and-Virtual Combined Urbanity in Seoul and Istanbul

Digital Polis and Urban Commons: Justice Beyond the Gated Community

Eun-Joo Kim

1 Introduction

Digital polis, unlike conventional cities, is an urban space and community that operates through digital media, and simultaneously acts as a digital medium, thereby becoming a digital medium (Kim 2021). The digital polis is characterized by urban digitalization, which refers to 'a change in the technological foundation of a city through artificial intelligence (AI), Internet of Things (IoTs), digital technology, network technology, social media technology' (Kim 2020b).

The digitalization of cities emerges as 'platform urbanism' that recognizes and solves problems related to life and experiences in the city on a digital platform. Urban digitization based on platform urbanism implies a transformation of a city into a type of operating system, which operates based on AI technology, digital network, and IoTs technology, while building the city as a medium. This city occasionally appears as a type of solution machine equipped with hardware or software, which resolves problems by interlocking with various applications. Urban digitization, beyond technical issues, is complexly intertwined with various issues, such as infrastructure, governance, citizen participation, mobility, environment, and quality of life (Kim 2020b). A city is transformed into a giant medium through urban digital transformation, and digital polis is predominantly characterized by the city as a medium. In this respect, urban digitization is to regard the city as a huge medium (Kim 2020b).

The digital polis as a medium inputs and outputs digital and biotechnology information on the body of city dwellers in an existential dimension. In this respect, the

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body is a technological object as a media device, as well as a technological environment that creates the space of a digital polis. The characteristics of the city as a medium of the digital polis are inseparable in the sense that the technologically mediated body becomes a place that creates a digital media space (Kim 2020a). Although this body may be a device in the individual dimension, the body itself is a complex network of society, culture, and environment, coupled with various devices, rather than a single entity (Peters 2015).

The creation and change of space in the digital polis correspond to the degree of vitality according to the connection to the body, and their effects are realized in the environment. If this space is displayed on a digital map, it appears as data containing the topological relationships of the spatial structure and the locations that make up that structure not only as information representation (Kim 2020b).[1] The digital polis appears as a non-Euclidean network of relationships arising from the effect of arrangement, in which urban elements interact regardless of their physical distances.

However, the digital polis as a medium can be alternatively regarded as the future of an automated smart city, which maximizes efficiency with a transhumanist worldview that assures progress and development or the optimism of technocraticism. This construct is a mere repetition of the modern worldview prioritizing growth, also showcasing a strong character of a gated community, which prioritizes safety through ubiquitous governance, as shown in major criticisms of smart cities.

(1) The characteristics of gated community in the digital polis limit the people, who could benefit from the digitalization of the city, and reflects the inequality resulting from dependence on technology.[2] (2) Smart city presupposes an automated system for optimizing scarce resources. Identification of smart city with digital polis shifts the operation of automated city based on software algorithm codes into an urban application of a safety-oriented demographic governance model under the pretext of controlling urban disasters and risks of that city, raising the possibility of a gated community (Dho 2017). Code governance can lay the foundation for a surveillance society, which utilizes the collection, accumulation, and analysis of data through automation and device platform network, suggesting the possibility of comprehensive monitoring through the smart home type following automated algorithms. (3) As indicated by Marc Andrejevic, the digital polis, as an automated medium, operates in the environment of individual actors to direct the direction of desire as a 'intervening preemption'. The method of preempting the direction of desire can be applied by encouraging the citizens of the digital polis to become an agent, who clicks 'Like' on an opinion-oriented according to an algorithm, rather than an independent being who contemplates.[3] Digital polis as a medium converts urban space into a platform, where a place of data extraction prevails over the spatiality and publicness of the city containing differences and diversity. Because a city is necessarily a public place, it becomes a place of social interaction and exchange, a place rich in interactively generated data (Andrejevic 2019). Digital polis can deteriorate into a space to extract and monetize data because it becomes a productive repository of information. In this respect, the futuristic city is occasionally criticized for machine of data collection (Andrejevic 2019).

This study, reexamines the criticism that the digital polis as a medium can become a gated community, and it operates as a place of population-based biopolitical governance, raising the question of 'how does a city last?' The purpose of this approach is to seek justice for the digital polis by problem understanding the digital polis as a medium as an environment, and raising it as a commons.

2 Environment of Digital Polis as Medium and Problem of Commons

2.1 Medium and Digital Polis as Environment

According to John Durham Peters, one medium encompasses other media, becoming 'environments that provide habitats for diverse form of life' and 'ensembles between elements of natural element and human craft' (Peters 2015, 3). Digital media are the way data shapes our being, as well as the technology that lies at the heart of human habitation on Earth. In particular, digital devices present media as 'environmental, as part of the habitat' (Peters 2015, 4).

Yuk Hui, referring to 'The Things (Das Ding)', an essay by Martin Heidegger in 1950 on this environment, describes the environment as things that 'gathers the fourfolds' and 'networks' as 'site', as in the way Heidegger described 'things as fourfolds (das Geviert)' (Hui 2016). The environment, as a network, passes through digital technology to create data, which is a digital object that constitutes a new form of givenness. The data are not given as natural and objective facts that preexist, exhibiting situational, partial, and constructive characteristics. In this regard, the digital object of data, the plural form of the Latin word *datum*, meaning given, allow us to inquire about what data conveys, and examine how the new form of the givenness is constituted (Hui 2016).

According to the same study, the digital polis as a medium is an environment that generates data, as well as a digital 'object' as the reality of the 'material relations to technical systems' (Hui 2016). Digital technology in digital polis, converts everything in the city into data. Because the activities in the city are the source of data, actors create the data surrounding themselves and the data generated during their activities in the environment of the digital polis, in addition to providing data regarding themselves. Actors consume, distribute, and produce data, which are the technological, social, institutional, physical, and symbolic infrastructure of the city. The data collected by the digital polis, in addition to the given, include the acts of human actors and non-human actors, such as fine dusts, climate, weather, air, and water quality, which are registered on the platform under interaction with digital technology.

The environment of digital polis as a medium interlocks with the creation and operation of data, which are digital objects. This raises the following question over the setting of the boundaries in the digital polis. This is an inquiry on the configuration

and setting of the boundary of the infrastructure that operates the digital polis, and an urge that the boundaries of the digital polis should not be set for reproducing the administrative territory alone.

The environment of the digital polis as a medium is a relational reality, which is not based on realism, demanding justice of a digital polis, which moves beyond justice for discussing the problems of resources within the community under the condition of the boundaries of modern territoriality. This demand raises a question over the justice of a digital polis in terms of commons. Then, what is the reason for raising the issue of justice as a commons?

The connection and creation of relationships are important in that the digital polis, as an environment, is a relational reality, in which human and non-human actors and digital technologies interplay. Because the continuation of the digital polis originates from the public spatiality, which induces interaction and interconnection, there is a need for contemplating the commonalities of digital polis through the commons, and examining the meaning of community. In this regard, we put forward the discussion through the example of S-MAP, which can be presented as a commons of the digital polis.

2.2 Limits of Cognition in S-MAP and Digital Commons

S-map, 'one of the ognition in S-MAP and Digital Commonsonment, Seoul Metropolitan Government, is a three-dimensional map built by replicating the entire 605.23 km^2 of Seoul, and incorporating it into cyberspace' (Choi 2021). S-Map compresses a large amount of data into one map, and uploads the model on the site of the same 3D virtual space as the real world for 'replicating the physical environment' (Choi 2021), enabling a quantitative analysis on various issues, such as right to a view, solar radiation, wind roads, and skyline. The goal of S-MAP is to reproduce the city of Seoul as it is in a virtual space.

S-MAP is a digital twin of Seoul. In particular, the reproduction of the inner city area implemented by S-MAP shows a high similarity to the physical space of Seoul. In contrast, for the boundaries of administrative districts in Seoul, 'the visualization of S-Map is achieved by blurring the outmost boundaries of Seoul (2020 data), or darkening them (2019 data) as blind spots' (Lee 2021). S-MAP presumes a world, in which all the mechanisms of city operation can be supported inside the city without having to establish a relationship with others worlds than Seoul. A digitally 'reproduced' Seoul faithfully follows the logic that this city should be one for both 'Seoulites' and taxpayers.

However, the infrastructure for Seoul to function as a city is inseparable from its relationship with other regions. Furthermore, the history of administrative boundaries shows that most of the boundaries that make up Seoul have been created by incorporating other places than Seoul. The operation of virtual Seoul pursued by S-MAP cannot be analyzed apart from its relationship with surrounding cities.

The logic of S-MAP representing administrative boundaries is based on the fact that its construction and provision have been funded by taxes of Seoul. This assumes digital commons called S-MAP and the right to use it as shared resources within the administrative boundaries of Seoul. In this respect, the digital commons called S-MAP is understood as a common-pool resource. This recognition corresponds to Elinor Ostrom's discussion on the commons, in which darkening outside the boundaries of Seoul aims to prevent free-riding by excluding potential beneficiaries.

From this perspective, the commons is a resource that can be used by the owner, whose value decreases through use. Commons is described as resources and objects awaiting use. The commons is referred to as 'resources', which implies it is viewed as objects of use and management alone. However, the 'consumption' of commons in urban communities may be a productive act that blurs the line between use and abuse (Kornbderger and Borch 2015). The commons that makes up an urban community depend on the ability of urban actors to use them. Moreover, the commons is also a cultural achievement unlocked by sharing language, knowledge, and images. The commons is inseparable from the community. The commons can be understood as a dynamic social process and product in the historical and socio-cultural context.

The discussion on the Commons, which presumes the S-MAP as a representation of administrative boundaries, may face criticisms as 'a viewpoint that is completely merged into the discourse of "homogeneous geography" that has molded the concepts of the modern territorial state and sovereignty'. From the viewpoint of flat geography, the commons is a possession which can be occupied by anyone. The debate and conflict over the right to the commons are to understand the commons from the perspective of a modern spatial thought based on a Euclidean grid space (Ahn and Yoon 2021).

However, the space where S-MAP operates and functions is that of non-Euclidean creation where data is registered. The function of S-MAP is not limited to the reproduction of real things. As shown in the urban analysis and simulation that S-MAP intends to implement, S-MAP implies the dynamic aspect of data, in which digital technologies and digital entities interact in the digital polis as both medium and environment.

As technical objects, such as S-MAP become materialized, they spotlight some new functions, not limited to part of the design. In the material aspect, they create an environment as they and they are rewritten in the daily life of the users of this technical object, exceeding the purpose of the invention (Hui 2016). The digital polis constitutes digital environment 'together with the sociotechnological artifacts', which are conditions for enabling the digital object, which is the relationship between matter and technology (Hui 2016). Rather, S-MAP requests reconsideration of commons by revealing the limits of cognition on the commons awaiting the use of owners.

3 Rethinking the Commons: Atmosphere, Foams, and Commons

Understanding the commons as a resource is limited, which is not suitable for thinking about the commons of the digital polis. The interest of this article lies in rethinking the commons by examining the discussion of Peter Sloterdijk, who raised the issue of boundary setting and composition of the commons from the perspective of the atmosphere.

Sloterdijk analyzes the atmosphere and the city in *Foams*, the last part of a trilogy of 'sphere' studies regarding being and space, published from 1998 to 2004. Unlike David Harvey, who understood the atmosphere as a common resource open to all (2013), Sloterdijk describes it as a closed form acting as a technology. According to Sloterdijk, the atmosphere as an environment, works through different types of atmospheric design techniques, producing certain political effects on the occupants of the space. Sloterdijk particularly explores which atmospheric design techniques are being introduced, witnessing the impact of atmospheric architecture on community building (Kornbderger and Borch 2015).

The atmospheric design analysis was devoted mainly to the atmospheric architecture that appeared in the war. Sloterdijk analyzes the war technology that the German army built in 1915 to target the air with which the French army breathes, and the gas chambers of the camps used as a method of genocide during the Second World War (Sloterdijk 2016). In addition, Sloterdijk laid emphasis on the biopolitics that governs the population, examining the genealogy of atmospheric design to control air-breathing urban populations with atmospheric conditioning technology.

In *Security, Territory, Population* (part of a lecture series at the Collège de France 1977–78), Michel Foucault analyzes biopolitical technology which is utilized to govern the human population as a species through the action of the environment by transforming urban space to create the environment and organize the organization (Foucault 2007). Sloterdijk, in line with this discussion by Foucault, examines atmospheric design in the city, noting that technologies, such as air conditioners, thermostats, and air sterilization, which build atmospheric conditions, have evolved with the development of metropolis, and they are the technique of dividing and governing a living population (Kornbderger and Borch 2015). This atmospheric design is the way technology rearranges the atmosphere as an environment, presenting that technology and environment are aligned in an inseparable interrelationship.

Atmosphere passing through atmospheric design techniques is not a single holistic one. Regarding this matter, Sloterdijk utilizes the concept of foams to describe atmospheres spatialized with various foams from micro to macro scales.[4] According to Sloterdijk, '"life" has a boundlessly manifold space-forming effect' (Sloterdijk 2016). He defines life as foam 'non-metaphysically and non-holistically' (Sloterdijk 2016). Life is foam. A foam is a type of monad, and all beings that exist within foams hold an impenetrable space. As a location of spatial composition, the individual foam builds the individual environment, and concurrently, it exists surrounded by other foams. Individual foams are intertwined with different types of foams within

their environment.[5] A foam is always adjacent to another foam while being cut off from the outside by a barrier. Barriers for foams range from symbols of language, culture, and customs through architectural features, such as walls, gates, roads, and fences, to digital technology media. The barrier of foams demarcates the boundaries of existence, serving as an interface in terms of a boundary shared with other adjacent foams (Sloterdijk 2016). Although foams, due to their characteristics, are present with the surrounding foams, foams hold fragile vulnerability along with a respective paradoxical interior that is interconnected in an impenetrable state. Each foam is a plurality of spaces that cannot be integrated or separated, and the process of building these foams is unstable, flowing, and fluctuating. The union of these foams constitutes a network of interactions based on the principle of common segregation holding spatial pluralities and power pluralities (Sloterdijk 2016).[6]

Sloterdijk describes the various atmospheres through foams, and presents the city as a 'foam city', a network of foams. He proposes that a city is a spatial complex constructed depending on the relationship and density of foams. Sloterdijk, referring to the history of urban architecture in the twentieth century, describes that the importance of breathing in urban spaces had been spotlighted and the atmospheric and climate issues had emerged in Europe in the 1990s, and accordingly, atmospheric design and climate technology have been gaining momentum. Atmospheric design is also the architecture of a foam city coupled with technology. In this respect, a city is a 'polyatmospheric' city to Sloterdijk.

In the foam city, monistic and real boundaries of the city, which unite the multiple atmospheres, and homogeneous atmospheric commons cannot be established (Sloterdijk 2016). The amenity of contemporary urban space is decorated with planterior, and this space provides no feeling or sensation about any change in the air by installing air conditioning and heating equipment, and controlling temperature and humidity to eliminate the outside weather. However, the atmosphere, in which this facility is in operation, functions with the outdoor unit of the air conditioner. The atmosphere in the moving helmet, which connects cities disconnected by the pandemic, is different from that in the kitchen where the catering workers work without the ventilation system. This demonstrates that the atmospheres of cities are diverse and microscopic, varying in size and composition, beyond the fact that not all atmospheres are equal.

In the city of many atmospherics and foams, atmospheric commons are created through communing, rather than preexisting. In the commoning of atmospheric commons, atmospheric design is a technique that intervenes in the creation of foams, which are both interfaces and barriers, as well as an actor involved in commoning. This can be understood in the context of Bruno Latour's actor–network theory, which defines technology itself as an actor in society. According to Latour, technologies, like humans, are non-human actants that bring about changes in society (Latour 2005). Technology creates relationships characterized by the fluidity of expansion and change, and no effect, usage, and meaning of technologies are predetermined. Commoning, which creates and demarcates commons, follows an actor–network in association with human actors, as well as technologies as non-human actors. Commoning is 'the connections' of 'human, unhuman, nonhuman, inhuman' actors

(Latour 1996). Both different human beings and non-humans coexist in a heterogeneous network implementing communing, further accompanied by the process of redefining their own characteristics (Latour 1996). The actors, who implement communing, are not limited to the existing commons; commoners are also formed during the creation of commons, which includes actors other than human beings (Kornbderger and Borch 2015).

Sloterdijk's discussion on foam city and atmospheric design presents the aspect of commons as a meta-collector, as well as its composition of commons in a multi-species microscopic foam coalition with urban actors (Kornbderger and Borch 2015). This has the implications of proposing an urban space, in which various actors are deeply intertwined, as a place for commoning as well as a zone for creating commoners as a collective actor–network constituting the boundaries of the commons.

4 Conclusion: Justice of Digital Polis Beyond Gated Community

In the digital polis, which is a relational reality, the creation and operation of data, which are digital objects, and the complex connection of networks interworking with them is essential for the continuation of the digital polis. However, the gated community by setting closed boundaries weakens the power of relational reality as a connection, and the influence of interaction. As the values of diversity and tolerance in the digital city fall due to digital enclosures and digital divides, the capacity for difference, retained by the city, the source of data creation, decreases, and the commons of the digital polis emerges as a resource, which emphasizes ownership and profitability. In this respect, commons appears in a form of 'gated' information commons that appropriates the meaning of accessibility to information through commercialization and patent rights, or in the form of commons that manufactures products (Federici et al. 2020).

As aforementioned, Sloterdijk's discussion on atmospheric design and 'many atmosphere' city, describes digital technology as the commoner, which is an actor that constitutes the boundaries of the commons, and the digital polis as the media environment as a place implementing commoning. Furthermore, the commons of the digital polis can be understood as a union of microscopic commons, as well as a macroscopic form with a single boundary. The emphasis regarding the meaning of the commons through this discussion should be placed on the implementation of commoning, which corresponds to 'togetherness' allocating and creating collective actors.

Then, where does the commoning in the digital polis take place? The places for creating microscopic commons, witnessed by this study, are the border zone essential for the operation of the digital polis, and the network connected with the infrastructure outside the physical boundary. In the border zone, there are networks,

such as water supply and sewage networks, electricity networks, gas networks, cable networks, military networks, and subways, which connect the separated administrative boundaries, and operate the digital polis. As shown in the case of the Gimpo Goldline, the subway between Gimpo and Seoul is a transportation network that compresses the time and space of cities, as well as the environment of the digital polis, which is an unmanned network device, equipped with a train control and monitoring system, transmitting and receiving train information data to and from the control center using data communication technology. Although industrial zones, in addition to border zone, that collect carbon and release it into the atmosphere are infrastructures outside the boundaries, which are physically distant from the digital polis, they are essential for the maintenance and continuation of the digital polis. This is not only because this infrastructure is the energy source that enables the digital polis to operate, but also because the use and emissions of carbon are provided in the data format, and carbon credits are traded as products in the online market through the emission trading system.

The transition of the digital polis into the gated community presents the commons with the purpose of generating profits by developing resources from the boundary zones while removing the conditions of the digital polis that is interlocked through a network connection in the border zone or outside the boundaries. Moreover, according to the empowerment justice proposed by Iris Marion Young, which includes actions and decision-making, as well as the provision of means to develop and exercise capacity (Young 2011), the transition into the gated community is close to injustice, which undermines the capacity of members in the community by preventing the relationship, openness, and accessibility of the digital polis.

In the digital polis primarily creates space in a manner that is independent of physical distance or Euclidean space. A digital polis that implements the commoning that increases the capacity of relational reality, cannot exist separately from outside the city boundaries, and it can be maintained through connection transcending the boundaries, such as myself and others, inside and outside, culture and nature, and metropolis and local areas. This respect the meaning of digital polis as a relational reality can be found in coexistence and symbiosis, rather than exploitation or utilization. Furthermore, the justice of a digital polis could be founded in its sustainability. Sustainability is secured through the proliferation of relationship connected to otherness, lying in promoted connections and created differences, as well as responsibilities connected to the future.[7] The commons in the digital polis that seeks this sustainability as justice, expands the concept of commons proposed by Anna Tsing, leading to the creation of communing capacity for ‘latent commons’ (Tsing 2015), which is a reciprocal and non-hostile ‘entaglement’. In this respect, the boundaries of the commons should be derived to contemplate the entanglement with technology, which is an ‘artificial device generating meanings’ through a commoner (Haraway 2004).

Notes

1. The space of the digital polis functions as an interface dimension, contactable for interfaces between objects and objects or between humans and objects.
2. The discussion about the gated community is based mainly on Mike Davis, *City of quartz: Excavating the future in Los Angeles,* Verso, 1990, and Edward Soja, *Postmetropolis 2: Six Discourses on Postmetropolis* (translated by Hyun-jae Lee et al.), Seoul: Raum, 2019.
3. Data can be utilized to create a profile after extracting the patterns of individuals. The personal information extracted in this manner can be used to predict their behaviors or desires.
4. Sloterdijk's works were influenced by Martin Heidegger's philosophy of existence, time, and technology.
5. This was Influenced by Heidegger's concept of *Dasein.*
6. Sloterdijk also understands society under the concept of foams, describing it as an 'asymmetrical union of foams' and a 'fluid and hybrid', rather than conceiving of it as an organic whole with homogeneous continuity. (Sloterdijk 54).
7. The discussion on the ethics of sustainability was written in reference to Braidotti (2006, 206–209).

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Production and Reproduction of Space and Culture in the Virtual Realm: Gated Communities as the Imaginary, Intermediary, and Real Spaces

Basak Tanulku

Abstract The term "gated communities" refers to the residential developments seen across the world that emerge due to increasing economic inequality, socio-cultural tensions, and, consequently, rising crime rates and fear of crime. There are different gated communities, such as high-rises and detached houses or those built in the city and outside. Many do not only comprise housing units but also provide various amenities and combine housing, businesses, and recreation. Gated communities usually target the upper and middle classes, who demand a safe space removed from various dangers. In most studies, gated communities are regarded as creating dualities and tensions between insiders and outsiders, private and public, and safe and dangerous. They are also studied within a physical space- realm, neglecting their virtual reality. This study is among the few efforts to analyse virtual gated communities. The paper is based on the visual content analysis of the Facebook and Instagram of two gated communities, Istanbul Istanbul and Kasaba. The paper argues that there are three forms of virtual gated communities. First, "imaginary-virtual gated communities" are established by supply-side actors such as developers to promote them. These social media accounts avoid reflecting on or demonstrating these communities' problems. Second, "intermediary- virtual gated communities" are created by demand side actors such as residents, showing the life inside these gated communities. However, since these are open to the public, they do not show the reality of gated community life with real-life tensions and problems. These are shown in the third type of virtual gated communities, the "real" ones, reserved only for their members/residents, where they can share the problems they experience or make complaints. In the end, the paper demonstrates that gated communities are not merely physical spaces but also virtual, which blur the boundaries between physical and virtual, real and imaginary, and public and private. The paper argues that gated communities are produced and reproduced by top-down and bottom-up actors (supply and demand) in both physical and virtual realms by mixing diverse cultures and identities.

Keywords Imaginary and real spaces · Physical and virtual realms · Gated communities · Istanbul

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1 Introduction

We started to live virtually, far before COVID-19 and the emergence of the Metaverse: shopping, businesses, and education have already shifted their activities online. According to Roser et al., internet users increased from just above 420 million in 2000 to over 3.4 billion in 2016. Facebook has 2.38 billion users as of 2019, while Instagram had 1 billion users in 2018 (Roser et al. 2015). This transformation has also changed our lifestyle, vocabulary, and the ways we communicate and make friends. We can see and talk to people far from us. Time also changed its meaning or form: in the virtual world, time is non-sequential; we can click and watch the news whenever we want. The same things apply to sports, movies, and other events. You record and upload them online to be watched later. The online realm has its jargon and rules, where shopping, education, "travel", art performances, movies and TV programmes, and socialisation are held. In this context, the virtual realm has challenged the power of the physical world (material), creating a new dimension, and "reality" has become virtual, evolving our experience of the world. Metaverse is the ultimate step in transforming our lives, combining the physical and virtual to create a real-life experience through online technology.

What about gated communities? In a time of unprecedented changes and challenges strengthened by the COVID-19 pandemic, putting boundaries to feel safe becomes more important than ever. Gated communities provide certain borders/boundaries against various social and physical threats. They are seen as safe spaces for their residents. However, recent works show multiple and complex relationships they establish in the outer realm and blur the boundaries between inside/outside, safe/unsafe, and public/private (Tanulku 2009, 2013). Gated communities also exist in the virtual realm on various platforms such as websites established by developers and residents (Facebook, Instagram).

Few studies focus on this subject, particularly how the borders between public/private, safety/danger, and inside/outside are reproduced in the virtual world. How gated communities act in the virtual world? Can they create a sense of community? Are there barriers to entry on these social media platforms? Who governs or has the right to post/share on these platforms? How is the identity/culture of such exclusive gated communities reproduced in the virtual realm? This paper is among the few efforts to answer some, if not all, of these questions and analyse the difference between imaginary and real gated communities produced and reproduced in the virtual realm. The paper also explores the formation and reproduction of space, culture, and identity in the virtual realm. Ultimately, the paper questions whether there is a genuine reality of gated communities in the virtual realm.

The paper begins with the literature on gated communities across the world and in Turkey and continues with the research questions, methods, and framework. Next, the paper describes the case studies, Istanbul Istanbul and Kasaba, in Istanbul, Turkey's largest city. Next, the paper explains the production and reproduction of virtual gated communities through a visual analysis of their websites and social media platforms (Facebook and Instagram). The paper argues that there are three forms of gated

communities in the virtual realm. First, "imaginary-virtual gated communities" are reproduced in official social media accounts to promote themselves (like advertising). Second, there are "intermediary-virtual gated communities", which are platforms open to all (public). They do not depict an idealised life inside a gated community nor show their reality (problems, conflicts). These intermediaries are established by residents (groups or individuals) instead of developer companies or any other supply-side actor. Last, "real-virtual gated communities" are reproduced on various platforms reserved only for members/residents who can share the problems they experience or complain. Finally, the paper discusses the data and provides questions for future research on virtual gated communities.

2 The Literature Review

Gated communities have received significant attention in public and academic debates. The literature contains various definitions for different contexts, countries, historical backgrounds, and approaches (Roitman 2010). Gated communities comprise a spatial and social entity: spatially, they are spaces closed to the rest of the society (Atkinson and Flint 2004; Blakely and Snyder 1997; Graham and Marvin 2001; Low 2003), in which public space is privatised (Blakely and Snyder 1997; McKenzie 1994). Socially, they comprise people with similar backgrounds regarding income level, and cultural, educational, occupational backgrounds, or age groups (Glasze and Alkhayyal 2002; Atkinson and Flint 2004; Rivadulla-Alvarez 2007). Another essential feature of gated communities is the rules regulating the life behind the gates (Blakely and Snyder 1997; Soja 2000).

Gated communities result from a neoliberal economy that has given rise to urban land rent, a highly competitive housing market divided into niches, and a new and more polarised class structure. They reflect the new middle classes' wish to escape from a deteriorating urban life, which has become a prominent feature of neoliberal globalisation, altering large cities in different parts of the world, leading to class polarisation and concerns about safety and security (Caldeira 2000; Coy and Pohler 2002; Davis 1998; Dinzey-Flores 2013; Glasze and Alkhayyal 2002; Jurgens and Gnad 2002; Low 2003; Graham and Marvin 2001; Rivadulla-Alvarez 2007; Salcedo and Torres 2004). However, safety cannot be limited to a physical one: as discussed in the literature, psychological safety is another wish (Lang and Danielsen 1997; Low 2003; Rivadulla-Alvarez 2007). Besides security, amenities and facilities have also been discussed widely (Atkinson and Flint 2004; Graham and Marvin 2001; Low 2003; Soja 2000; Coy and Pohler 2002). Gated communities also reflect apathy towards the outer realm (Blakely and Snyder 1997; Atkinson and Flint 2004; Soja 2000), which can result in less financial support for public space (Soja 2000) or the worsening quality of urban public areas (Caldeira 2000). Politically they are regarded as "micro-governments" (Lang and Danielsen 1997) or "local pseudo-governments" (Blakely and Snyder 1997) which are run by rules of conduct and provide various facilities and amenities segregating them from the outside world. However, more

recent studies go beyond their gates to understand the relations with the outside, if ever, they produce (Tanulku 2009, 2012; Tanulku et al. 2021).

An essential aspect of housing and real estate is their "symbolic meaning and value" (Haila 2006). The same applies to gated communities produced as "niches" such as security-by-design, prestige living, and lifestyle community living (Webster 2002). Blakely and Snyder also argue that gated communities are created by developers acting as "trend followers" to provide "product differentiation" and "clear identity" (Blakely and Snyder 1997). In developing countries, other factors also increased the number of gated communities and their success. Webster, Glazse, and Frantz argue that socio-economic factors are not the only drivers behind gated communities. There are other motives behind regional differentiation and their popularisation towards non-elite housing markets, such as changing tastes and values because of the impact of Western tastes on local elites. They also add "the emergence of indigenous gated housing markets with their own locally constructed rationales" (Webster et al. 2002). Examples come from Guaynabo, Puerto Rico, where a city municipality attracts developers through a city marketing campaign using American discourses (Suarez Carrasquillo 2011). Also, gated communities in China are regarded as examples of packaging and branding created by Western symbols in the design (Wu 2010). Gated communities in the Middle East reflect conventional forms of socio-spatial fragmentation in the society due to the influence of Islam. Gated communities have become popular housing for local elites and expat communities. One research is about gated communities in Kingdom of Saudi Arabia, which reflect fragmentation across gender and provide expat women with a personal space in Islamic society (Odrowaz-Coates 2015). More recently, gated communities have diversified due to the diversification of clients' profiles, the increasing number of foreign buyers, and the facilitation of mortgage and credit options. Glover explains that gated communities are also built in high-rises (condominium type), described as "vertical gated communities" providing various amenities, including security (Glover 2013).

3 Gated Communities in Turkey

Turkey is not exempt from the global processes outlined above. It has also experienced radical socio-economic and cultural changes shaped by neoliberal economic policies, resulting in the decline of the agricultural and industrial sectors. At the same time, the country experienced the rise of a more polarised labour market leading to the emergence of the new middle classes working in new forms of capital accumulation (finance, insurance, and real estate sectors, a.k.a. FIRE) (Keyder 1999; Isık 1996; Oktem 2005). Since the 2000s, there have been additions to this new class: the creative sector (media, TV, cinema, and arts) and technology (software, etc.).

Gated communities in Turkey are regarded as solutions to problems emerging in large cities, as sites of danger, crime, and cultural and physical degradation due to immigration, lack of urban infrastructure, and green space. They provide safe, clean, private spaces, and an individualised lifestyle far from the city (Alver 2007; Ayata

2002; Isık and Pınarcıoglu 2005; Oncu 1999). Safety is also essential for Istanbul, which is awaiting a strong earthquake shortly, similar to Los Angeles' "ecology of fear" (Davis 1999). Living in houses built according to new building regulations and with high quality can save lives during such a disaster (Danıs 2001; Tanulku 2009, 2013).

Another vital debate around gated communities in Turkey is whether they can provide a sense of community as a result of the homogeneity of residents' profiles. Most gated communities reflect class homogeneity, especially upper-middle or upper classes (Ayata 2002; Bali 2004; Bartu 2002; Danıs 2001; Simsek 2005; Tanulku 2009). However, they also reflect cultural similarity, especially when considered in the light of the new political climate, signalling a more fragmented society across religious and ethnic lines. As shown by the studies of Genis (2007) in Kemer Country, Istanbul and by Ayata (2002) in Koru Sitesi, Ankara, gated communities reflect broader fragmentation of the society across secular against Islamic upper/middle classes. As the economic share of the conservative upper classes grew, there have been gated communities targeting traditional/Islamic upper and middle classes (Cavdar, 2016). Another target profile group is families, particularly those with small children (Alver 2007; Ayata 2002; Danıs 2001). They privatise public spaces, reducing residents' attention to the outside world (Ozkan and Kozaman 2006).

Gated communities in Turkey cannot be separated from the global processes in the real estate sector, considering that a home's symbolic meaning and value are influenced primarily by images circulated in the global housing/real estate market. As Oncu argues, since the 1980s, the upper and middle classes aimed to escape from cities, found to be physically and socially unclean. They wished to withdraw from urban public life for a healthy and clean environment (Oncu 1999). While previously, an apartment flat near the sea (Bosporus in Istanbul as an example) was a symbol of prestige, since the 1980s, a detached house has become the symbol of modern family life and Westernisation in Turkey (Oncu 1999). Oncu explains that the media and advertising companies created the myth of the "ideal home" during this period. This "myth of the ideal home" indicates the impact of Western values on the Turkish housing market. So, gated communities also reflect this process, signalling a new housing market targeting the upper and middle classes, and answering their search for status and a new lifestyle (Bartu 2002; Bali 2004).

4 Research Questions and Methods

Almost all literature analyses gated communities within a material (physical) space-realm. Instead, as earlier studies show (Oncu 1999 regarding advertising and Tanulku (2009), regarding the supply actors, including websites), gated communities are produced and reproduced by printed media and advertising. The paper regards gated communities as more than physical housing developments, extending to the online realm. As a result, the paper aims to answer the following questions:

- The production and reproduction of space, culture, and identity of gated communities in the virtual realm
- The consistency/inconsistency between physical and virtual and imaginary and real gated communities
- The production/reproduction of public and private realms in online gated communities
- Exclusion/inclusion mechanisms in their social media.

The paper focuses on the spatial and cultural production of gated communities in the virtual realm. It is interested in both sides of this process: how developer companies and residents produce/reproduce them. The virtual realm is not different from the physical world. As the author's earlier works demonstrate, gated communities are continuously made and remade by several actors (developers, residents, architects, etc.). However, there is a tension between "imaginary" and "real" gated communities (Tanulku 2009, 2013). The former were the products of the supply actors (developer companies, architects, and advertisers) who promote and sell these developments to potential buyers. The latter, instead, are produced by demand actors (residents, etc.) who experience, live, and change their homes according to their lifestyles (Tanulku 2009, 2013).

The virtual realm is interpreted in different ways. First, it is regarded as creating its reality. Second, as widely debated, it is viewed as changing, distorting, or challenging reality (Turkle 1995; Adams 2015; Thomas 2016). As developed by Baudrillard, the virtual realm is a simulation blurring the boundaries between real and unreal, without any reference to history (Baudrillard 1983). In the current time of post-truth, the virtual realm has become an essential tool to disseminate different standpoints, strengthening the ever-changing meaning of the "truth", something no one agrees on anymore. Also, the virtual realm is criticised for producing or reproducing the "digital divide" or, as argued by DiMaggio and Hargittai, "digital inequalities" (DiMaggio and Hargittai 2001). It can also exclude certain people or communities from social media platforms. These show that the virtual world is surrounded by symbolic and physical barriers such as IDs, payments, or memberships, creating inequalities in accessing information or communicating with the broader world. The paper approaches the virtual realm as producing reality and a domain where individuals meet. The virtual world brings together diverse cultures, opinions, and anyone in conflict with each other. It mixes cultures and creates and recreates new ones. It is a platform for innovation, trade, education, shopping, sports, and art performances. However, it also has a dark side, reflected in various forms of online crime and abuse (such as online bullying or stalking). Also, there is inequality of access to the Internet, and there are exclusionary mechanisms on digital platforms such as (racism, sexism, etc.).

To answer these questions, from March to August 2022, the author did a visual content analysis of the Facebook and Instagram public pages of the two case studies (with the most followers), Istanbul Istanbul and Kasaba, where she also conducted fieldwork for her Ph.D. research study. It took the same case studies because it was easier to write a paper about these developments with the relevant data collected

during that period. Also, the author collected data about their visual representation for her Ph.D. research (printed media and websites established by developers). As a result, the author knew how these housing developments were promoted (printed media, online platforms, and events organised to sell housing units). So, the author chooses their social media, which would facilitate the analysis of the difference/similarity between their representations in the physical and virtual realms. The author also searched social media for other prominent gated communities in Istanbul, such as Kemer Country, Acarkent, and Beykoz Konakları (Facebook and Instagram). The author also searched on Instagram with several hashtags ad posts about Istanbul Istanbul and Kasaba by residents and small-scale businesses working nearby.

Visual content analysis is a popular method of studying mass media (Krippendorff 1989) and social media (Highfield and Leaver 2016; Rogers 2021). Also, researching social media for various purposes has become an essential part of social research, widely cited in the literature (Ahmed 2019; Snelson 2016). The reason for conducting a visual content analysis of Facebook and Instagram is that they are open to everyone and offer rich visual material to analyse. As Teocharis et al. explain, while Twitter is used for getting the news and is much more diverse regarding networks (among strangers), Facebook offers sharing among friends or people close to each other (familiarity) (Teocharis et al. 2021). So, the paper aims to include Facebook to get an idea about virtual gated communities' created by residents who might be familiar with each other (regular users). The paper also has Instagram pages and posts to get an idea about virtual gated communities created by a more diverse range of users, visitors, and residents. In the end, the paper provides more varied data based on visuals posted by various people.

The author is aware of the problems that might arise due to ethical concerns, such as protecting the anonymity of members or residents. No visual on Facebook or Instagram is used in the paper with private or personal information to protect privacy. The author also knows the limits of conducting online visual analysis in a short period. In future research, the data should be more systematic and supported by interviews with residents, admins, and other social media users (online and offline interviews). Also, a textual analysis can help the visual study done in this paper. However, due to the COVID-19 pandemic, qualitative research has become more challenging (Watson and Lupton 2022; Abdul Rahman et al. 2021). Also, conducting fieldwork inside gated communities becomes more complicated. While studying elites and/or upper-classes (Nader 1972) or gated communities (Tanulku 2009) has always been challenging, the pandemic conditions may have worsened or reduced the likelihood of researching gated communities due to residents' potential lack of interest.

5 The Case Studies

In this section, the paper gives information on the case studies about their demographics, the developer company, location, and relations with outside towns/villages.

This information was gathered during the author's Ph.D. research fieldwork and is still relevant for both case studies. The information in the case studies helps the author to compare the physical and virtual gated communities (whether they are consistent with each other regarding space, culture/identity, and "the image" promoted to the broader world).

Istanbul Istanbul and Kasaba are located in Istanbul, the largest city in the country. They can be regarded as the products of urban expansion towards the North of the city, leading to various debates on shrinking environmental sources and cultural heritage. Gated communities are not the only development in these locations. They have been accompanied by shopping malls, private schools, and health institutes, and sports facilities targeting residents. Even though the city centre experiences dramatic transformation as a result of the construction of mixed-use developments and gentrification projects, sites located far from the city centre, such as Gokturk and Omerli, where Istanbul Istanbul and Kasaba were found, still receive interest from developer companies and residents. This interest has increased due to the COVID-19 pandemic since people aim to live in places providing open spaces, gardens, and shared spaces. As explained by Sercan Goller, a luxury housing expert, the pandemic has led to an interest in houses that offer open air and space, either as a garden or balcony (2021). This shows the importance of physical contact with nature and open air in a period of increasing social distancing, lockdowns, and virtual activity. The value of housing units inside gated communities like Kasaba and Istanbul Istanbul is expected to increase since they are far from the city centre and provide open space and gardens for their residents. According to a recent piece published in Hurriyet daily newspaper, the popularity of Omerli and Gokturk-Kemerburgaz is expected to increase in 2022 (Genc 2021) (Table 1).

6 The Visual Analysis of Social Media of Istanbul Istanbul and Kasaba

Gated communities are produced and reproduced in the virtual world. Many images, texts, and videos are circulated to promote and show everyday life inside them. There are differences between social media platforms regarding their likelihood of reflecting reality. The virtual realm produces three types of gated communities. First, there are "imaginary-virtual gated communities" through websites, online adverts, videos, and other online tools to promote gated community life to the broader world. Second, there are "intermediary-virtual gated communities", which provide an accurate picture of gated community life but are still not the whole picture. The third type is "real-virtual gated communities", consisting of social media reserved only for residents or members. These are closed to outsiders, where residents can share their opinions, criticise anything about their communities, neighbours, etc.

Table 1 Istanbul Istanbul and Kasaba

	Istanbul Istanbul	Kasaba
Location	Gokturk (European side)	Omerli (Asian side)
Construction date/company	2001, Koray Construction & Yapı Kredi Bank Second gated community in Gokturk	2000, Koray Construction & Is Bankası (the first phase) The first gated community of Omerli It has additional phases built by different developers, and its 5th phase is under construction
Residents' profile	Middle-class, young couples with small children secular, well-educated people	Upper middle or upper class, secular, well-educated people A more diverse profile, retired and single people
Image	Sense of community, neighbourliness, and familiarity	Exclusivity Individuality Kasaba means "town"
Housing type	Terraced houses	Villas (mostly)
Facilities	Child care, sports facilities, restaurant, cinema, and bars, all of which are gathered in a social club building	A private primary school, a social club building, restaurants, swimming pools, fitness and beauty centres, a supermarket, horse riding facilities, and tennis courts for its residents

6.1 Imaginary-Virtual Gated Communities: Formal Websites to Sell Gated Communities

First, there are "imaginary-virtual gated communities", which are the products of the supply-side actors (developers, etc.), where their activities and facilities are promoted to broader society. These websites show only the best things and offer a total abstraction of gated community life. Developers aim to sell these developments and strengthen their position in the housing/real estate market.

These platforms show an abstract, generic space exempted from individuality, conflict, or problems. Instead, developers or advertisers show us the stuff they want, such as empty homes with no leaks, lovely gardens with no insects, and happy people with no conflict. These websites usually do not show photographs of homes or people. Instead, they provide sketches or model homes instead of actual pictures or images of fictional people instead of real people. These spaces would be filled with real individuals once they buy them, i.e. the individuality of these spaces would emerge with people living inside them (transformation of space into place). Both Istanbul Istanbul and Kasaba's websites do not use celebrities or famous people to address a broader audience. Instead, they rely on the individuality of their potential clients, who would "make" or "create" their homes and gardens once they live there (Figs. 1 and 2).

Fig. 1 Photo of Istanbul Istanbul, from the website of Koray Construction https://www.koray.com/istanbul-istanbul, the project developer. A non-historical, non-temporal, and impersonal picture of the community to address potential buyers

Fig. 2 Photo of Kasaba, from the website https://www.koray.com/kasaba

6.2 Intermediary-Virtual Gated Communities: Social Media Open to Anyone

Gated communities' Facebook and Instagram pages differ from developer companies' websites. Residents posted their homes, gardens, flowers, and pets (everyday

life). However, they still do not demonstrate everything about gated community life. In this context, Facebook and Instagram pages can be regarded as an intermediary between imaginary and real-virtual gated communities: while they demonstrate the reality of gated community life, they are far from showing all (conflicts, tensions, problems, etc.).

6.2.1 Istanbul Istanbul

(A) **Instagram**

Istanbul Istanbul's Instagram page is https://www.instagram.com/istanbul.istanbul.evleri/ (with 28 posts and 70 followers as of 10 January 2023). The first post was about the Halloween celebrations on November 5, 2019. The last post is on 30 August 2022 to commemorate Victory Day. It is unknown whether this page is a formal account, but it is open to everyone. It is full of posts and videos about past celebrations of national holidays (August 30, Victory Day/October 29, Republic Day) and the commemoration of Ataturk's death. The videos show how residents celebrate the national holidays with fireworks. Also, there are some pictures of Halloween from 2019. The Instagram page of Istanbul Istanbul shows how the gated community is reproduced in the virtual world, consistent with the identity of Istanbul Istanbul (Fig. 3).

Istanbul Istanbul creates its identity in the physical realm around the concept of "BizBize" (among us, between us), used in its brochures, advertisements, and website. This concept is realised through facilities such as child care, sports facilities, restaurants, cinemas, and bars, all gathered in a social club building. Its residential units consist of terraced houses which face each other, creating a sense of community, neighbourliness, and familiarity. Istanbul Istanbul targets a middle or upper-middle-class, secular, and modern resident profile. Most of them are young couples with small children. These people have high education levels and use Western values and symbols. Coherent with this identity, Istanbul Istanbul's Instagram page reproduces a secular, middle-class, and modern family life. The nationalist and patriotic tone is strengthened with the pictures of Turkish flags, Ataturk, and residents celebrating various national holidays. The commemoration of several national holidays mixes with the Halloween celebration.

The "community" feature of Istanbul Istanbul is reflected in photographs which show groups of people doing something together, not individually. The identity of a gated community can also be demonstrated by looking at what it excludes, i.e. the people, images, or anything missing in their social media. Islam is the first missing theme. While Halloween is seen as part of Istanbul Istanbul's culture and identity, any reference to Islam is missing from its social media accounts (holy nights or religious festivals).

Fig. 3 Instagram page of Istanbul Istanbul, almost all reserved for national holiday celebrations, with a few for Halloween

Also, Instagram is full of posts about Istanbul Istanbul, searchable with hashtags "Istanbul Istanbul evleri". Most of them are businesses working for gated communities in Gokturk, such as hairdressers, cafes, bakeries, home decoration, maintenance, fitness, wellbeing and health, real estate, and home cleaning.

(B) **Facebook**

Istanbul Istanbul's Facebook page (Istanbul Istanbul Evleri, which seems active until November 25, 2018, and the first post-dated November 29, 2011, page created on September 15, 2011, with 403 likes, 424 followers as of 10 January 2023, https://www.facebook.com/profile.php?id=100080644546376) demonstrates the life inside the community. It explains that Istanbul Istanbul is a project that won the MIPIM 2002 award, showing how it is a successful housing project regarding its infrastructure, landscape planning, and housing architecture. The page is open to residents and tenants in Istanbul Istanbul to share freely. The page also provides the name of the moderator. There are pictures of housing units, gardens, and the social club building. The Facebook page also depicts the everyday life inside the community with images from the New Year celebrations, or "Welcome to summer" parties celebrated with the music bands, Halloween celebrations, and Karaoke nights. The Facebook page depicts people (parties, festivals) in the open air, revealing their identities. There was also an event when they celebrated the members of staff working for a decade in the community. It also celebrated International Women's Day in 2014. There are

also posts related to the management's activities, such as the lights turned in LED inside the social club building in 2014 or the board meeting announcement in 2013. Its Facebook page does not reference politics or problems debated at the national or local level. This apolitical stance strengthened the imaginary aspect of Istanbul Istanbul, exempted from any problem, conflict, or even politics. Istanbul Istanbul's social media demonstrate large group activities (parties, birthdays, or New Year). They were mainly posts related to communal activities, consistent with its identity promoted around "BizBize" (among us, between us). Istanbul Istanbul was about the relationship between place and community, all coherent with their images created in the physical realm. It is a social and friendly gated community, both on and offline (Fig. 4).

The celebration of the New Year in Turkey is a vital fault line between secular/modern and conservative/Islamists. While Islamists regard the New Year celebration as an imitation of Christmas coming from Western and/or Christian countries, secular/modern people of Turkey celebrate New Year with images and symbols of Christmas, as seen in the above figures.

Its Instagram and Facebook pages differ: Instagram shows more nationalistic and generic images, while Facebook is more personal. This might be related to the community's priorities. While the Facebook page is older, Instagram is quite a

Fig. 4 The New Year: Facebook page of Istanbul Istanbul, an image of a Christmas tree, at the social club building (December 31, 2015)

new one. Residents and the moderator(s) might post on the Facebook page with more enthusiasm who want to demonstrate their communities' friendly character and other positive features. Instead, Instagram posts look more formal related to the fact that the community might not prioritise posting on social media (there might be different forms of posting/communicating online, closed to the outsiders). Also, COVID-19 might be another reason for the lack of attention to social media accounts in the last few years. Also, Instagram might be a formal account (managed or moderated by the developer), while Facebook might be a more informal one (managed or moderated by residents).

6.2.2 Kasaba

(A) **Instagram**

Kasaba does not have an individual Instagram account. Instead, Instagram has many hashtags about Kasaba. The author searched Instagram about Kasaba with the most number of posts. #Kasabasitesi, #Kasabaevleri,#ömerlikasabaevleri. The posts come from residents, small-scale businesses, or people working/living/visiting. These posts show happy moments in Kasaba or how they do business there (home decoration, landscaping, pet shops, beauty parlours, hairdressers, etc.). Also, #Kasabayılbaşı2022 is another hashtag demonstrating a meeting of local businesses or people selling arts&crafts and food. Kasaba was shown as a beautiful place in all these posts, with lots of greenery and large houses with gardens.

(B) **Facebook**

Kasaba's unofficial Facebook page (Ömerli Kasaba Evleri, with 235 likes and 235 followers, as of 10 January 2023 https://www.facebook.com/pages/Ömerli-Kasaba-Evleri/318697008208058), with the last post is dated 5 December 2022, and created on May 27, 2012, demonstrates diverse posts by residents and people working in the community, such as gardeners or maintenance. There are also posts about health services at home or other small-scale businesses serving in the area. Horse riding activities at the horse riding club in the community and practices at the gym such as kickbox or yoga were also pictured or filmed. Some residents also posted their homes or pets, meetings with friends in the garden, children studying, or birthday parties. Kasaba's Facebook page depicts posts about individuals or small groups. Some posts are about community activities, such as home gatherings, concerts, birthdays, and welcome to the summer parties (Fig. 5).

In the physical realm, Kasaba is detached from the outside world, achieved through the forest that surrounds the community. It was also built far from the nearest village, Omerli, and other gated communities. Its isolation and privacy were used in advertisements and brochures as its main features, providing it with distinction from other gated communities and strengthening its physical and symbolic distance from urban problems. In this respect, Kasaba is a more detached gated community than Istanbul

Fig. 5 A picture of a dinner with glasses of wine, dated December 31 2015, from Kasaba's Facebook page. Alcohol is also a symbol of "keyif" (joy of life) and Turkey's modern, secular and Western way of life. This symbol is a critical fault line in public spaces between modern/conservative, Islamic/secular, and Western/anti-Western. The secular middle and upper classes promote themselves on Facebook and Instagram as they have fun with other fellows and as modern and liberal people consume alcohol

Istanbul. In addition to its isolation, most housing units are detached single-family houses.

Consistent with its physical reality, Kasaba is represented on Facebook through the place and the individual. Kasaba was an essential actor in these pictures with its gardens, nature, animals (horses), trees, and weather (mainly snow and fog), which demonstrate that it is not a collective place but a more exclusive one built around the concept of individuality ("Kasaba", means "town" in English). Its Facebook page has pictures of Kasaba under snow or during the winter from different years. Residents described Kasaba under snow with words such as "we are frozen now", "no way out", "sink in the snow", and "waking up to the snow" from the winter of 2017. All refer to being isolated and segregated (in a positive aspect).

This physical isolation depicted on the Facebook page (homes, cars, or streets covered with snow) completes the psychological comfort and isolation of their residents, with the feeling of living in a place outside of Istanbul and its problems. Kasaba was the largest, the most expensive, and the first gated community of Omerli, a "pioneer gated community" in the region. "Kasaba" means town, but it is a generic concept which can refer to any town (not Istanbul). Kasaba, instead of a particular place, refers to a generic place (town) or a spot smaller than the city. Life in a town does not refer to a particular identity, which can be seen in other gated communities like Istanbul Istanbul, Kemer Country, or Beykoz Konakları, all referring to the city of Istanbul and implicitly old wealth (high cultural capital).

Kasaba's Facebook page is also full of posts and pictures of the working class (primarily men) while working, taking a rest, or posting in front of a view, such as those working in maintenance, or gardening and those who worked in various stages of construction. The flexibility and openness shown to the working class might be related to the lack of attention Kasaba's residents give to the Facebook page. Kasaba and its residents might also allow workers to post on the Facebook page to demonstrate themselves as people caring towards the workers and other people who work inside their communities.

Unlike Istanbul Istanbul, the Facebook page of Kasaba has posts about everyday problems or politics. One post is about martyrs due to armed conflict in South-East Turkey, and the other is about people who cannot retire due to the age limit. Its Facebook page depicts more varied images from everyday life inside the community. It shows a suburban life around family, home, children, and pets as essential to their identity. Kasaba's Facebook page also has many posts about people individually posting in different locations in that community (a place with a view). It also differs from not using Western or global images or symbols like Halloween. While Istanbul Istanbul's Facebook page is around communal events, Kasaba's posts were much more varied regarding the content: some were about emotions and feelings (about love) or personal/informal correspondence with coworkers or other residents. It has some references to Islam via posts by workers who celebrate some religious festivals or holy nights. Kasaba was also popular among visitors who posted different parts of Kasaba and their selfies (with a view).

The difference between Kasaba and Istanbul Istanbul regarding the content of posts (such as festivals like Halloween or the workers/gardeners posting) might be related to two reasons:

1. As demonstrated by the demographic profile of residents, Kasaba has a higher average age than Istanbul Istanbul, while the number of small children was also lower. Also, as the author's Ph.D. thesis demonstrated, Kasaba was preferred as a non-permanent residence. This might be associated with the lack of attention of residents (older, retired, or not full-time residents) or moderators.
2. Kasaba has several additional phases constructed by different construction companies, which might change residents' profiles to a more conservative or older generation or people moving to Istanbul from Anatolia with a different cultural capital, which can explain their tolerance towards Islamic symbols and celebrations.

Another aspect of social media in both cases is the reproduction of gender roles: well-prepared tables with female residents and their guests are essential images in their social media, representing the importance of a good housewife and the food culture in Turkey. However, social media of both cases reflect absentee masculinity: besides a couple of photos with grandchildren, next to a mangal (small, traditional barbecue) to cook the meat, or in the garden, male residents were absent from the social media of both cases. As Kasaba's Facebook page shows, working-class masculinity is visible who is actively involved in all work in Kasaba (fixing, maintaining, cleaning, guarding, etc.). They do not only picture their activities but actively

write comments on a diverse range of topics. This absentee masculinity might be related to the fact that male residents in both case studies might be very busy or do not care about posting on social media. This might be because social media is used mainly by women than men, and women actively show themselves, their activities, friends, children, and pets. Also, the social media pages of both cases do not depict anything related to DIY culture by residents. Instead, all these activities are done by professionals (members of staff, or technicians to fix their homes, etc.). Their social media pages do not reflect anything contrasting a secular middle-class lifestyle. All images were consistent with the physical reality of both cases (secular, middle and upper-class suburban, heterosexual family life) and verified the general views on gated communities in the literature.

6.3 Real-Virtual Gated Communities: Social Media for "Members Only"

Third, "real-virtual gated communities" reflect the reality of gated community life in the virtual realm. Real-virtual gated communities cannot be reproduced via formal social media accounts, demonstrating the happy moments in gated communities. In this context, the virtual realm acts as advertising or promoting the good and happy things about the gated community life. Instead, real-virtual gated communities are exclusive to their residents/members. No one but residents/members or those qualified to access these platforms can see the content and can share the problems between neighbours, local people, governance (infrastructure, tax, services), or other urban actors. The barriers of virtual gated communities conceal these platforms. They are accessible to those with proof of being a resident/worker/tenant. Groups reproduce real-virtual gated communities on various social media (email, Facebook, Instagram, and WhatsApp).

Real-virtual gated communities' exclusive platforms are open to debates about problems in the physical realm. Residents enter these platforms to criticise their homes or issues with their neighbours. These problems do not emerge from the virtual interactions; instead, these problems belong to the physical reality of gated communities (this does not mean that virtual platforms do not bring issues emerging from virtual interaction such as online abuse among members or exclusion towards certain people in virtual platforms). Problems might also arise regarding "imaginary" physical gated communities. This can be the case when developers cannot meet the residents' expectations. Developers create imaginary gated communities so people can expect too much from their homes. So, real-virtual gated communities exclusive to members are mainly reserved for the problems emerging in the physical world. The virtual realm provides a door to the real world with the conflicts and issues between residents and locals. Residents can reveal their identities and come into conflict with others. The ideal and utopian community aspect, belonging, and positive atmosphere created in imaginary gated communities (either physical or virtual) cease to exist.

Instead, exclusive virtual platforms demonstrate problems among neighbours, inside housing units, with the local governance, financial issues, and concerns coming from the outside (the number and the profile of visitors, common facilities, cleanliness, maintenance, etc.).

One way is to establish Facebook groups (by residents) close to the outsiders. Residents or tenants become members of such groups via specific barriers (ID or proof of residence/homeownership). The author did not have any information on such exclusive accounts of both case studies. However, during the fieldwork conducted for her Ph.D. research study, several residents in Istanbul Istanbul and some locals from Gokturk mentioned email groups (inside the gated community or among managements between gated communities) to exchange ideas.

7 Discussion

By analysing the Facebook and Instagram pages of Istanbul Istanbul and Kasaba, this paper aims a few things: first, to assess how the space, culture, and identity of gated communities are reproduced in the virtual realm. Second, to analyse the exclusion and inclusion mechanisms in the virtual realm and how novel forms of the public(s) and private(s) realms are created in virtual gated communities. Third, analyse the consistency between physical (material) and virtual, imaginary, and real gated communities. Last, the paper also questions the meaning of "reality" in a world of blurring boundaries between physical and virtual.

The paper shows three forms of gated communities in the virtual realm: first, "imaginary-virtual gated communities", reproduced by developer companies on social media to promote themselves, which are far from reflecting and demonstrating these communities' problems. Instead, they represent gated communities as green, comfortable sites inhabited by happy residents, with many social activities and a community spirit. Second, "intermediaries" are virtual gated communities providing some reality of everyday life inside gated communities. Third, "real-virtual gated communities" are reproduced on various platforms reserved only for their members/residents/tenants to share the problems they experience or make complaints.

However, the boundaries between imaginary and real gated communities blur in some moments: people do not post their happy moments when working inside these communities (gardeners or workers). While social media created by the supply side demonstrates the imaginary aspects of gated communities, other social media platforms provide a more accurate picture of the gated community life. However, public pages do not still give a total view of everyday life. Posts are selected. Only certain people can post. Also, there is no sign of problems regarding homes or conflicts between people. Instead, more reality can be seen on social media platforms closed to outsiders.

There are different actors producing these platforms (supply or demand), but there are some common features: First, both sides (supply and demand) intend to promote

themselves to the broader world. Developer companies aim to target potential buyers through websites and other online platforms to promote their housing developments. Instead, residents promote themselves not for profit. They promote themselves to the broader online world as "good people/citizens" (seen in nationalistic texts and images) who are responsible for the society and country they live in. This also proves they are not snob people, excluding the lower classes (or the social other). Instead, as Kasaba's Facebook page shows, they promote themselves as friendly people who give a platform to the working classes to raise their voices.

Second, the virtual realm is a way to reproduce the identity and culture via particular symbols to address potential buyers or members of that gated community. Social media of Istanbul Istanbul and Kasaba demonstrate how their identity and culture are reflected in the virtual realm. They show that the social media of two gated communities uses nationalistic and patriotic images and texts to address their residents, potential residents, and the broader society. Istanbul Istanbul's Facebook and Instagram pages reflect a secular, middle, or upper-middle-class family life. They demonstrate the friendly character of the community. Also, Kasaba's social media are consistent with its identity built around a secular, modern middle, or upper-class community open to Western ideals and values. Their identity was supported by Western/global symbols (New Year, alcohol, Halloween), which excluded anything related to Islam (particularly in Istanbul Istanbul).

Third, their social media shows what or who is included and excluded. As the literature shows, there are gated communities according to different tastes, age groups, and lifestyles. They reflect broader socio-spatial fragmentation in the society, such as secular vs conservative. Their online platforms also reflect their culture and identity, regarding symbols used, who or what is excluded or included, who can post, activities and amenities. These platforms, even if public or open to everyone, implicitly exclude some communities/cultures via the images they use. Their social media can also be exclusionary regarding liking, disliking a post, writing a comment, etc. However, their social media look open to all. The boundaries between private and public, open/closed, inside/outside, are concealed in the virtual realm. This is the case when there are no barriers to entry to the social media accounts of both case studies. Everyone can post without being blocked. Everything seems free, and access is easy.

Fourth, the privacy of family, individual, and home is removed in the virtual realm. People are not afraid of revealing themselves, their names, or their families to the rest of the online world (Public Facebook and Instagram pages). This might be related to the psychological comfort of residents or visitors since they know they are in a gated community with high security. The reality of the virtual is more relaxed if compared to that of the physical. This relative comfort regarding social media of Istanbul Istanbul and Kasaba opposes the well-known debates on gated communities, rationalised as a result of a search for safety. Residents might not care about who or what is posted on social media due to the psychological comfort. Their gates seem more relaxed in the virtual world: whoever wanted to post on their social media. This also provides a sense of inclusivity for the outsiders (visitors, working class). So there might be differences between things we see (virtual) and things we live and

experience (physical world). However, there are barriers in the third type of virtual gated communities, which are exclusive to their members/residents. No outsider can see a picture or an entry on these platforms. For this, membership in the platform is a must.

Related to inclusion and exclusion, another important aspect of the social media of gated communities is the safety barriers of gated communities or their absence. While gated communities have various security mechanisms in the physical world (listed among the most important feature in the websites by developer companies), there is no reference to any form of gates or security (in the physical realm) on their social media platforms. Instead, Istanbul Istanbul and Kasaba are represented as homes or places open to everyone. People come together at events such as birthday parties, welcome to summer parties, swimming pools, home gatherings, sales, and horse riding activities openly and publicly. However, this freedom of access is not valid for the physical realm. Both cases have strict rules and are protected with high-security mechanisms, surrounded by walls, and have gates as entry points in the physical world.

Fifth, the paper also shows a distinction between physical and virtual gated communities, i.e. the reality of the physical and that of the virtual. The paper argues that reality is produced in different dimensions (realms). The reality of the physical world differs from that of the virtual one. This does not mean that both forms of reality are the fake version of each other. Instead, this means that different realms produce different forms of realities, rules, and sociality. The paper argues that physical reality is the reality produced, reproduced, lived, and challenged at the material level (Earthly). Instead, virtual reality is the reality produced, reproduced, lived, and challenged at the virtual level (virtually). The paper demonstrates that while gated communities have a distinct reality in the virtual realm (different from the physical one), this reality mixes with the physical one. This is when we see residents discuss their problems on social media in the physical realm (like leaks or issues in homes, between neighbours, etc.). So, the online realm is a tool to discuss and solve the problems in the physical world, not only for creating new forms of relationships, etc., peculiar to the online world. As a result, things become mixed, creating a fusion between physical and virtual realms, where different and conflicting things, people, and ideas come together.

Theoretically and more broadly, these three forms of virtual gated communities show the reproduction of space, culture, and identity in the online realm. The images on their social media demonstrate how their culture, identity, and space are made and remade by various actors. Culturally, a secular, educated, middle-and upper-middle-class family life is being transmitted from Facebook and Instagram Pages of Istanbul Istanbul and Kasaba, which confirm the literature on gated communities. Their social media verifies their culture/identity in the physical realm they aim to create. These three forms of virtual gated communities reflect how various actors reproduce space in the virtual realm, showing a transition from imaginary to real gated communities (Tanulku 2009, 2013). This transition also reveals a conflict between top-down and bottom-up space-making, a subject becoming more popular in human geography and urban planning, demonstrating opposition against neoliberal urbanism created

by experts (architects, developers, state, etc.) from bottom-up actors leading to the emergence of alternative spaces and DIY urbanism (Deslandes 2013; Tonkiss 2013).

However, challenging the top-down urban process does not always mean being against neoliberalism. Instead, bottom-up means something relevant for the people (Residents or users of these developments). In the context of gated communities, as earlier studies showed, residents challenged and changed their homes, and the community found unsuitable their way of life (Tanulku 2009). Related to the production of space, a distinction should be made between the top-down space-making (imaginary) and the bottom-up one (real). Top-down spaces are interpreted as ready-made ones far from the reality that residents/users live and experience. In this context, also originality and identity of the place are discussed. Top-down spaces can be regarded as "sim-city" (Soja 2000) or "no-place" (Auge 1995) and be read within the context of "placelessness" (Relph 1976). "Sim-city" refers to Los Angeles, a postmodern and post-industrial city, and generally cities created through online technology, which is reproduced by simulating old places and restructured in electronic cyberspace. Soja describes a "sim-city" as the process of recreating pre-industrial cities in post-industrial Europe through new urbanism or hyper-simulation (Soja 2000). Similarly, "no-place" (Auge 1995) or "placelessness" (Relph 1976) refers to soulless places that originate all around the world without a reference to history or identity. Airports, hotels, or shopping malls can be regarded as such places. "Placelessness" was a term used by Relph to describe the uniformity of places without any variety and localism. He argues that inauthentic and kitsch sites are made for mass consumption (Relph 1976).

In this context, a suburban way of life is regarded as such a place because of similar housing stock and a middle-class nuclear family based on conventional forms of gender identities, norms, and practices. In the end, we have housing developments which look like each other regardless of their historical, geographical, and cultural contexts. However, as we see in various images of gated communities in the virtual realm, there is a transition from imaginary ("sim-city", "no-place") into real ones where we can see residents with their identities, names, and conflicts in the physical world. So, gated communities, both online and offline, are neither top-down spaces without an identity nor bottom-up spaces created by residents. Instead, they are a fusion between top-down and bottom-up space-making processes where various online and offline actors come together to produce genuine spaces on their own. This authentic place might be far from the old, historic neighbourhoods of a city, which have high economic, cultural, and symbolic values. Still, gated communities are genuine in that they reflect their residents' identities.

In the end, the paper shows that the virtual realm has become an instrument to make/remake the space we live in by circulating images of homes, gardens, decoration, architecture, maintenance, landscape, and plants—the posts by residents, local businesses, and experts all remake gated communities. However, as the Facebook and Instagram pages demonstrate, there is also a reality in/of the virtual realm, different from the reality in/of the physical (lack of gates, barriers, inclusivity, etc.). Also, there are specific rules in the virtual realm (what can be posted or who can post, the

text used in the social media). Also, in exclusive social media, people conflict with others who otherwise cannot find the opportunity to do so in the physical world.

8 Conclusion(s)

This paper aims to analyse online gated communities to understand the production and reproduction of space, culture, and identity. The paper demonstrates the difference between physical and virtual gated communities. It also addresses the boundaries between public and private, inside and outside, open and close, safe and unsafe in the virtual realm. The paper argues that gated communities are produced and reproduced as imaginary and real in the virtual realm as in the physical realm.

This is a preliminary effort into the online world of gated communities. Gated communities are also expected to adapt to the new reality of the virtual realm, creating a more a-spatial and a-temporal world, particularly facing the challenges of Metaverse and global lockdowns brought by pandemic(s) like COVID-19. Internet access is an amenity among many others provided by gated communities, something belonging to the well-off. The virtual realm also brings many conflicts and tensions.

The findings are only a prologue to the ever-expanding virtual realm and its challenges. More systematic data collected online and offline can be the next step to understanding some questions raised by the paper. How imaginary and real gated communities interact in the physical and virtual world can be a step forward in future research. The interaction between developer companies and residents regarding the content of these social media platforms, the conflicts over representations among the residents, and who control and manage these accounts are other subjects to be investigated in future research. Also, real-virtual gated communities could be explored in more depth to understand better the problems and conflicts emerging in such housing developments (in the real world). More in-depth studies could also focus on particular inclusion/exclusion mechanisms. How do gated communities accept others, such as workers and visitors (in physical and virtual realms)? Also, real-virtual gated communities and their community aspect, i.e. whether their exclusivity provides some sense of community among the residents, the boundaries between public and private and how they can be preserved in the online world (privacy of individuals, etc.) can be the subject of future research.

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Dr. Basak Tanulku is an Urban Sociologist who specialised in gated communities following her Ph.D. studies at Lancaster University in the UK While gated communities have been regarded as exclusionary and segregating housing forms, Tanulku has looked at the relationalities inside and outside them. As a result, Tanulku has interpreted gated communities as housing forms using various forms of boundaries (physical and symbolic/abstract) that are in continuous flux (relational binary). Tanulku has interpreted gated communities as relational, and diverse housing forms. Tanulku also works on various subjects, such as socio-spatial fragmentation, urban transformation and vacancy, urban gardens, alternative spaces and initiatives, urban protests, and conflicts emerging in public spaces and commons.

The Spatial Dimensions of Exclusion in the Digital Polis

The Uniformity of Living Space and the Anxiety of the Middle Class

Yang-sook Lee

Abstract This article discusses South Korean novelist Park Wan-seo's early works on houses and apartments in the 1970s, focusing on the flatness and uniformity of space created by apartments behind the anxiety and pain of the Korean middle class. Park's early short stories contain a cold accusation of the situation at the time where the 'middle class', who collectively resided in a new type of housing called 'apartment', could not grow as citizens while revealing a concern about the future that cannot be clearly captured. This paper reflects on the present and future of the Korean middle class beyond the shame of the survivalism in the aftermath of the Korean Civil War and much-discussed philistinism of the middle class.

Protagonists of Park Wan-seo's early short stories in the 1970s discover the hypocrisy and contradiction that exist behind the 'happy family' of their neighbours and themselves and fear their neighbours' gaze. They are contradictory beings who feel extreme anxiety about their lives in apartments, along with relief at being the few among many people who have been successful in material achievements like orderly apartment spaces. The apartment city in Park's novels is described as a place sensitive to differences, and it does whatever is needed to eliminate such differences. This is also indicative of the emotional structure of apartment residents, which corresponds to the homogeneous and flat structure of apartment space. The protagonists, who wish to procure everything that others have in their own homes, are driven into a deep anxiety finding themselves in desperate situations, where they recognise the problem but cannot stop pursuing the same goals as others. The female characters in Park's novels attempt to search for conditions to escape from this anxiety, which is represented as an attempt to escape the family.

The 'imagination of defamilisation' of Park Wan-seo's protagonists goes further than merely breaking away from the patriarchal family framework. Their imagination is based on the awareness that the uniformity and hierarchical 'purity' embodied in the 'ville' of the apartments confine the limitless potential of an individual to the

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economic achievements of one family. Therefore, their dream of 'being away from the family' is thinking about how to break out of a flat and uniform space and simultaneously imagining the transition from an isolated family to a more extended community. The femininity described in Park Wan-seo's novels shows that ordinary Korean women in the 1970s do not just stand as a substitute for the patriarchal system. Anxiety captured in the early short stories can be understood as a new affect in which the protagonists, driven by the emotions of envy, jealousy, helplessness, and despair, deny it to find an independent form of life and prepare to rise above it.

Keywords Park Wan-seo · Apartment novel · 1970s Novel · Korean middle class · Structure of emotion · Apartment city

1 Introduction

This study reads the early novels of Korean writer Park Wan-seo (1931–2011) focusing on the formation of the inner life of apartment residents in South Korea in the 1970s in order to understand their affect of anxiety connected to and produced by the uniform space of the architecture. Apartments became popular as housing in Korean society in the early 1970s, and writers regarded them as meaningful social spaces and delineated how these urban spaces, which were supposed to be public assets, were instead occupied by members of certain socioeconomic classes (Song 2018, 515). For instance, Critic Kim Hyun shared his personal experience of moving from an individual residence to an apartment, examining how mass-produced apartments become 'objects' rather than 'houses' under the premise of economic rationality, and influence people's minds. He realised that the flatness and uniformity of an apartment space determine people's ways of thinking. Kim noted that apartment residents have the 'disease of wanting to move to a larger apartment', inferring that the apartment thereby became an 'exhibition space'. This captures the logic of the space behind the snobbery and false consciousness of the middle class. Further, apartments were considered 'the most suitable place for public manipulation', which resulted from residents sharing the same living space, although they had different jobs or were of different ages. For the middle class, apartments have become a 'thinking style' and an 'exhibition space', not a living space. Consequently, they carried on a shallow life (Kim 1993, 361–363). Apartments, which the middle class strived to obtain, guaranteed economic stability but not psychological stability. The 'apartment disease', where one's value is evaluated by their possessions, made 'the shallow life' widespread which pays attention to appearances rather than the inner life of an individual.

Published almost thirty years ago, Kim Hyun's argument is still frequently mentioned because of the ongoing contemporary relevance of his insight. The phenomenon of rendering apartments as exhibition spaces and investments has not diminished but has been accelerated. Why is this problem, which has been highlighted since the initial popularisation of apartments, prevalent? This is also the

reason we pay attention to Park Bae-kyun's 'urban ideology' that explains the relationship between urbanisation and apartments in Korea. Citing 'high-rise apartment complexes' and 'new town construction' as characteristics of Korean urbanisation since the 1970s, Park Bae-kyun argued that 'after the development of Gangnam', there was a desire and pursuit for Gangnam-style residential and public life. The characteristic of Korean urbanisation is the result of efforts to copy the Gangnam-style residential environment spatially (Park and Hwang 2017, 6).[1] According to Park and Hwang, the 'Gangnamisation' of Korean cities comprises two tendencies: firstly, 'Gangnam Creation', which means both physical construction of the space and creation of the discourse of Gangnam; and then 'Gangnam Replication' which duplicates similar places based on various systems and urban ideologies created during the Gangnam construction process. Note that Gangnam, considered an ideal model in the process of 'Gangnam replication', is not a carbon copy of the place itself but something imagined, desired, and reproduced by people outside the area. Therefore, 'Gangnamisation' have constructed the Korean middle class as speculative entities who relied on rising real estate prices and also significantly contributed to the speculation-oriented paradigm of Korean cities (Park and Hwang 2017, 8–9).

It is natural for housing prices to rise as cities expand. However, the preference of apartments, which has been particularly noticeable in Korea since the 1970s, can be regarded as the result of speculation-oriented 'Gangnam Replication' urban development. Park Wan-seo's early novels from the 1970s are significant social records that demonstrate the origin of this phenomenon in excruciating detail. In her essay, Park observed that there was nothing to be ashamed about poverty at the time because everyone was poor. Nevertheless, she argued that there was also an atmosphere of shame regarding the poverty at the time because the slogan of the age 'Let's prosper', which was widely promulgated to revive the economy, had in practice become 'Let's prosper no matter what' (Park Wan-seo 1977). This sense of life is pronounced in the living space of apartments. Furthermore, in the literary works of the 1970s, apartments were portrayed as dreams of contemporaries and simultaneously spaces of disillusionment about themselves being reduced to speculators.

Against this backdrop of the interconnection between spaces and minds, this article examines Park Wan-seo's diagnosis of the phenomenon, focusing on her novels on homes and apartments in the 1970s: 'A Certain Outing' (1971), 'The Cries of a Worm' (1973), 'Weekend Farm' (1973), 'Similar Rooms' (1974), 'Teaching Shame' (1974), 'The House of Foam' (1976), 'Women' (1977), and 'Children of Paradise' (1978).[2] The main characters of these works show that in the 1970s everyone desired to rise to the status of the middle or upper classes, and a new urban

[1] 'Gangnam' is the most expensive area of Seoul, the capital of South Korea. Well equipped with both social and cultural infrastructure, this is the most coveted place by Koreans. In this sense, 'Gangnam' symbolises a specific urban lifestyle and desires. Park, Bae-kyun, and Hwang Jin-tae, 2017. Making Gangnam, Following Gangnam: The Birth of Speculation-oriented Urban Residents and Speculative Urban Development. Seoul: Dongnyeok, p. 6.

[2] In this article, Short Story Collection of Park Wan-seo (2013a) was used as a text. The first volume of Short Story Collection of Park Wan-seo includes 'End of year', 'A Certain Outing', 'The Cries of a Worm', 'Weekend Farm', 'Similar Rooms', and 'Teaching Shame'.

sensibility was beginning to form where people weighed the class they belonged to and were strongly conscious of other people's evaluation.

Previous studies on Park Wan-seo's early novels can be roughly divided into three categories. They tend to discuss the meaning of the Korean War, the formation of the middle class and familialism, and philistinism of the modern subjectivity. Most studies have noted the trauma of the Korean War and the logic of survival as the dominant elements among these three themes. Therefore, So Young-hyun generalises philistinism in Korean society as an attribute of modernity as 'societal emotions changed in response to the change in the existence of community with the advent of capitalism'. However, she also emphasises the specificity of the Korean War. After the Korean War, it was hardly possible to imagine a community beyond a 'family'. Individuals became indifferent to the concept of community and were dominated by the same value—the pursuit of money (So, 2014). Oh Ja-eun analyses Park's novels from the perspective of the formation of the middle-class identity, stating that the framework of the middle class was initiated by the government in the 1970s and 1980s, regarding the novels as a process of filling this 'void *signifie'* by the group of individuals who wanted to become part of the middle class. Oh argues that essential aspects of the novels, including 'feminism, patriarchy, philistinism, and the Korean War', cannot be explained without considering the 'framework of the middle class' (2017, 1–11). Shin Sujeong (1998) claims that Park's early novels were about the growth of modern identity and critiques of the middle class. Including Cha Miryeong's article (2015) on the ambivalence of survivalism, and Lee Seonok's opinion (2020) focusing on the bodily experiences of middle-class women, these studies share the assumption that the Korean War is the origin of aforementioned issues.

Other critics have dealt with similar issues. Jeong Misook (2012) analyses the phenomenon of 'hierarchical space composition and perverted gender' in Park's early novels, and Jeong Mi-seon, who approaches Park's novels from the perspective of 'the cultural history of housing' in the 1970s and 1980s, cites the hierarchisation of residential space, loss of space, and feeling of space as core aspects (2017). These studies focus on the sociocultural meaning of apartments and houses in Park's novels. Furthermore, Oh Chang-eun (2005) analyses how space intervened in the subject's emotional operation and Kim Eun-ha (2016) argues that the ruling tactics of the development dictatorship have produced a large group of competitors who envy and despise each other. These studies demonstrate new perspectives by dealing with the isolation and despair caused by apartments in light of space, place, and displacement. As mentioned above, the three perspectives of the Korean War, the middle class, and snobbery capture the core of Park's novel. By completing this triangle more and more, it has produced a fixation of interpretation. More importantly, these studies attempt to overcome the limitation by which Park's literary works may be confined to the interior of a 'female' writer. Nevertheless, they show no significant qualitative difference from previous studies except the emphasis on the sense of place and loss of place, isolation, and despair.

The second volume includes 'House of Foam', 'Women', and 'Children of Paradise' (2013b). In the following citation, only the name of the work and the number of cited pages are displayed.

This study argues that the desire for apartments imagined and represented in Park Wan-seo's novels reflects the lives of the petty bourgeoisie in the 1970s and reveals their efforts to attain a high level of urban sensibility. In the following pages, I refer to the argument of Richard Sennett, who identifies two aspects of the city: the ville, which refers to the built environment, and the cité, which relates to the modes of life and place attachments to which urbanity gives rise (place-consciousness). The relationship between the ville and the cité is not conclusively defined because there is a difference between the way residents want to live and how the city is built. Building and dwelling also differ, and in this sense, the city is convoluted. According to Sennett (2020), 'cité-consciousness' is the built environment and how people 'want to live collectively'.[3] This paper uses this 'cité-consciousness' to analyse Park's early short stories.

As is widely known, around the year 1970, widespread debate entered Korean literary circles regarding the 'petty bourgeoisie' and 'citizens'. This facilitated maturation of the theory of national literature. Park's early short stories contain a blunt report of the middle class that collectively lived in a new form of the 'ville', called the apartments, and the struggle for an ambiguous future. This was a new attempt to reflect on the present and future beyond the shame of survivalism in the aftermath of Korean Civil War and the philistinism of the middle class.

2 The middle class as a virtual community and the birth of a new visuality

Henri Lefebvre understands space as a social product. For example, Gangnam area, Seoul's richest neighbourhood concentrated with apartment complexes, was created in the process of Seoulites acting strategically for their own interests in response to numerous policies. These include the 'Urban Planning Act', 'Special Housing Site Development Act', and 'Gyeongbu Expressway Construction and Yeongdong District Redistricting Project'. According to Ji Juhyeong, the development process of Gangnam began to address the structural problems Seoul faced in the 1960s. To solve the city's overpopulation problem, the Seoul Metropolitan Government expanded city limits, constructed the 3rd Hangang Bridge and Expressway by the 3rd Hangang Bridge, and designated land readjustment zones, among other policies. In particular, the Gangnam area was actively developed, as announced in the 'South

[3] To illustrate the ville and the cité, Sennett gives the following example. The poorly designed traffic system causing traffic congestion in New York is a problem of a 'ville,' and the infinite competition that causes many New Yorkers to run at dawn is a problem of a 'cité'. He also describes it in relation to the civil community, explaining it as a word adjacent in concept to citoyenneté (citizenship, the privileges of a citizen). For example, those who participated in the Parisian revolution during the nineteenth century argued for a 'new system' with more generalised aspirations than specific demands such as tax cuts and lower bread prices, which reflected a new 'political mindset.' Sennett, R., 2020. trans. by Kim Byung-hwa, *Building and Dwelling: Ethics for the City*, Seoul: Kim Young-sa, p. 9.

Seoul Development Plan' in 1970. Furthermore, large-scale apartments were built in Yeongdong and Jamsil from 1973 onwards.[4] The authoritarian military regime at the time excluded the Gangbuk and Yeongdeungpo areas from development. In Gangnam, they implemented a policy to direct benefits towards the middle class by building apartments for sale. Laypeople of the Gangbuk area and those within the city limits were excluded from the various benefits of urban development, and their concerns were not heard by the authorities. This policy widened the societal gap between Gangnam and Gangbuk. For instance, the land price in Gangbuk increased by only 25 times, while that in Gangnam soared by approximately 800 to 1,300 times in the same period (Ji, 2017, 213–216). The protagonists of Park's novel prided themselves on being members of the 'happy middle class', which stemmed from their satisfaction of being able to be advantaged by preferential benefits and behave strategically to reap the rewards thereof.

To create a new community called the middle class, those in power at the time focused on the southern part of the Han River, which had not been yet incorporated into the city. They built large-scale apartment complexes in this area for about a decade from the mid-1970s onwards. Residents of the apartment cities created in Gangnam gradually created a new daily routine distinguishable from that in other regions. For instance:

> …He enjoyed everything that was told to him through newspapers, magazines, or rumours, as if he was watching a TV soap opera. But he never went overboard to think that the events happening around him were related to his happiness. Just like he wouldn't think what is happening on the TV screen is something directly happening to him.
>
> His daily life was relaxing and happy. And yet he was not totally carefree. He had things to worry about so that he wouldn't feel bored, but he would find a solution to them very quickly and become happier than when he would have nothing to worry about. …….
>
> For example, my neighbours, who envy me, were like a fence that trapped me in the realm of happiness. If there was a fence, I had no choice but to be happy, and if I was happy, there was no choice but to have a fence. (Park Wan-seo, 'Crises', 122–123, 125–126)

I didn't pretend to know anyone, but I'm no stranger. Everyone is dressed in similar clothes and has similar facial expressions. In particular, because of their compromising and contemptuous facial expressions, I feel the same disgusting familiarity as if they are of the same bloodline rather than neighbours. The duality of being able to compromise as much as possible depending on one's interests while recklessly looking down on others with a sense of superiority as a well-off person was not my wife's distinct personality trait. Rather, it was the characteristics of all residents of Mureung-dong. I suddenly thought I wanted to see my face. I hurried into a nearby Western-style restaurant. However, the interior was gloomy, and the mirror was nowhere to be seen. (Park Wan-seo, 'Children', 326)

[4] The original purpose was to remedy housing issues, but there were also the objectives of reducing the financial deficit of the Seoul City Government and providing political funds. Ji, Juhyeong, 2017. 'Gangnam Development and the Formation of Gangnam-type City: Focusing on the spatial selectivity of anti-communist authoritarian development countries'. Making Gangnam, Following Gangnam: The Birth of Speculation-oriented Urban Residents and Speculative Urban Development, Seoul: Dongnyeok, pp. 198–207.

The narrator of 'Cries of a Worm' is a middle-aged housewife. The husband is the head of a bank branch who inherited a two-story building. She also has three innocent and obedient children. She is in no position to complain. Her husband scolds her son for wanting to study art, saying, 'Look at your father now. What is there to draw? What is there for me to worry about?' He reveals his pride in his success. He also enjoys everything as if it is a TV soap opera and never foolishly thinks about linking the world's events and happenings to his own happiness. He obtains satisfaction only from his own safety and the affirmations of others. However, the narrator recognises that their happiness is completed by 'my neighbours who envy me'. With the happiness of middle-class families, which is completed by the recognition and envy of others, her husband became more proud of himself and the son silently repeated his father's life. However, she feels something emptiness in it. As long as their happiness depends only on the 'fence'—the perspective of others—and even if she feels unhappy, their fence of judging other's happiness by their own standards will still imprison her in the 'realm of happiness'.

Thus, what kind of people are these neighbours who judge even the happiness of others based on their own standards? It can be inferred from 'Children of Paradise', in the second quote above. The main narrator is a university lecturer whose wife dabbles in real estate. The wife, who successfully ventured into apartment real estate, has a busy schedule surveying land with real estate agents and thus neglects housework. The abovementioned quote depicts the faces of the neighbours that her husband, who came out from the apartment complex with the money his wife gave him to eat out, observed as he passed through an apartment shopping mall full of real estate and security offices. 'Compromising yet disrespectful expressions', 'disgusting familiarity', and 'two-faced to the extent they compromise as much as possible' are the descriptive terms for people who constantly evaluate others based on their interests. Mureung-dong, the background setting of the piece, is a place where 'gold is directly spawned'. It is explained that the residents of Mureung-dong are 'all wealthy, and the pride of being a resident of Mureung-dong is great'. Like the narrator's wife, those who made their wealth through several apartment speculations secretly despise their neighbours but do not hesitate to compromise if they meet their interests. The protagonist's wife also falls in that category, and the faces that 'I' observes—the faces with expressions that 'I' finds disgusting—do not differ from 'hers' or 'mine'.

Then why do apartment residents have such complex attitudes? One reason is that the experience of making money from apartments has led residents to gain a new visuality based on these apartments. Visuality, which means 'sight as a social fact', refers to the gaze of the subject formed through social discourse and social relations.[5] The new visuality gained by the main characters of Park Wan-seo's novels by living

[5] If 'vision' means sight as a physical action, 'visuality' means sight as a social discourse. According to Hal Foster, the difference between the two is 'the difference between sight data and the discourse regulations of sight' and 'the difference between how we see and how we are made to see'. Each scopic regime wants to abolish these differences to integrate the many social visuals of the system into one essential perspective. Foster, Hal ed., 2004. trans. by Choi Yeon-hee, *Visual and Visuality*. Pusan: Gyeongseongdae Publications, pp. 7–8; Oh, Changsub, 2013. "Perspective Methods." *Modernity Strikes Back – Modern Mechanisms that Designed Us*, Seoul: Hongshi, p. 64.

in apartments is the ability to convert apartment space and life into 'economic value'. This visuality, stemmed from the scientific perspective, is also an expression of the willingness to change the object into a homogeneous one. According to Oh Chang-seop, the subject, who has internalised this perspective, considers the space of life that one has lived from a new perspective. The subject discovers disorder in a space where no problems have been found before and finds a strong will to transform the disorder in a way which is desired by the perspective.[6]

A scene from 'Children of the Paradise' serves as a good example. 'Perfect learning' and 'perfect order' are school mottos at the Mureung Elementary School. The school's principal tries to manage even the trees of the campus with this orderly gaze. Consequently, the trees in schoolyard become 'leafless one day, although it is not autumn yet.' This is because he thinks that when leaves start to fall from trees, the environment becomes untidy; therefore, he makes children drop all the leaves and cleans them before they fall (Park Wan-seo, 'Children', 318–319). The humans of the past, riddled with terrible memories, shame, and the guilt of the Korean War, have disappeared. People's lives have been taken over by the mutual surveillance of observing and evaluating each other's daily lives. Rather than escaping this gaze, the majority of the public voluntarily surrenders to the prison of this gaze.

Areas where buildings of the same shape are concentrated are vulnerable to repeating the cycle of this rise and fall. This is because if the valuation of one building changes, other buildings with similar structures are similarly evaluated.[7] Therefore, apartment residents cannot alone maintain or increase apartment prices. A collaborative effort is needed to create prestigious schools in cooperation with neighbours in the same living structures and area and work together to prevent them from being undervalued. Consequently, material goods are the only motivation uniting them into a community. All the events at the Mureung Elementary School adequately illustrate this notion.[8] The duality of the neighbours' facial expressions observed in apartment complexes is related to the fact that their lives have been reorganised into new visual elements. The tension of paying full attention to this calculation of their interests

[6] Oh Chang-seop notes that modernisation, which has been promoted since the 1960s, has proceeded quickly with this perspective (primary) view formed through the Japanese colonial period. Rapid modernisation since the 1960s was achieved without much resistance because the perspective was already deeply embedded in the public consciousness during the previous period. Ibid., pp. 84–96.

[7] Sennett considered negatively the 'Ceridian Ville,' where houses of the same type are repeated indefinitely, like apartments, citing the case of Ildefon Cerda's 'Cerdian grid'. The goal of the Cerdian Ville was to equalise it and the cité, but this attempt had a different result than intended. This is because problems that began in one building spread rapidly like infectious diseases, much like the problem of 'single cultivation' in agriculture. Problems such as neighbourhood conflict and drug addiction were inevitable because other buildings were also socially and physically alike. Sennett suggested a solution that there should be buildings, activities, and people of various structures in the same environment, even if they appear visually disordered. Sennett, R., 2020. Ibid., p. 67.

[8] The educational level of children at Mureung Elementary School is far higher because of a thorough cramming-style approach to studying. Competition is routine here. Even making donations to help the underprivileged is competitive, becoming a joint goal of all parents and the school to ensure that the school's name is mentioned in newspapers. This is because the better the school's reputation, the higher the prices of Mureung Apartments will become.

cannot be maintained without the conviction that all the neighbours and 'I' have similar desires. The conviction of this similarity is also aligned with the sense of space individuals have in a huge apartment complex where the isomorphic structure is infinitely repeated. Therefore, it is necessary to consider the opening and closing of apartment cities carefully.

3 Apartments as a Voluntary Ghetto and the Affect of Anxiety

Sennett identifies two aspects of the city: the 'ville', which refers to the built environment, and the 'cité', which relates to the modes of life and place attachments to which urbanity gives rise. The distortion between ville and cité usually occurs when people refuse to live with other neighbours. This is reflected in the result, which manifests as a 'gated community' (Sennett, 2020, 11–12).[9] Sennett affirmed that 'barbaric simplification' has dominated modern life and that standardising the ville resulted in the production of the 'closed city'. However, it is argued that the moral city we should strive for, or the morally 'open city', is a place where synergy from diversity, complexity, and interaction flows, creating soil from which people can expand and experience various things and freeing them from fixed shackles (Sennett, 2020, 20–23).

Apartments, which began to be built on a large scale in the 1970s, are archetypes of standardised architecture for the rational allocation of resources and spatial efficiency. According to Jeong Heon-mok (2012), the spread of residential complexes such as the gated community to both the upper and middle class is a phenomenon only seen in Korea, where apartments are distributed as universal residential complexes. For example, security guards and access control systems at the entrance of the complex, which are common in Korean apartments, are accepted without much objection. This indicates that Korean residential complexes aim to give meaning to the value of individuals or nuclear families and secure private spaces (Jeong Heon-mok 52–53).

> We do things that both my mother-in-law and I hate because of other people's watchful eyes. That's the case with senior citizen school. I don't think my mother-in-law enjoys going to senior citizen school. However, I send her there because it is popular for the elderly living in this apartment complex to attend.
>
> The elderly are precious beings in this apartment complex. There's only one elderly individual per building. How lonely it must be... Having a senior is such a beautiful thing that even those families who do not have seniors say how nice it would be if their mother lived with them; she could go to senior school once a week, and they could take care of her.

[9] Sennett, R., Ibid., 11–12. The gated community is a residential complex where public spaces are privatised, and access is restricted, where the grammar of the space that promotes interaction between people of the same social class is operated. The characteristics of the gated community can be summarised as 'hiding behind the gates', a 'community element', and 'building a new sense of place'. This symbolises the social and spatial hierarchy of the modern world created by the development of information technology and global capitalism.

> It was similar to a person who cannot have babies drooling over them in their strollers… I wasn't close to anyone who lived in this apartment complex, but I was on a familiar basis with most people, and I had a vague sense of fear that if I didn't do what others were doing, they would point fingers behind my back. (Park Wan-seo, 'House', 71–72)
>
> Nevertheless, how I envied his position in the company and his living conditions at the time. I thought there would be nothing more to ask if my husband could gain such a social status and live in such a house, have my son receive private tutoring, and my daughter take piano lessons.
>
> At that time, his son, a Grade 8 middle school student, came back from private tutoring late at night wearing high-level prescription glasses and being angry and annoyed. His daughter, who was in elementary school, would play random notes on the piano and not pay attention to the fact that there were guests in the house. I couldn't be more envious of it. (Park Wan-seo, 'Women', 270–271, my emphasis)

In 'The House of Foam' and 'Women', the depictions of the narrators being sensitive to other people's 'watchful eyes' and living standards are eloquently documented. It is also revealed that their daily lives are driven by fear and envy. In Park's early novels, 'the old folks' are mainly the narrator's mother-in-law or mother. The narrator's mother, who does not live in an apartment, is afraid of the 'cold and thorough independence' of apartment life ('Similar Rooms'), and there are awkward portraits of the mother-in-law who lives in the apartment. She washes her face with the water from the toilet bowl ('House of Foam'). They are collectively referred to with the derogatory term 'the old folks', highlighting them as alienated beings in the apartments, which are centred on nuclear families. The indifference and subtle disdain towards the elderly are evident in the passage, 'as the old folks are rare beings to this apartment complex. There is only one elderly person per building'. The old folks are rare in the apartment complex, and the apartment residents focus on their children, as seen in the second quote. The fact that they are 'receiving tutoring' or have a piano is the focus, not the spoiled attitude of an irascible middle school child and a rude elementary schooler. Furthermore, the fact that their father has a considerable level of 'status' and an appropriate 'home' shows how thoroughly the logic of their lives is maintained in others' eyes and recognition.

In large cities where freedom from others has been realised, living in apartments is expected to be a positive experience, as it protects the privacy of nuclear families and frees residents from their nosy neighbours. The main character of 'Similar Rooms' (1974) moves into an apartment with high expectations for a modern life liberated from familial relations, the freedom to go out, and a life easy to manage without the need for a housekeeper. However, these expectations are soon destroyed. Apartments are a negative place leading to uniformity and isolation because the people living there are comparable with having 'the heart of a prisoner living a life sentence'.

> Just like how our rooms and Cheol's room were similar, the rooms adjacent to our rooms were also similar. Of course, some houses had washing machines, which other houses did not have, and some bought pianos before other houses did. However, that sense of superiority did not last long because someone would soon imitate these actions.
>
> Just as Western women go on a diet to lose weight, the women in these apartments went on a diet to resemble others.

> Similarly, I attempted to be better than Cheol's mom or the other women living in other units. Consequently, I lost my life to become like others. My husband also lost his warmth and softness and seven years of time for an 18-pyeong apartment. (Park Wan-seo, 'Similar Rooms', 278, 283–284).
>
> They were small adults in the way they dressed and their attitude. They were not like children at all. They had an uncompromising and contemptuous expression and no sense of curiosity seen in normal children. This made the children look like non-children. /I don't know if it is new or old news to discover that the children on this street are not like children. Anyway, I was nervous about this discovery. /I wanted to go home quickly to relieve my anxiety. (Park Wan-seo, 'Children', 326–327)
>
> There is something strange about living in an apartment. While I have numerous neighbours, left and right, upstairs, and downstairs, I suffer from a desperate sense of disconnection, exiled to high altitude even when I do not hear the 'th-' sound of the phone. But I also had the agony of being conscious of someone's eyes and ears, as if someone is always peeping in or eavesdropping from the windows and the thick walls. (Park Wan-seo, 'Weekend Farm', 149–150)

The narrator in 'Similar Rooms' is a young housewife who succeeded in moving into an 18-pyeong (59 m^2) apartment after seven years of living at her parents' house. By referring to the apartment she lives in as a 'room' rather than 'home', the main character recognises that the apartment is not a safe habitat for familial communities. Rather, they are spaces for individuals with inner lives laced with anxiety due to the risk of 'easy peeping'. The endless connected similar 'rooms' are transformed into unfamiliar spaces that repeat the conflicting emotions of superiority and loss to the residents. Nevertheless, the desire to own an apartment cannot be easily denied. For the middle class, apartments are objects subject to speculation that 'directly reproduces gold' ('Children of Paradise'). The male protagonist considers his children those who do not behave like children and his wife who speculates in real estate as being in a precarious state. However, he also recognises his wife's economic power and is satisfied with the order of things. His willingness to sacrifice patriarchal authority for economic stability demonstrates the circumstances of the middle class. The narrator of 'Weekend Farm' expresses the pain of being surrounded by 'many neighbours' and having to be conscious of people's eyes and ears through the windows and walls. Nonetheless, the narrator also expresses the contradictory feeling of a 'desperate disconnection' when they are not even connected by phone.

Just as the first sign of the upward movement of the proletariat in the United States in the nineteenth century was the suspension of paid labour for women (Sennett 1970, 100), women in large apartments are housewives who stay at home or speculate in real estates. However, there is nothing like the solidarity and empathy among women widely seen in the past. Only a calculating relationship, wherein they keep their distance, remains among them so that they do not lag behind. As noted in 'Similar Rooms', the apartment structure is one-dimensional, as if the rooms are lined up in a row. The individuals in it feel more anxious than at ease because although they are out of the eyes of their neighbours, they feel routine competition and anxiety over their failures.[10]

[10] The main character of 'Similar Rooms' buys a lottery ticket when she finds out that it is the reason her neighbour, Cheol's mom, radiates joy and tension every Friday. However, she confesses

According to Oh Chang-seop, subjects, who have internalised perspective visualisation, project the same gaze even in the private quarters of their homes. The perspective landscape repeatedly expands, as household furniture inside the home is also hierarchically and perspective-wise arranged (Oh Chang-seop, 100). The perspective view maintained at home is expressed in 'Similar Rooms' as the same side dishes and recipes, the same housekeeping, and the joint purchase of lottery tickets. The narrator of 'Children of Paradise' feels so 'nervous' for his children who share the same facial expression as adults but cannot leave his apartment life. This is because like an orderly apartment space, he feels a sense of relief by lining up for the same kind of desire—material achievement— for which others line up.

One condition of an open city is to pay maximum attention to consensus for minimal standards of coexistence without focusing on each other's differences and constantly strive for this aim. Therefore, mixed neighbourhoods, informal street life, no rules, non-linear and indefinite development, slow time, and natality as an endless process of communication and interaction emerge (Sennett, 2020, 118–126; Arendt, 1958).[11] However, the city in Park's novel is a place sensitive to differences; when minor difference is detected, it tries to eliminate it. This is the structure of feeling that pervades apartment residents who coordinate with a homogeneous and flat apartment space. It comprises people who expect to create their own ghetto by eliminating internal differences. The main characters wish to have everything others have in their homes. Nevertheless, their desperate situation of recognising this as a problem, although not being able to stop living their homogenous lives, drives them into deep anxiety. What are the conditions to escape this anxiety? This is what the female characters of Park's novel from the early 1970s ask.

4 Imagination of Defamilisation and Finding 'Individual' Space

In Park's novel, the imagination of defamilisation is mainly expressed through a housewife's act of adultery or her imagination of this transgression. The protagonist of 'Similar Rooms' has sexual relations with her neighbour's husband while the neighbour visits the countryside. In 'House of Foam', the protagonist attempts

being showered 'with unexpected anxiety, let alone joy'. This was because of imagining that if they did not win the lottery, Cheol's mom might. In that case, they would be the only ones able to live in the suburbs in a large private residence with a yard and escape a sentenced life in an apartment without parole. Ultimately, Cheol's mom and 'I' share something in common, but 'I' lose interest in the lottery and return to my boring daily life. Park Wan-seo, 'Similar Rooms', pp. 286–287.

[11] For Hanna Arendt, 'Public Spheres' are dependent on space, unlike Kant. What Arendt refers to as 'birth' means 'the beginning of an individual's existence'. This refers to an effort to adapt life to others or be reborn as an endless process of communication and interaction. Sennett argues that if people learn to cooperate, they can become better at 'birth' and competent urbanites. Ibid., pp. 440–441.

to have a relationship with a university student who produced an amorphous architectural drawing in the shape of foam. In both 'Flowers Fall and Leaves Bloom' and 'Teaching Shame', it is sometimes implied that the husband's friend or a teacher from high school are imagined as objects of adultery or that the men secretly imagine them as sexual objects. If the maximum level of deviation a housewife can partake in within a patriarchal society is 'adultery', then the actions of these female characters can be understood as resisting patriarchy, which covertly sympathises with the military regime's hierarchical strategy of the 1970s. However, interpreting the main characters' actions only from this viewpoint reduces the significance of their attempted defamilisation. The main characters are trying to escape their homes because it is an effort to find their individuality separate from other people's gazes and build their own place in the desolate city.

Regarding how the movements of the female protagonists, who are homemakers, are organised, the meaning of the defamilisation these women pursue is clarified. Most women represent the internal presence of the home. They only move from their homes to their friends' homes ('Teaching Shame'), husband's friends' homes ('Flowers Fall and Leaves Bloom'), neighbour's master bedroom ('Similar Rooms'), schools their children attend ('Triangle,' 'Children of Paradise'), and their parents' homes or rented apartments ('A Sad Visit'). The people the protagonists encounter in their neighbourhood or one's friend's family are like the protagonists in many ways—almost copied and pasted versions of them. As these women are internal to the home, they rarely encounter strangers in situations different from their own.

'Weekend Farm', 'Foam House', and 'A Certain Outing' deal with encounters with strangers. The beginnings of the three works are similar. The boring daily lives in apartments or homes are introduced, and homemakers who are painfully aware of this boredom appear. One character realises that she is a 'cold, hardened metal poured in a frame of eleven *pyoung*' ('A Certain Outing'). Another feels nervous of being left out and makes small talk every day, boasting to her college friend ('Weekend farm'). Yet another lives with a constant 'feeling of stairs falling beneath her feet' ('House of Foam'). By examining their lives from a relativistic perspective or attempting to create small cracks in their daily lives, readers feel as if these unfamiliar characters have unfamiliar lives.

> Whether to buy or not, do this or that, she behaved fickly like a crazy bitch. But someone pointed out politely that she is being excruciatingly petty and exposing herself as poor regarding whether she should spend only 250,000 won. And then she said, well it's nothing, it's just 250,000 won, nothing to sweat, it's just 250,000 won… The thin and flaky lips flapped around talking about 250,000 won, and she decided that she would decide whether to buy it by asking her children…...
>
> 'Honey, say something. We can live well, too. If ten pigs grow well, I don't care if I lose my head. We'll be able to have a lot of money in our hands. A lot of money… it should be well over 300,000 won. Even if the price of pigs falls because of bad luck, we should easily get 250,000 won at the least? Two hundred and fifty thousand won!' /My wife said, even if it's not a human being, I wonder if a jealous abysmal ghost would overhear us and interfere with our plans. (Park Wan-seo, 'Weekend Farm', 164, 169)

The first half of the quote above is a conversation between homemakers living in an apartment complex, and the second half is a comment by a young woman who is on a picnic and farming near Seoul. The homemakers of the apartment learned from other parents in their children's school that a parent had purchased a weekend farm 'when they were mere poets'. Thus, they came to explore the area to jointly buy a weekend farm and have a play date by the water. They bluff and say they should buy 500 pyeong, which is 10 times the 50 pyeong the poet paid. They say that if it works out, it will be only 250,000 won per household. Unlike her previous works, the narrator cynically describes their actions and demeanour. To that end, the narrator states, 'This kind of farming is in vogue these days', and 'Their picnic preparations are so crazy that only the parties involved understand'. Above all, the author highlights the contrast between the attitudes of the apartment homemakers and those of the farmer's wife, which is quoted in the second half, in terms of their attitude regarding 250,000 won. This is because the 250,000 won the apartment homemakers giggle about as a 'petty and poor' amount to worry about is a huge amount of money for the farmer's wife. The farmer's wife is believed to be about the same age as the homemakers, and she fears that ghosts will heckle them with such a large sum. The point of the novel is the contrast regarding the considered value of 250,000 won, which differs for the farmer's wife, who can only obtain this amount through hard work carrying heavy stones, and the middle-class homemaking.

The main character of 'The House of Foam' lives with her mother-in-law, who has dementia, and a son who complies with the school policy without raising any objections. The husband, who abides by the standard of the period with the repeated phrase 'for their son', lives in the United States to secure their future happiness without a promise. Captured by boredom and the despair of being trapped, she frequently thinks about death and imagines a 'honey-like negation, fire-like negation', leading a precarious life. One day, she sees a perspective drawing of 'a house of foam' at an architectural exhibition at a gallery. In the drawing, a small commentary states the following: 'Let's free future housing from the straight line of conventional housing!' This is contrary to the current state-of-the-art architecture of apartments. The speaker of the piece reminds her that she is of a generation uninterested in individual homes and who consider such attempts amateurish. However, simultaneously, she is interested in the young man who created the work.

> The poor prophet. I thought that the foam of the future house he drew might not be a drawing of a building but a portrait of the future family. So what a horrendous prediction he made… I was probably hoping it was a drug that could shorten my lifespan. But I never gave the pill to my mother-in-law because I was afraid of what I was hoping for. I ate it instead. Now I can't sleep without taking the medicine… As I was departing my consciousness, I saw my beloved apartment group disintegrate when the bold and clear lines were twisted and left its traces in foams that could disintegrate if I huff and puff towards it. (Park Wan-seo, 'House', 82, 84)

The quote above is by the protagonist, who has failed in her love affair with an architecture student who has 'long hair and wears ragged clothes' but is 'very handsome'. The main character, who regards the house of foam with a waterdrop-shaped curve as 'not a building but a future family', imagines that the apartment complex is torn

down, leaving behind foam-shaped remnants, as she is unconscious after taking a sleeping pill. The protagonist loses her way between her husband and children and 'firmly and surely' treads on the given way of life without questioning and lives in an apartment with 'firm and sure' lines. She fails to create cracks in her daily life with the help of a stranger. In this process, a greater sense of despair and crisis is observed within the author's consciousness. The 'House of Foam' shows that life in an apartment cannot be improved regardless of how hard one tries because it has become a place where only humans who pursue their goals in a linear progression can survive.

In 'A Certain Outing', a housewife who secretly drinks soju after her husband leaves for work appears. Her husband, a teacher, is calculating and pragmatic to the extent that he married her after weighing the practicalities of marrying her without meeting her. She started drinking soju, which her husband prohibited, after she became a watchwoman for an 11-pyeong traditional Korean home, which her husband bought after long years of work. Leaving her home and taking to the streets, she feels liberated by attempting small endeavours she could not have engaged in if she was sober. Visiting Mrs K's gallery with high hopes, she is disappointed by her hypocrisy. Subsequently, the protagonist spits and yells, 'Dirty fuckers, fuckers!' She yells loudly in a taxi, leans on a ride sharer's shoulder in the taxi, kisses a stranger's lips, and makes worthless jokes to strangers. She understands that she cannot place too much value on such petty deviations from her routine.

> I am aware that I am a cold, hardened metal poured into the frame of 11 pyeong. I had already hardened like that a long time ago. . . . It is impossible that a bottle of soju would return me to melted iron—that has the potential for infinite possibilities. . . . A bottle of soju cannot be such a hot, chillingly hot source of heat. I'm just rusting, and there is no way for me to melt bubbling away. (Park Wan-seo, 'A Certain Outing', 62–63)

The quote above, which corresponds to the final part of the work, is a scene where the character sits alone in a place overlooking the city of Seoul and reflects on herself. She is aware of her current self as a 'cold hardened iron piece' and that 'a bottle of soju' cannot return her to a blazing melted iron. She acknowledges that it requires more determination and action. It is not yet clear what a 'chillingly hot source of heat' means. However, the scene emphasises that the direction of life she wants is beyond a slight deviation from the routine, and it aims for infinite possibilities.

The 'imagination of a defamilisation' attempted by the main characters of Park Wan-seo's novel extends beyond the passive meaning of separation from the patriarchal family framework. The uniformity and hierarchical 'purity' born in the 'ville' of apartments tie the infinite possibilities of an individual to the economic achievement of one family. Therefore, a character's dream of defamilising is to think about how to break away from a flat, uniform space. Furthermore, it is to imagine a transition from an isolated family to an expanded community. There is a perception that the 'cite consciousness', which strives for a civic community, cannot be found in the 'ville' of apartments. Uniformity and hierarchical purity have converted urban spaces into function-like ghettos. This realisation implies that the uniformity of urban spaces and class purity have rendered these spaces into psychologically barren places in which to

live. Moreover, the 1970s consciousness that urged citizens to become less 'shallow' and more 'citizen-like' indicates the psychological shallowness of the space. Thus, the anxiety captured in Park Wan-seo's early novels can be understood as a new affect in which the protagonists are pushed into the bottomless emotions of envy, jealousy, helplessness, and despair. However, it denies a further advance of these emotions and attempts for a new form of life.

5 Conclusion

This paper examines flatness and uniformity in the space of apartments in the 1970s while critically exploring anxiety and pain of middle class in the apartments shown in Park Wan-seo's novel. According to Park and Jeon, it is the 'model house' and a 'neighborhood unit' that put Korean apartments into double closure in the 1970s. The model house served to produce 'closedness of the household unit' indifferent to neighbours by reducing and displaying apartment life thoroughly centred on the interior space (Park Chul-soo, 2006). In general, 'Neighbourhood unit' refers the inclusive concept of residential design model with convenience facilities, shops, and safe pedestrian paths that the community needs. However, contrary to its original intention, the neighbourhood unit contributed to strengthening the 'closedness' of the residential design model of apartment complexes. This means that the apartment complexes are territorialised as an exclusive space while all convenience facilities are concentrated in the complexes and all exterior spaces are surrounded by walls (Jeon Nam-il et al., 2008). This caused double layers of exclusion where the apartment dwellers become indifferent to their neighbours within the complexes while being separated from urban spaces outside the complexes. As a result, the unique mode of communality is created by isolation of the dwellers' emotional structure and the apartments' compositional logic from the existing urban context.

The middle class in Korea was formed in the 1970s, when apartments as a residential style began to gain popularity. As the critic Hyun Kim observed, the flatness, uniformity, and double closure of the apartment space had a profound impact on the mindset of the middle class living in apartments. As learnt from Park Wan-seo's novels, the snobbery, false consciousness, and materialism of the Korean middle class were deeply related to the apartment space. Their apartment had a flat structure, so everything was exposed, and anyone could grasp their standard of living and lifestyle at a glance. Therefore, it can be understood that one of the reasons why apartment dwellers were anxious to the extent that they react sensitively to even the slightest differences between them and others was that they became strongly conscious of 'the gaze of others' in apartments, unlike existing traditional houses. As such, the apartment complex in the 1970s was a group of buildings with the structural repeating units, which served to ensure economic stability rather than psychological stability of residents. Although it represented the newest and 'urban' residential type in Korean society, the apartment complex produced the distorted urban sensibility resulting

from mutual observation and surveillance, timing, imitation, and competition in the complex.

Meanwhile, this study argues that the desire for the apartments imagined and reproduced in Park Wan-seo's novels reflects the lives of ordinary citizens in the 1970s and also reveals their aims for a higher level of urban sensibility. In order to demonstrate this, Sennett's theory is referred. As is well known, he divides urban life into 'ville' and 'cité' and reflects on the relationship between the two. Cité reveals how people want to live collectively, demonstrating the meaning of individuals and communities depicted in Park's early short stories. These early short stories are a blunt report of the middle class, who collectively reside in a new type of 'ville' called apartments but fail to grow into mature citizens. As such, the apartment as a living space for the middle class in Korea symbolically shows the 'twist' of 'building and dwelling' mentioned by Sennett. Just as the built environment of the model house and the neighbourhood unit drove the apartment complex into a double closure, the space not only provides people with a living environment, but also exerts a powerful force to reconstruct their emotions and affects.

Park Wan-seo's early short stories in the 1970s portrayed housewives who find unfamiliar expressions on the faces of ordinary neighbours that are strangely mixed with disgust and familiarity. They were surprised and frightened by the appearance of their neighbours, knowing that their own faces would not be any different from theirs. Such facial expressions showed the self-contradiction of the middle class at the time. They did not hide their pride as highly educated intellectuals, but at the same time, did unscrupulous things for their own success. In particular, they severely controlled their children's school and personal life, and such behaviour was rationalised in the name of children's success and future happiness. They considered it ineffective to reflect coldly on one's own life and the life of the community, or to pay attention to the suffering of others conveyed by the mass media. The women in Park's novels found the symbol of an era when growth and development took precedence over everything, in the straight structure and unity of apartment architecture, and the solidity and certainty associated with it. And they denounced the fact that this type of housing strongly dominates the consciousness of the residents and that everyone is running towards the same goal of life.

Park's apartment novels reflect on the lives in the Korea's typical apartment complexes as a strong gated community only for the middle class in the 1970s. Important thing is that such reflection is also in line with the concern of contemporary people living in the era of digital revolution. With the improvement of digital technology to manage the city, individuals in the city are living a faster and more convenient life than the previous generation, but the speed of technology driving changes in the city always transcends the speed of life of citizens, so that technology leads the life of citizens. Urban people tend to feel tired and isolated while quickly adapting to the new smart technology of the city. This is because digital elements serve to create another gate and spread faster and easier in contemporary cities. As Park's apartment novel recognises the gap between 'building and dwelling' and utilises the 'imagination of a defamilisation' to overcome this gap, contemporary

urban dwellers also realise that the built environment of the city, where digital technology is deeply involved, and the urban lifestyle that city dwellers really want to live in are at odds with each other.

In this sense, although they reflect on the lives over a half century ago, Park's novels shed new light on the urban living at the present day. The protagonists of the novels voluntarily surrender to such a system for economic gain while feeling self-contradictory in the living space of an apartment. Likewise, the residents in contemporary cities also feel uncomfortable with the disconnection and passivity of the monitoring and access control system, but they also have a self-contradictory desire to settle in the 'inside' of the system. This can be seen as proof that contemporary people are more afraid of being separated from technology and moving away from the realm of technology than deepening disconnection and isolation. 'Digital Polis' is a new and challenging concept designed to explore urban communities in the era of digital urbanisation. In this sense, the findings of this paper can serve as the basis for more comprehensive exploration and more detailed discussion of Digital Polis in the future.

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Spatial and Digital Fortressing of Apartment Complexes in Seoul: Two Case Studies

Ji-in Chang and Soe Won Hwang

Abstract Previous studies have associated gated developments with fear of crime, social exclusion, and fragmentation of urban space. However, there have been few studies that have explicitly examined the visible and invisible methods of spatial control. This study investigates the progressive strengthening of both the spatial and technological means of spatial control in Seoul's apartment complexes on a timeline. It traces the evolution of control beginning from the initially pervasive physical boundaries of apartment complexes in the 1970s to the panopticon-like digital surveillance in the 2020s. After placing this study in the critical literature of gated communities emphasizing the Korean context, two cases are analyzed to examine the representatively conspicuous phenomenon of spatial and digital fortressing among apartment complexes in Seoul. The first case study of a typical apartment complex built in the early 1980s in Gangnam, one of Seoul's most affluent districts, shows the chronological implementation of spatial and technological control which are 'added on' or retrofitted over time. The second case shows how these spatial and technological controls have been incorporated as part of the 'total package' of amenities included in a nearby redeveloped apartment complex built in the late 2010s. The paper aims to highlight the growing trend toward social and urban fragmentation in Seoul and to contribute to the discussion on how urban design and technology are shaping an intensified residential exclusiveness.

Keywords Gated community · Apartment complex · Physical gating · Surveillance technology · Physical and digital fortressing timeline

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1 Introduction

Seoul has formed an indigenous, yet homogeneous urban landscape composed of high-rise, high-density apartment buildings within a complex cityscape. Until the 1990s, the public sector has been the major supplier to construct apartment complexes due to housing shortages (Kwon and Yun 1991; Kim 2001; Gelezeau 2007; Park 2013). Subsequently, the private sector took charge of redeveloping old or deteriorating apartment complexes and turning them into up-market, branded products (Jun 2009; Hwang and Kim 2020). Typically, the sales price of these redeveloped apartments includes a 'total package' of well-constructed community facilities as well as the housing unit itself (Yang and Kim 2022). Due to the private sector's distinctive marketing strategy of providing luxurious amenities restricted to residents, these apartment complexes are raising concerns regarding social and economic segregation associated with gated communities (Kim and Lee 2020; Kim and Kim 2021). These concerns are compounded by the increasing tendency of high-income groups to live in homogeneous 'citadels', leading to proliferating exclusive, self-contained entities within the urban fabric (Blakely and Snyder 1997; Marcuse 1997; Low 2003, 2008). This phenomenon is progressing toward spatial and digital fortressing of apartment complexes that are rapidly transforming residential neighborhoods into gated enclaves, restricting public access through visible and invisible means of control.

After placing this study in the critical literature of gated communities emphasizing the Korean context, two cases are analyzed to examine the representatively conspicuous phenomenon of spatial and digital fortressing among apartment complexes in Seoul. The first case study of a typical apartment complex built in the early 1980s in Gangnam, one of Seoul's most affluent districts, shows the chronological implementation of spatial and technological control which are 'added on' or retrofitted over time. The second case shows how these spatial and digital (technological) controls have been incorporated as part of the 'total package' of amenities included in a nearby redeveloped apartment complex built in the late 2010s. The study shows how restrictions on public access and the fortressing of residential housing have increased and strengthened over time. The study starts with a literature review of gated communities and discusses the Korean context. Thereafter, a plan analysis is undertaken to identify the progressive installations of surveillance technology, such as CCTVs, in the 1980s apartment complex. Area maps, site plans, and results of field surveys are examined as part of this analysis. The implications of the evolution toward fortressing apartment complexes are discussed concerning the concept of the gated community, spatial segregation, and the surrounding urban fabric. This study aims to highlight the growing trend toward social and urban fragmentation in Seoul and to contribute to the discussion on how urban design and technology can be used to create a more inclusive society.

2 Literature Review

2.1 Exclusion Through Spatial and Digital Fortressing

Gated communities can be seen as a dramatic manifestation of fragmentation, polarization, and divisions within society (Grant and Mittelsteadt 2004; Blandy and Lister 2005; Pow 2007; Yang and Kim 2022). According to Blakely and Snyder (1997), gated communities are residential areas protected by walls and fences; most have secured gates and entrances to ward off potential dangers from 'outsiders'. They are divided into three types[1]: the lifestyle community, the prestige community, and the security zone community (Table 1). Blakely and Snyder (1997) wrote how people wishing to associate themselves with those of similar socioeconomic backgrounds come together to secure property values and/or to find safety from crime by erecting walls and gates to control access by outsiders. The creation of micro-territories (Le Goix and Webster 2008) leads to concerns about equity (Woo and Webster 2014). This is often expressed concerning club goods (Buchanan 1965), in which desirable goods and services are provided to 'club' members only. Yet gated communities are not completely private nor public, and their micro-territory is not completely independent from the rest of the city.

This 'voluntary exclusion' by the affluent groups of society has also been described as the 'secession of the successful', characterizes by the privatization of urban space (Lasch 1995; Brown 2000; Atkinson and Flint 2004). This 'voluntary exclusion' can come in two forms: first, the visible fortress characterized by physical and symbolic barriers, such as walls, fences, gates, and physical distance, signs, control of territory (Kim and Choi 2012; Hwang and Kim 2020; Kim and Lee 2020). The second is the invisible panopticon exemplified by the privatization of public space, the presence of security guards, CCTVs, and other digital systems of exclusion (Oc and Tiesdell 1999; Monahan 2006). Recently, these visible and invisible barriers have been reinforced by advanced technology, exemplified by ubiquitous sensing devices, alerting functions linked to home-automation systems, and residents' security cards to gain access points to lobbies, resident lounges, libraries, and sports facilities within the gated compound.

From an urban planning perspective, gated communities disrupt the urban fabric as 'the gated community's walls and fences prevent public access to streets, pavements, parks, beaches, rivers, trails, playgrounds, etc., which would otherwise be open and shared by all the citizens of a locality' (Carmona 2021: 348). In his view, gated communities are distinguished by a much greater extent of geographical enclosure compared to apartment blocks. Recently, some highly secured apartment compounds in Korea are strengthening measures of control of entry to prevent 'outsiders' from

[1] These were further subdivided into 9 sub-types according to their characteristics; the prestige community was further categorized into enclaves of rich and famous, top-fifth developments, and executive middle class.

Table 1 Blakely and Snyder's (1997) general typology of gated communities

Type	Features	Subtypes	Characteristics
Lifestyle	These projects emphasize common amenities and cater to a leisure class of shared interests; may reflect small-town nostalgia; may be urban villages, luxury villages, or resort villages	Retirement	Age-related with a suite of amenities and activities
		Golf and leisure	Shared access to amenities for an active lifestyle
		Suburban new town	Master-planned project with a suite of amenities and facilities; often in the Sunbelt
Prestige	These projects reflect a desire for an image, privacy, and control; they focus on exclusivity over community; few shared facilities and amenities	Enclaves of rich and famous	Secured and guarded privacy to restrict access for celebrities and very wealthy; attractive locations
		Top-fifth developments	Secured access for the nouveau riche; often have guards
		Executive middle class	Restricted access; usually without guards
Security zone	The projects reflect fear: involve retrofitting fences and gates on public streets; controlling access	City perch	Restricted public access in the inner city area to limit crime or traffic
		Suburban perch	Restricted public access in the inner city area to limit crime or traffic
		Barricade perch	Closed access to some streets to limit traffic

Source Grant and Mittelsteadt (2004: 915)

gaining access to facilities and services. This privatization of entire city blocks occupied by these gated apartment compounds makes adjacent public neighborhood facilities more difficult to reach for others, as routes are cut off or a detour around the edges of the gated compound becomes necessary. This phenomenon gradually takes on the nature of 'quasi-public' goods to which the movement of the public is restricted by gates, signs, symbolic barriers, and physical design (Webster 2001).

2.2 Visible and Invisible Elements of the 'Gated' Apartment Complex in Korea

Compared to the literature on the visible (physical) aspects of 'gating', such as walls, fences, and landscape features (Low 2003; Hwang and Kim 2020), relatively little

attention has been paid to the advances in invisible (technological) controls in apartment complexes. Schuilenburg and Peeters (2018) point out that territoriality is key to the idea of defensible space, defined by Newman (1972) as 'a residential environment whose physical characteristics—building layout and site plan—function to allow inhabitants themselves to become key agents in ensuring their security'. Territoriality which demands a clearly defined 'ownership of space using both symbolic and real barriers' (Newman 1972), in turn, rests on a notion of security which is usually understood to mean exclusion rather than inclusion (Reynald 2010, 2019). This approach incorporating exclusive territoriality and security is increasingly facilitated by smart technologies and big data analysis (Flusty 2001; Townsend 2013). The gated and guarded apartment complexes in Seoul can be seen as direct contradictions of the invisible and visible social controls espoused by Jane Jacob's (1961) well-known advocacy to build and defend one's community from crime by watchful neighborliness or 'eyes on the street'.

Technology is often portrayed as apolitical and neutrally rational, yet scholars have pointed out the hidden social nature shaping technology (MacKenzie and Wajcman 1985; Wajcman 2002; Datta and Odendaal 2019), in which socioeconomic patterns are inherent in 'the content of technologies' and the 'processes of innovation' (Williams and Edge 1996: 886). Smart technological solutions have been criticized for their neoliberal tendencies as they are often market-driven and thus profit-oriented, leading to prioritizing economic concerns over social inclusion and neighborliness (Schuilenburg and Peeters 2018). Technology facilitates the smart use of resources and helps to promote safety by keeping unwanted people and things out while providing an additional layer of protection for those 'inside' of gates and walls.

There are relatively few studies on either the visible (physical) or invisible (technological) control features of the gated Korean apartment complex. Kim (2011) examined the correlation between fear of crime and fortification of apartment complexes and found no clear reduction of fear with security provided by market solutions, such as CCTVs. Kim and Choi (2012) examined the safety and prestige aspects of Blakely and Snyder's typology (1997) represented in the Korean apartment complex. They associated safety with security, such as the number of guards at the entrance, CCTVs, types of automatic control systems, and barricades. These were related to the convenience of parking management and securing privacy. Prestige was categorized as the socioeconomic status of residents, who share a sense of superiority over 'others'. Kim and Lee (2020) looked at social sustainability by comparing three apartment complexes with varying levels of barriers and found that social segregation with adjacent neighbors increased as the extent of exclusiveness increased.

Concerning the design of physical control, Hwang and Kim (2020) examined the increasing exclusiveness of gated apartment complexes focusing on the boundary designs of 28 gated apartment complexes in Seoul. Their findings show that control of access has intensified with more numerous layering of boundary elements, and tightening control of pedestrian and vehicular access. Kim (2015) divided the physical barriers found in thousand apartment complexes in Seoul into four types and traced their evolution from the 1970s to the present.

3 The Fortressing of the Apartment Complex in Korea: Two Case Studies

The two apartment complexes examined in this paper are in the Gaepo area, Seoul. Gaepo was initially designated as one of the Korean government's 'Land Readjustment Project (*Tojiguhuwekjungrisaeup*)' based on 'Land Compartmentalization and Rearrangement Projects Act' in the late 1970s. In the early 1980s, the site was merged with another layer of a housing project called 'Housing Site Development Project (*Taekji gaebal saeup)* to promote apartment complexes in the residential development (Fig. 1). The purpose of these government-driven development projects was to supply massive housing in the outskirts of Seoul. Presently in 2022, the Gaepo area is composed of a homogeneous upper-middle class, with high land and housing prices due to exceptional educational infrastructure, forming a relatively safe neighborhood. Forty years after the initial development, a major redevelopment of the aging apartment complexes is in process. Currently, high-rise, high-density new apartment complexes constructed mainly by the private sector are replacing the original low-rise apartment complexes supplied by both the public and private sectors.

'Hanbo Mido Mansion', hereafter called HMM, is an apartment complex constructed in 1983 and remains in its original form until today. 'The H Honorhills', hereafter called THH, is a newly built luxury apartment complex. It is standing on the site previously occupied by the 'Gaepo Jugong #3' apartment complex, hereafter

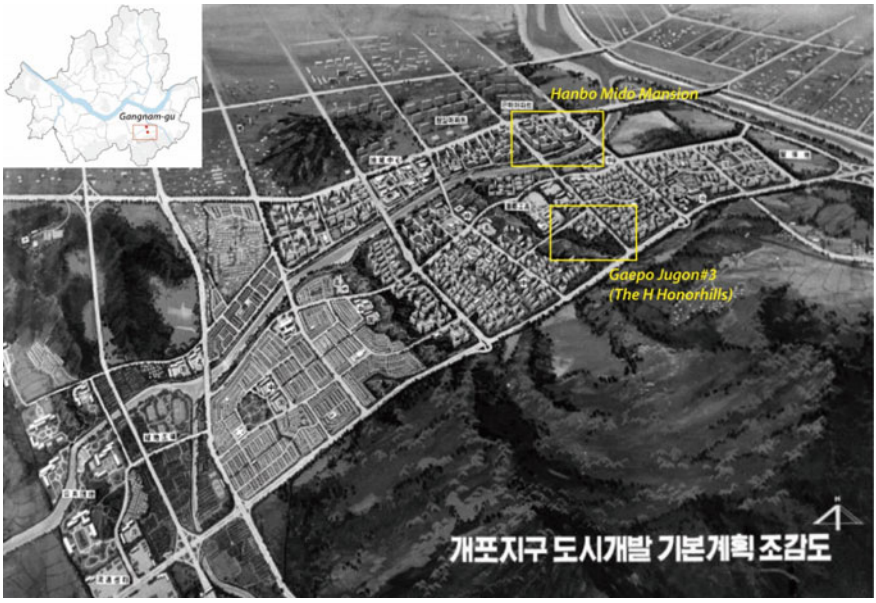

Fig. 1 Two cases located within the Gaepo Housing Site Development Project. *Source* Seoul History Museum (2018: 57)

Table 2 Description of two case studies

	Case 01	Case 02	
	Hanbo Mido Mansion (HMM)	Gaepo Jugong #3 (GJ#3)	The H Honorhills (THH)
Construction company	Hanbo Housing Corporation (private sector)	Korea National Housing Corporation (public sector)	Hyundai Construction Corporation (private sector)
Built year	1983.11.28	1982.11	2019.08.29
Site area (m^2)	193,082	64,293	57,329
Household	2,436	1,160	1,957
Building type & arrangement	Flat-type Parallel row layout	Flat-type parallel row cross layout	Tower-type Dot layout
Building story	14	5	2–33
Number of buildings	21	28	24 (18 ancillary bldgs.)
Parking lots	2,906	–	2,120
Floor Area Ratio	179%	75%	249%
Building Coverage Ratio	15%	–	19%
Sales price (2022.5)	2.9–4.9 billion KRW (2.2 million-3.8 million US$)[a]	–	1.9–5.3 billion KRW (1.5 million–4.1 million US$)*[a]

[a]Exchange rate as on 13 August 2022
Source Hanbo Mido Mansion internal document; Naver Real Estate (www.land.naver.com)

called GJ#3, a low-rise public housing, initially constructed in 1982 by the Korea National Housing Corporation (Table 2).

In the early 1980s, HMM and GJ#3 were built within one year of one another. However, HMM was constructed with higher density by Hanbo Housing Corporation, a private sector developer (Fig. 2). HMM housed double the total household number compared to GJ#3, public housing built for lower-income residents by the Korean National Housing Corporation. It was composed of 28 five-story apartment blocks compared to HMM's 21 14-story blocks. Both HMM and GJ#3 consist of flat-type blocks arranged in parallel rows. Some of the apartment buildings in GJ#3 were planned perpendicular to the parallel layout to fit within an irregular-shaped compound boundary (Fig. 3).

In the 2010s, most of the public housing developments in the Gaepo district were severely dilapidated and nearing obsolescence. Reconstruction plans were drawn up in the early 2010s. One after another, the redevelopment of old apartment complexes underwent drastic transformations, with GJ#3 being one of the earlier apartment complexes to be rebuilt by Hyundai Construction Corporation, a private sector developer in 2019. A new high-end apartment brand 'The H' was established to provide a distinguished prestigious lifestyle (Fig. 4). The brand presents luxurious

Fig. 2 Hanbo Mido Mansion apartment complex (1983). *Source* Naver Map Aerial Photography (www.map.naver.com) (left image) and View of the HMM (©Soe Won Hwang) (right image)

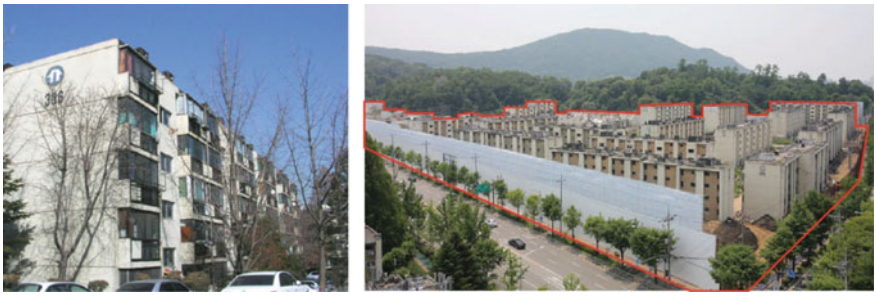

Fig. 3 Gaepo Jugong #3 apartment complex (1982). *Source* Maeil-ilbo (Maeil Newspaper-www.m-i.kr) (left image) and Chosun.com (Chosun Newspaper-www.realty.chosun.com) (right image)

community amenities, such as exclusive residents-only sky lounges, terrace houses, panoramic views of the surrounding city and adjacent mountains, and expensive artworks displayed in the community center. Throughout the complex, maximum privacy was guaranteed by fortified surveillance systems consisting of ubiquitous CCTVs, alarms, and the commissioning of a professional security agency for 24-h guarding duty.

4 Reinforced Visible (Physical) and Invisible (Digital/Technological) Gating Strategies

4.1 Additive Gating and Surveillance Strategies of Hanbo Mido Mansion

HMM is a large apartment complex, planned with a flat-type building arranged in parallel rows with ground-level parking (Fig. 5). Being almost forty years old, it has

Fig. 4 The H Honorhills apartment complex. *Source* © Soe Won Hwang (left image) and © Ji-Young Park (right image)

only basic community amenities, such as a low-rise shopping center, a management office, a senior community center, tennis courts, and some religious buildings. When HMM was completed in 1983, its compound boundaries were demarcated by low brick walls. In addition, guard posts were placed at each entrance of the apartment building block (3 ~ 4 locations for each building). These safety measures were reinforced over time as HMM installed more physical and digital/technological systems for safety and security purposes. The main purpose was to control trespassing, parking of unauthorized non-resident vehicles, and prevention of car accidents or theft.

HMM first installed a vehicle barrier gate at the main entrance in 2007, followed by another one at the back gate in the following year. The front gate allows residents to drive through, whereas visitors must stop at the security guard post, where they are required to provide detailed information regarding the purpose of the visit as well as the residence to be visited. The back gate can be used only by residents who are registered with the management office. The main reason for installing the vehicle barrier gate seems to be due to frequent unauthorized parking by non-residents, causing inconvenience and safety issues for residents. In addition, the increasing cars per household ratio resulted in chronic parking issues, which were barely resolved by converting one of the eight playgrounds (total area of 4,500m^2) into a parking space (625m^2) in 2007. In 1983, there were 1,400 parking spaces with only 892 cars registered. By 2006, the parking spaces were increased to 2,990 spots for the registered 2,658 cars. However, the shortage of parking spaces has become more severe. Currently, there are 3,013 parking spaces for 4,492 registered cars. To alleviate this situation, digital technology has been implemented.

CCTVs were first installed in 2003, mainly as a response to occasional theft and burglary. Trespassing strangers and parking issues also raised the need for technological surveillance among residents (Fig. 6). However, intensifying parking space shortage and increasing incidences of unauthorized parking led to the installation of additional CCTVs. In 2012, 104 CCTVs were installed, followed by 73 more in 2019. The total number of CCTVs in 2022 amounts to 211. In 2008 and 2009, automatic entrance control systems were implemented at the apartment building entrance.

Fig. 5 Original plan of Hanbo Mido Mansion apartment complex (November 1983). *Source* Hanbo Mido Mansion management office

Residents gain access by entering a password; all non-residents must call residents to let them in remotely. Digital or other technological control has been fortified over time, consequently leading to fewer security guards required to be on duty. Starting from 136 guards in 1983, there are currently 106 guards remaining in 2022.

Vehicle barrier at the complex entrance

Common entrance control system

Outdoor CCTVs

Fig. 6 Additive gating and surveillances in HMM. *Source* © Soe Won Hwang

4.2 A Total Package: Integrated Gating and Surveillance Strategies of the H Honorhills

From the early 1980s, the Korea National Housing Corporation provided low-income housing and civil servant housing in the Gaepo area. These large-scale apartment complexes included GJ#2 and GJ#3, situated at the intersection of 'Gaepo Neighborhood Park (100,000m^2)' that connects walkways to adjacent *Daemosan* Mountain (Fig. 7). Most of the original low-rise public housing built as part of the 'Housing Reconstruction Project (*Jutaekjaegeunchuksaeup*)' was replaced by prestigious high-rise, high-density apartment complexes provided by the private sector (Fig. 8). THH is a flagship for Hyundai Construction Company's new ambitious up-scaled brand that promises 'hotel-like housing', avant-garde museum-like apartment complexes', and 'prestige' living style environments.

THH has definite boundary demarcations; it not only involves a raised ground level but also strategically planted vegetation wall and landscaping which separate public pedestrian paths running along its boundaries. Two years after the completion of the complex in 2019, the Residents' Association for Redevelopment collected 2,500 residents' signatures to reinforce the fencing and install a residents-only key cards system to control entry to the apartment complex. This was because hikers were constantly passing through the complex to reach *Daemosan* Mountain. Residents were also complaining about non-residents using the community facilities, such as the sky lounge, without permission. There were frequent reports of damage to community facilities or landscaping features. The additional fencing and control of access fortified the exclusive nature of an already privatized enclave (Fig. 9).

As one of Seoul's most state-of-the-art apartment complexes, THH was designed with a holistic and self-sufficient system of physical and digital fortification. Luxurious community amenities include a rooftop sky lounge, cutting-edge sports programs, a multi-leveled indoor golf facility, a gymnasium, a swimming pool, a fitness center, a community library with multiple meeting rooms, a common cafeteria, outdoor terrace and seating, and playgrounds designed by a world-famous specialist. These are distributed within the complex, only accessible by residents-only authorized key cards. Certain community programs, such as pilates, yoga, or swimming classes, are charged by monthly fee to the resident card. CCTVs are embedded in all corners of the indoor and outdoor spaces, including in the underground parking area. These areas can be monitored by each household via the home-automation system's television channel or cell phone app. The residents' vehicles need to be registered with the management office to pass through the main vehicle barrier gate. All visitors are required to pre-register before gaining entry (Fig. 10).

Fig. 7 Gaepo Jugong #3 apartment complex. *Source* Kakaomap 2018 aerial photo

5 Discussion

Over the past half-century, active construction of apartment complexes was promoted through diverse housing policies and development projects to supply the massive housing demand in Seoul. Coming into the 2000s, housing reconstruction projects particularly aimed at replacing obsolete low to mid-rise apartment complexes with high-rise, high-density apartment complexes with an additive luxurious branding strategy. Through this high-end marketing competition by the private sector, reconstructed apartment complexes show an increasing tendency to fortify their physical territory and reinforce digital surveillance. In this study, two apartment complexes are selected that were built in the 1980s under the Housing Site Development Project. Hanbo Mido Mansion (1983) remains its original physical environment, whereas DH

Fig. 8 The H Honorhills apartment complex. *Source* Kakaomap 2018 aerial photo

Vehicle barrier at the complex entrance

Fence and key card accessible gate

Key card accessible community facility area

Fig. 9 Total packaged gating and surveillances in THH. *Source* © Soe Won Hwang (left & middle image) and © Ji-Young Park (right image)

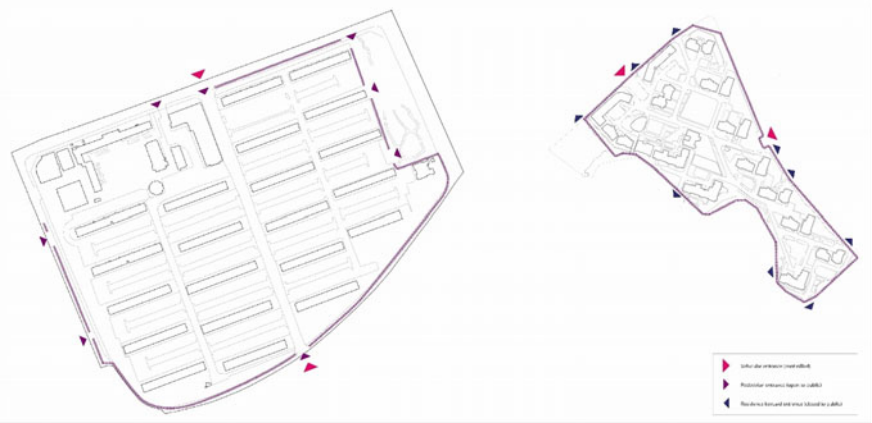

Fig. 10 Comparison of entry points to apartments complexes (left) Hanbo Mido Mansion (1983) (right) The H Honorhills (2019)

Honorhills (2019) replaced the old Gaepo Jugong #3 (1982) as a whole new luxurious apartment complex.

Both apartment complexes show increased fortressing through physical and digital (technological) means (Figs. 11 and 12). HMM, being approximately 40 years old, deploys additive layering of gating strategies over time. Access by the non-residents is controlled through symbolic demarcations of the boundary, vehicle barrier gates, and CCTV surveillance installed at each building entrance. However, CCTVs were kept to the outside, except those in elevators. Non-residents are free to use the community facilities; the shopping center was originally planned to be open to the public.

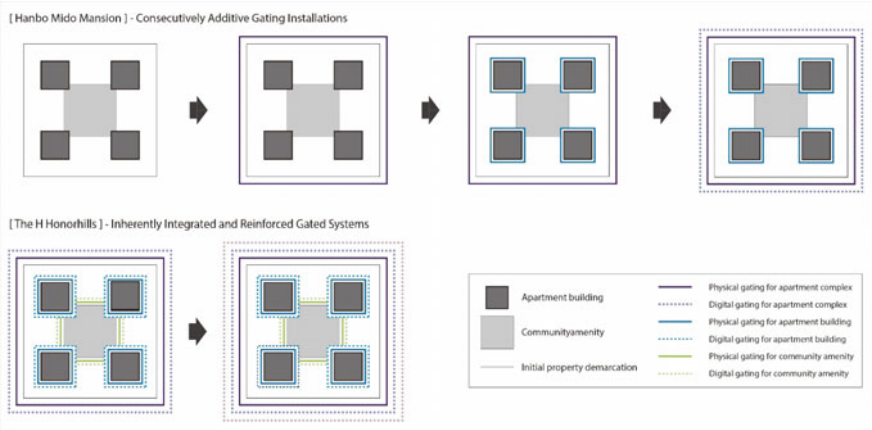

Fig. 11 Additive gating model vs. Integrated total package

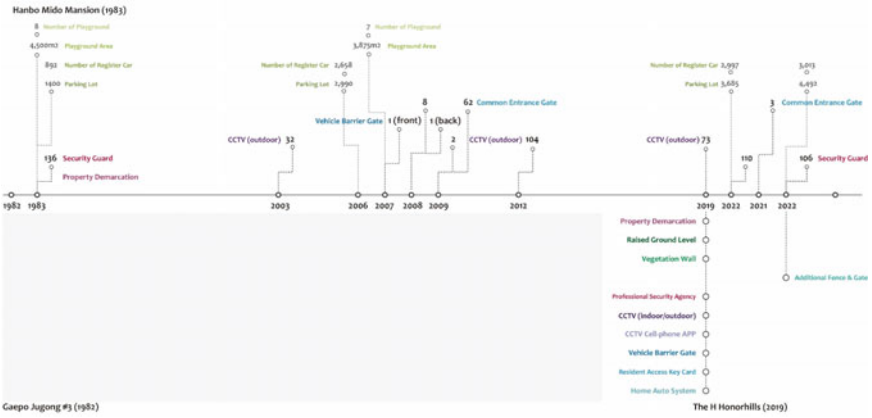

Fig. 12 Physical and digital fortressing timeline of the two case studies

In contrast, THH is a total package of fortification with embedded surveillance and security system, conceived from its initial building design stage. The apartment complex not only has various exclusive physical gates to control external access but also has multi-layered digital and technological barriers to further detect any intrusions or trespassing. Security contributes to a sense of greater prestige for residents living in THH. By offering special privileges only accessible to residents and maintaining multiple verification procedures, the residents have a reinforced sense of being an 'insider'.

Reflecting on the causes for such extensive systems of defense and exclusion, it is stated that, initially, the occasional theft and burglary led to the installation of the vehicle barrier. Over time, as parking spaces become more valuable to residents, these barriers are mainly serving to prevent unauthorized parking by non-residents. The reason for the increasing number of CCTVs also seems to be the reservation of a limited community resource, namely parking spaces, for residents. Regarding the prevention of trespassing by strangers, non-residents are unrestricted in their movement in HMM if they are on foot. Thus, even with reinforcements in physical and technological barriers, the boundaries of the complex remain relatively porous.

The case of THH is another matter, however. Even with a well-designed total package of surveillance and digital controls of entry, the residents increased the level of fortressing of their apartment complex. Even though the main cause seems the allocation of club goods and services as in HMM, it differs in the level of tolerance of outsiders and the sense of defending their territory. What is remarkable is the commercial nature of the community facilities. The use of the study rooms, meeting rooms, and cafeterias are not free but are charged to their resident card, leading to different levels of access for people with different levels of economic power. Thus, control of access to spaces and services is exerted on residents as well. Also, residents are subjected to panoptic surveillance wherever they are in the complex.

Studies show residents from similar socioeconomic statuses, occupations, and educational backgrounds prefer to live together in the same apartment compounds (Jun 2009; Park 2013). Despite the differences in the amenities and ages of the two compounds, both apartments are in the same price range (see Table 2). The high sales and rental prices of the two deter all but those belonging to the same upper-socioeconomic class from residing there. Then why do the residents of THH exhibit such extreme guarding of their residential micro-territories and club goods? This 'voluntary exclusion' (Le Goix and Webster 2008) may indicate a 'hardening' of segregation of the affluent groups from the rest of the city as the Gaepo area has become more socially and economically homogeneous compared to its initial development purpose of providing mass housing. With the demolition of GJ#3 and other public-sector housing being replaced by the exclusive private-sector housing in the Gaepo area, the socioeconomic diversity with a mix of a range of middle-class housing has largely disappeared. Government housing policy has been replaced by the logic of a neoliberal market-driven economy where private developers provide quality spaces and privatized services restricted to the residents (Schuilenburg and Peeters 2018). In some sense, it can be seen as a privatization of the Gaepo area, except for public infrastructures, such as roads and public green spaces.

Urban design and technology have contributed to this privatization of space by adding to the privatization of security. CCTVs, residents-only authorized key cards, and home-automation systems among others are all smart solutions that are included in the sales price of the newly developed apartments. Instead of promoting social inclusion and a sense of community with the larger neighborhood, technology, and urban design are used to segregate and separate through visible and invisible means. In essence, these citadels turn their backs to the street, creating inward-centered private spaces, and preventing meaningful interactions between the public and the private spheres by cutting off pathways to neighborhood parks and adjacent mountains.

A major incentive for guarding club goods seems to be the reluctance to share limited resources, such as parking, libraries, and sports facilities. For example, HMM shows that the shortage of parking for residents has been the initial impetus for installing vehicle barrier gates. In this aspect, providing sufficient public parking may reduce a major reason for technological and physical fortification. The countermeasure for this relentless privatization of space may be stronger public intervention by prioritizing 'use value, not just exchange value, and as such to consider the social consequences of urban design' (Madanipour 2017: 162). Positive public-sector intervention with a clear purpose should be based on a long-term vision for a more inclusive city. As such, urban design and smart technology should be harnessed to create connections rather than disconnections. Aided by smart technology to involve the public in the government effort couples with innovative urban design ideas to build sufficient public parking, greater incentives for building good quality mixed-income housing, and providing more affordable facilities and public services may stem the tide of privatization and segregation in the long run.

The control of access through physical and digital measures is an expression of power derived from surveillance and exclusion. Gates, fences, and barriers were

once reinforced by panoptic design to control inmates in prisons and hospitals. Reinforced by technology, the power is turned both out- and inwards to determine who is an 'insider' or an 'outsider'. Schullenburg and Peeters (2018: 8) have remarked that 'perhaps the most controversial manifestation of this architectural policing is "defensive" architecture strategies … intend to "design out" unwanted behavior…" Perhaps it is time to reflect on Vale's (2005) observation that "the perennial questions—'Secure from what?' and 'Secure from whom?'—keep yielding shifting answers'. Perhaps it is a good opportunity to pause and reflect not only on the relentless privatization of space but also on rephrasing the question to 'secure with what?' and 'secure with whom?'. Maybe the next step is to use technology and urban design to develop a new framework of more 'offensive' strategies for inclusion and 'drawing in' more people to meet in public spaces.

The findings of this study are difficult to generalize for all exclusive apartment compounds in the Gaepo area because it has looked only at two cases. Furthermore, there are limitations to the research as it does not include empirical research methods, such as interviews and surveys, to find the causes for the increased fortification. Nevertheless, this study is meaningful, because it looks at social segregation as manifested in the physical environment with the aid of advanced technology. Further studies of this social and physical fragmentation of space with a larger number of apartment compounds in the wider Gaepo area will be conducted to see whether the findings of this study have wider application.

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Inclusion, Exclusion, and Participation in Digital Polis: Double-Edged Development of Poor Urban Communities in Alternative Smart City-Making

Kon Kim

Abstract Information and communication technology (ICT) has gained global prominence as an enabling tool for advances in the twenty-first century human settlements. However, the redistribution of ICT is uneven, creating a gap between demographics and regions with different levels of access to ICT. In an uneven context, the urban poor are often excluded from government-led smart city projects because of their inability to use and benefit from ICT. Instead, the urban poor have made volunteer efforts to create an alternative smart city-making model by collaborating with radical social groups outside the institutional smart city framework. Against this backdrop, this study aims to examine the nature of the alternative efforts of the urban poor by narratively exploring how their efforts have affected their power dynamics and social infrastructure across the institutional boundaries of smart cities. The results show that the urban poor can create new forms of social infrastructure through radical intermediary interventions. It is certain that social infrastructure serves to improve communal autonomy, build a self-governing system, and thereby create a model of alternative smart-city-making practices, albeit within limits. However, at the same time, this study also contends that radical intermediary intervention can lead them to isolation from official partnerships with the public as well as the private sector because it remains improvised, provisional, and tactical. Consequently, improved communal autonomy may be undermined or even destroyed, while their self-governing system operates only within the limited network closure with little or no institutional support or protection. In this respect, this study argues that this critical point is central to the development of poor urban communities whose communal sustainability continues to be challenged by those with statutory power in the alternative placemaking of digital polis.

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Keywords Digital polis · Alternative city-making · Digital divide · Social infrastructure · Human smart cities

1 Introduction

The fabric of contemporary cities and human settlements is mediated by information and communication technology (ICT) and other technological systems. Manuel Castells (1989) captures this idea using the concept of informational cities that are constructed in a complex interplay between two types of space: the space of places and the space of flows. The space of places is the traditional physical world of neighborhoods, where people's experiences and activities are organized around the confines of their locality (Castells 2020, p. 85). The space of flows is a nonphysical world that links separate locations through electronic communication that connects activities and people in distinct geographical contexts. Such competing logics of the space of places and flows are both foundational for the growth of what is referred to as a "smart city" (Cocchia 2014). In other words, a smart city does not appear in virtual networks but is transformed at the interface between physical and electronic interactions across the combined space of places and flows. A growing body of literature on smart cities argues that technology does not guarantee the smartness of cities because it does not automatically make people think or act smartly (Hollands 2008; Nam and Pardo 2011; Willis and Aurigi 2017). This argument calls for the consideration of how people reclaim technologies by utilizing social infrastructure (or soft infrastructure), such as collective identity, intelligence, and capability, beyond digital infrastructure (or hard infrastructure), such as broadband networks and cloud computing platforms.

Such an approach to smart cities recognizes its potential as a discursive space rooted in place-based communication, which is linked to the concept of Greek "polis," as a social form based on communication between individuals who construct collective knowledge by taking political actions (Murray 1996). In ancient Greece, the state and society were merged into one entity, the polis, which was an organic association of citizens whose authority governed every aspect of their lives under the rule of law (Cohen and Arato 1992). The Greek polis was a form of government in which equal citizens could supervise their government directly. Hence, it entailed autonomous political and collective bodies, such as specific collegial assemblies of conscious citizens. Thus, the term "polis" can be conceptualized as a special species of society of self-regulating individuals or self-governing communities that can grow in the form of a debate-based democracy (Anderson 2009; Oniszczuk 2019). Putting this into networked communication technologies, the polis is a conceptual foundation for communicative and political interaction among people across physical and mediated urban spaces, and for their creative and symbolic dimension of the social world, social imaginaries (Iveson 2007; Thompson 1984), which create ways to represent their collective life. This means that the polis can represent a society or space where the community-oriented value in a smart city can be better captured by foregrounding

its social infrastructure over digital infrastructure. Instead of the digital or smart city, therefore, this chapter coins and uses the term "digital polis" for a more nuanced articulation of its participatory and alternative orientation toward the construction of a more socially just and politically inclusive digital built environment mirroring the Greek polis.

In digital polis, the diffusion of both social and digital infrastructure largely remains uneven at all scales (Angelidou 2014), leading to the creation of a digital divide, which is the gap between those with access to ICT and those without (Graham 2002; Hilbert 2011; Ragnedda and Muschert 2013; Van Dijk 2020). As argued by Graham (2002), the digital divide generates an unbalanced supply and consumption of digital information or resources, thereby worsening the existing inequality and injustice in everyday urban life. This means that the digital divide can negatively impact the economic, social, political, and even personal capabilities of urban populations, particularly in deprived areas. It should be noted that the digital divide is no longer only a matter of different access to ICT. While the gap in access to ICT has gradually been bridged, different economic and social disparities have widened the gap in the motivations, skills, and capacities of traditional information have-nots to benefit from ICT (Mutsvairo and Ragnedda 2019). In other words, the urban population in deprived areas could hardly make full use of ICT despite improved access to ICT itself across the digital polis.

Such considerations require a close look at the digital divide beyond the limited dimension of physical accessibility. Recent academic attention has been paid to a wide range of dimensions of the digital divide: people's motivations, skills, and capabilities to convert the advantages of ICT into concrete and tangible outcomes in their everyday lives (McCarthy 2016; Ragnedda 2017; Robinson et al. 2015; Van Deursen and Helsper 2015). For instance, in the field of community development, multiple dimensions are often used to delineate why the urban population in deprived areas can utilize accessible ICT (Kolotouchkina et al. 2022; Najafi et al. 2022; Wamuyu 2017). However, a more fundamental question, "What correlational links do the institutional policies and strategies have with the multiple digital divides and how do they affect community practices of benefiting from the ICT," remains unresearched. This highlights the need for a more nuanced understanding of the complex influences of the institutional system on the creation of the multiple digital divides, which can help to identify complex dynamics behind alternative placemaking of the urban poor in the digital polis.

In this respect, this chapter aims to examine the nature of the development of poor urban communities in their placemaking practices as alternatives to institutional forms of smart city-making practices by investigating the multiple dimensions of their digital divide, underpinning the formation of their collective identity, intelligence, capability, and social infrastructure. Hence, it tackles the research gap identified above by addressing the following questions: (1) *How do the urban poor construct social infrastructure across institutions in a digital polis?* (2) *Can building social infrastructure contribute to the sustainable development of poor urban communities in the institutional domain of the digital polis?* For this study, a qualitative case study

approach was used to capture the knowledge and truth socially constructed in a real-life setting: social facts (Durkheim and Lukes 1982). Two data collection methods were used to collect social facts: documentary collection and in-depth interviews. A documentary collection method was used to review general issues about the urban poor's alternative placemaking, while an in-depth interview method was used to conduct intensive individual interviews with a small number of key informants to analyze and interpret collective norms, values, or beliefs regarding their alternative approaches in the digital polis.

2 Conceptual Framework

2.1 Digital Divide and Institutional Domain of Digital Polis in South Korea

South Korea (hereinafter, Korea) has led technology-driven smart city initiatives with institutional support since the early 2000s. The Ubiquitous City Construction Act (hereinafter, the U-City Act) was established in 2008 to effectively resolve the transport, environmental, and health-related issues of cities in Korea (Choi et al. 2020). Subsequently, a nationwide project of the "Comprehensive Master Plan on U-City" was launched and financed by the Ministry of Land, Infrastructure, and Transport. The aim of the project was to advance official guidance, regulation, and evaluation of the planning, construction, and management of U-City, thereby creating a new institutional framework (Lee et al. 2009). Between 2009 and 2013, approximately KRW 55 billion (USD 45 million) was invested to formulate concrete strategies to foster new growth models and spread them both domestically and abroad by experimenting with pilot studies in over 70 new towns nationwide (Choi et al. 2020). During the nationwide project, many local governments could develop ICT-based infrastructure, such as bus information systems, automated waste collection systems, and intelligent video surveillance systems, in their new development areas.

However, the U-City project began to plateau in 2014, when the overall tone of urban development policies changed from new development to regeneration. This is because the new ICT-based infrastructure was made possible with financial resources from sizable taxes on new development gains (Kim and Lee 2020). Therefore, the U-City Act was reformed and renamed the Smart City Promotion Act (hereinafter the Smart City Act) in 2017. The Smart City Act enabled the inclusion of more diverse stakeholders and created more local-based strategies or programs at different scales by encouraging the participation of small-medium-sized enterprises as well as big tech companies and emphasizing the development of social infrastructure beyond digital or physical infrastructure. Based on the Smart City Act, many local governments have attempted to apply ICTs to improve old downtowns and develop new towns by integrating them into new urban regeneration programs (Jo 2020; Kim and Cho 2019; Park 2019). The Seoul Metropolitan Government (SMG) is an

example. In Seoul, a sustainable smart city scheme was established in 2017 and the Urban Digitalization Action Plan was created in 2019 (Lim et al. 2020). In this new institutional context, SMG has made extra efforts to localize the Smart City Act by introducing novel ideas, such as smart governance, smart administration, smart living, and smart people underpinning social infrastructure in its planning (Byun et al. 2018; J. Kim et al. 2021a). Consequently, Seoul has seen a growing number of new small- to medium-sized neighborhood improvement practices associated with ICT, such as urban living labs or crowdsourced digital platforms in the new framework of smart urban regeneration (Lim et al. 2020).

Nonetheless, such smart city regeneration approaches remain patchy and marginal in Korea's mainstream planning because of the existing economic and social disparities in the digital context of policy implementation: the digital divide (Byun et al. 2018; Jang and Gim 2022; Shin et al. 2021). Korea is one of the best-connected countries worldwide with high-speed Internet networks, where its broadband households reached 86% in 2020 and its Internet penetration rate stood at 96.5% in 2021 (OECD 2022; The World Bank, n.d.). Although the broad dissemination of smart devices has promoted physical access to the Internet, traditional information have-nots still lack the ability or skill to utilize smart functions and obtain more appropriate information (Lee 2016). This means that the digital divide in Korea is not only a quantitative adoption of digital devices but is also associated with their qualitative use. This qualitative aspect of the digital divide points toward its emotional or intangible dimensions, such as motivations, aspirations, and people's willingness to gain advantages from digital-related urban policy implementation. Given this, the digital divide here is a matter of how existing economic and social disparities would influence smart city-related practices, particularly in deprived urban neighborhoods.

Notably, such a digital divide is (re)produced in the official smart city framework with institutional support from the state and its technocratic apparatus (Jang and Gim 2022; Kim 2022; Nam and Pardo 2011; Park and Jae Kim 2014). This means that central to the digital divide is the top-down approach to policy innovation that would often prevent the traditional information have-nots from active engagement in the new policy implementation while requiring them to be equipped with administrative skills. Hence, in the government-driven smart city framework, urban communities that remain powerless under the top-down participatory mechanism should emerge. Considering this point, it is worth conceptualizing the power dynamics underlying powerless smart city-related practices as an alternative to government-driven smart city projects. For the conceptual foundation, the following section provides a brief exploration of the ideas of counter-hegemonic change and the right to the city in the context of digital polis.

2.2 *Counter-Hegemonic Change and the Right to the City in a Digital Polis*

The concept of hegemony was first formed in the Marxist context of the conflict of interest between the bourgeois (dominant classes) and the proletariat (subaltern classes). According to Antonio Gramsci (1929), hegemony is a type of domination based primarily on the consent of dominant groups rather than purely on a leader's coercion and exerted force. He stressed that domination is produced and reproduced by those who develop their own principles, rules, and norms as commonsense values. Hence, central to hegemony is the dominant group's manipulation of the value system, which determines the set of beliefs and attitudes of each individual. In this vein, Gramsci distinguishes between political society and civil society; the former is the realm of force, and the latter is the realm of consent. His key argument is that "consent is not the spontaneous outcome of free choice"; consent is manufactured, albeit through extremely complex media, diverse institutions, and constantly changing processes. Furthermore, the power to manufacture consent is not evenly distributed in society (Buttigieg 1995, p. 7). This suggests that civil society is not a sphere of freedom but of hegemony, with consent that is manufactured—as opposed to coerced—by those with power: the dominant groups.

However, Gramsci points out that civil society has a revolutionary potential, "disabling the coercive apparatus of the state, gaining access to political power, and creating the conditions that could give rise to a consensual society wherein no individual or group is reduced to a subaltern status" (Buttigieg 1995, p. 7). Such revolutionary potential generates a "counter-hegemony" against the dominant value system. Unlike hegemony, counter-hegemony can be understood as the way people develop ideas to challenge dominant norms, values, and beliefs that exist external to the individual and affect individual behaviors. Hence, a counter-hegemonic change is made while the previous hegemony is deconstructed and the new hegemony for the interests of subaltern groups is reconstructed. It is important to note that counter-hegemonic change entails the formation of horizontal alliances seeking to build a broad network structure against the old hegemonic historical bloc. Horizontal alliances include bottom-up organizations such as community-based organizations, trade unions, human rights groups, and professional associations. While strategically intervening in the dominant value system, horizontal alliances make the existing power dynamics flexible and adaptable to domination, subordination, resistance, and emancipation beyond the fixed power relationship. In this light, counter-hegemonic change is seen as a delicate balancing act between co-option by the dominant groups and subversion by the dominated.

Such concepts of hegemony and counter-hegemony provide a useful philosophical basis for interpreting progressive approaches to the spatial practices of cities (Harvey 2003; Jacobs 1961; Lefebvre 1968; Marcuse 2009; Purcell 2003). Henri Lefebvre (1968) conceptualized the socio-political dynamics in spatial production processes by urbanizing the analysis of hegemony in modern times. He introduced the concept of the *right to the city* against the capitalist production of space by exploring the

political aspects of urban space produced by a bureaucratic capitalist system. For him, *the right to the city* is not only a right to access what already exists in the city but also a right to change it (ibid.). This means that the concept is not merely individual liberty to access the resources that the city embodies. Rather, it is a multitude of rights, which include the right to difference, the right to participation, and the right to change the ways the city grows and develops. In this respect, the *right to the city* is about the ability to exercise "a collective power to reshape the processes of urbanization" (Harvey 2008, p. 23). Putting together the Gramscian concept of counter-hegemony, it is the *right to the city* that can form the basis for alternatives to dominant power relations in the production of new urban spaces.

Putting this into the context of digital polis, the Lefebvrian conception is not confined to the right to simply access ICT-based services but is extended to the right to (re)produce them, which can cultivate new social relations among those who participate in smart city-making across its institutional boundaries. This novel understanding of the Lefebvrian approach is linked to what is referred to as the "*right to information*" (Shaw and Graham 2017). *The right to information* is a holistic approach to improving the quality of everyday life in a digital built environment by combining the space of places and flows through the complex intersection of human settlements and ICT (Castells 2020; Graham 2002). In this logic, particular attention is given to what people can do with the information they have rather than the information they can access. Accordingly, it enables us to move beyond the production of things in space to the production of space itself in a new knowledge society with ICT.

Such a new mode of the right to information resonates with what has recently been put into the spotlight: the right to the smart city, where people can control the urbanization process and institute new modes of urbanization by promoting alternative and more cooperative models of communal service provision against digital capitalism (Cardullo et al. 2019; Foth et al. 2015; Willis and Aurigi 2017). However, the right to the smart city does not necessarily guarantee socially just and politically inclusive production of space, because technology is never neutral but has the potential to be used socially and politically for different purposes (Williams 1990). For example, as argued by Shaw and Graham (2017), the right to the smart city is easily challenged and threatened by big technology companies such as Google, Facebook, and Amazon, or governmental bodies in cooperation with such companies, which form technology monopolies. Consequently, counter-hegemonic change for more inclusive smart city-making may remain deadlocked because the power dynamics remain unchanged with the code, consent, and control of those rooted in and driven by digital capitalism rather than community mobilization.

It has become more evident in deprived urban neighborhoods where residents are more vulnerable to digital capitalism, leading to the deterioration of their intangible and emotional dimensions of the digital divide (Fuchs 2021; Pieterse 2010; Schiller 1999). In this sense, Lefebvre's revolutionary idea in the context of digital politics calls for consideration of three distinctive and successive elements of civic rights: (1) the right to reclaim ICT from digital capitalism; (2) the right to build a self-governing system to (re)produce ICT-based services; and (3) the right to establish a

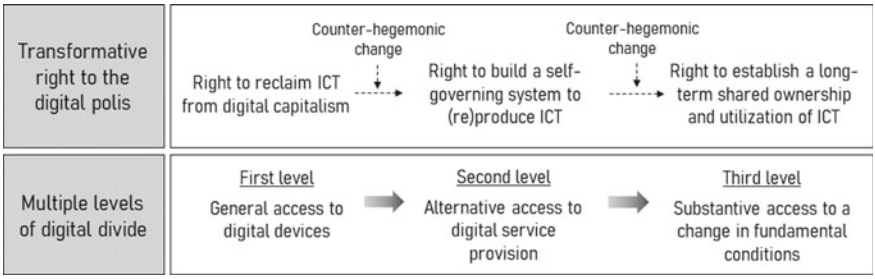

Fig. 1 A conceptual framework of the right to the city in the digital polis. *Source* Author

long-term shared ownership and utilization of ICT-based services away from digital capitalism. These three modes of civic rights and the multiple levels of the digital divide can be conceptually combined and serve to draw a comprehensive development structure of the right to the digital polis. Figure 1 shows the conceptual framework of the transformative right to the digital polis by articulating the notions of counter-hegemonic change and the digital divide (Fig. 1).

In Fig. 1, for the urban poor in Korea, general access to digital devices can be obtained by securing the right to reclaim ICT with support from non-state and non-profit organizations beyond the influence of technology monopolies. However, it may often remain tactical or provisional because of external support that is informal and unofficial outside institutions. Such a progressive approach would encourage them to pursue the right to build a self-governing system to (re)produce reclaimed ICT. This new right may serve to address the second level of the digital divide by creating alternative access to digital service provision by themselves. While having a more radical disposition, it is transformed into the third right to establish long-term shared ownership and utilization of ICT to build more revolutionary counter-hegemonic power away from digital capitalism. However, such transformative rights to the digital polis do not necessarily bridge the third level of the digital divide: intangible and emotional dimensions of people's motivations, skills, and capabilities, because it hardly fills the existing economic and social gaps of the urban population and rather deepens them. Such a conceptual framework can help with a more nuanced and analytic understanding of the changing power dynamics and social infrastructure constructed through small- to medium-sized smart city-related practices by poor urban alternatives to government-driven large-scale smart city projects in the digital polis of Seoul.

3 Case Study: Dongja-Dong Outside Government-Led Digitalization

3.1 Dongja-Dong with Digital Divide and Deprivation in the Digital Polis of Seoul

During the sixties and the eighties, South Korea was under authoritarian control, which promoted labor-intensive industries such as textiles and garments (K. Kim et al. 2021b). The authoritarian regime mobilized large cities, such as Seoul, for rapid export-oriented industrialization, which caused an influx of laborers from the countryside and an increase in housing supply for new laborers (Shin and Kim 2016). DJA is located next to Seoul station—one of the largest terminal stations for national railway lines, as well as a major station on city metro lines. Because of its excellent transportation network, the DJA served to accommodate those who were hunting for daily labor or temporary visitors who sought cheap accommodation (Lee 2006). Most of the houses in the DJA were low-rise dosshouse types with an array of small partitioned single rooms (ibid.).

In the nineties, a series of market-driven housing redevelopments, combined with the state's aspirations for beautification and modernization, occurred in inner-city areas across Seoul. Furthermore, the 1997 Asian financial crisis resulted in several business failures and personal bankruptcy (Ha 2007, 2010). Such socio-economic changes have caused massive evictions and subsequent homelessness (ibid.). However, DJA was less affected because it was not on the redevelopment list due to its low profitability of new reconstruction caused by its maximum building height of up to 20 m with five stories (interview: community organizer 1-a, 2019). Accordingly, the low-cost accommodation in the DJA remained unchanged and served to accommodate evictees or homeless people. While such trends continued, the DJA gained fame as one of the areas where the most vulnerable people in Seoul could afford to live (Fig. 2).

Compared to other areas in Seoul, the DJA has relatively higher levels of physical, economic, social, and digital deprivation. The overall deprivation in the DJA can be estimated using demographic statistics from official surveys of the *Jjokbang* village. "Jjokbang" refers to a tiny single room with less than ten square meters of floor space (Lee 2006), which is a typical residence type in DJA. There are five major *Jjokbang* villages in Seoul: Donui-dong, Changsin-dong, Namdaemun-5ga, Yeongdeungpo, and Dongja-dong (Jung 2021). The Jjokbang village in DJA is a medium-sized neighborhood with approximately 1,000 residents. Like the other Jjokbang villages, the one in the DJA has a distinctive demographic structure (Table 1). First, it has a high proportion of beneficiaries of the National Basic Livelihood Security Program, which provides financial support to low-income individuals whose earnings are lower than the minimum cost of living. As of 2015, the figure in DJA had surpassed 50%, whereas the average figure in Seoul was only 2.4%. The DJA

Fig. 2 Location and images of DJA. *Source* Map (Google Maps), Photos (by author, 2019)

also has many registered disabled residents. Over 15% of people in DJA were registered as disabled, whereas the average figure in Seoul was lower than 4% in 2015. Furthermore, there is a high proportion of the aged population in DJA. While only about 19% of the population in Seoul was aged 60 years or older, the figure in DJA was almost 50%. Despite such socio-economic deprivation, there was little difference in the smartphone penetration rate between DJA and Seoul (85% and 91%, respectively). This was because the National Basic Livelihood Security Program provided beneficiaries with discounted electronic rates (interview: community organizer 2-b, 2022). However, national programs do not cover private Internet access. The Internet penetration rate in DJA was approximately 30%, while the average figure in Seoul exceeded 80%. That is to say, although they have their own digital devices, it was hardly possible for the urban poor in DJA to make effective use of ICT-based services. In this sense, it is understood that DJA is one of the most deprived neighborhoods in Seoul with digital deprivation and socio-economic deprivation.

Table 1 Multiple deprivation figures in DJA

	Basic livelihood security recipient proportion (%)	Registered disabled proportion (%)	Aged population ratio (aged 60 or older) (%)	Smartphone penetration rate (%)	Internet penetration rate (%)
Dongja-dong	55.1	16.1	48.6	85	30
Seoul average	2.4	3.9	19.0	91	88

Source Kim (2016) and Korean Statistical Information Service (2016)

Institutional efforts have been made to promote redevelopment around the DJA to prevent further deprivation. For example, in 2010, SMG allowed the reconstruction of existing buildings in DJA by easing the height restriction for new buildings from 20 m (five stories) to 90 m (18 stories) (Kim 2016). This was in line with a market-driven redevelopment plan for Seoul station and its surrounding area (ibid.) and tried to introduce a smart city project called "art-and-tech village" in collaboration with a big tech company called Korea Telecom in 2013. The project's plan was to convert old Jjokbang into new cultural workshops equipped with ICT-based services in the DJA. However, such institutional attempts were unsuccessful because of the resistance of Jjokbang residents. Cooperating with civic society organizations, Jjokbang residents continue to campaign against the government-driven redevelopment proposed by online platform businesses as well as traditional construction firms (interview: community organizer 2-b, 2022). In this confronting context, DJA remains a safe and affordable neighborhood for those with physical, economic, social, and digital deprivation in Seoul.

3.2 Transformative Power Dynamics Through Community-Based Practices in Dongja-Dong

In opposition to the proposed redevelopment, Jjokbang residents have made collective efforts to foster and sustain their communal lives in DJA. One collective effort is to facilitate the process of co-producing and co-managing the communal services that they desire. Central to collective efforts is the intervention of a radical social group called the Dongja-dong area sarangbang (hereinafter DJA sarangbang). The DJA sarangbang is a self-funded civic organization that aims to enlighten the Jjokbang community against potential redevelopment in DJA. The main role of the organization is to promote the collective capabilities of the residents by helping them experiment with their own communal service provision in cooperation with other radical civic groups such as Homeless Action or Korean People's Solidarity Against Poverty, rather than solely relying on the public sector. Given this, it is worth looking at how the power dynamics behind communal service provision have changed through intermediary intervention and how it has affected the transformation of collective identity, intelligence, and capabilities of Jjokbang communities and their social infrastructure. Figure 3 shows the changing governance arrangements through intermediary interventions in communal service provision (Fig. 3).

The DJA sarangbang first emerged in 2008 when a civil rights activist settled in the DJA and started to organize the initiative of Jjokbang residents. The activist was a staff member of the Community Organization Information Network (CONET), a radical civil society organization serving to educate vulnerable citizens and foster their autonomy. As a full-time worker in CONET, the activist was sent to DJA to enlighten the Jjokbang residents and promote their collective capabilities by challenging the dominant market- or state-led redevelopment happening around DJA.

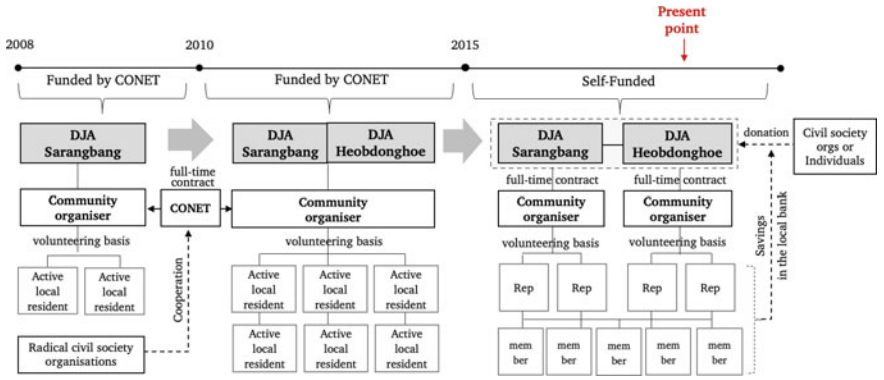

Fig. 3 A change in intermediary governance arrangements in DJA. *Source* Diagram created by author

According to an interview (interview: community organizer 1-b, 2019), the activist formed the DJA sarangbang as a small intermediary platform for local communication. By organizing diverse gatherings, such as a potluck lunch or an information-sharing meeting, the activist promoted the DJA sarangbang as a place of opportunity where residents could discuss personal interests or difficulties and figure out common issues in DJA. In this respect, it appears that the early DJA sarangbang focused on identifying a shared domain of interests or needs among Jjokbang residents.

Since 2010, the focus has shifted to dealing with shared issues identified in practice. The DJA sarangbang restricted its internal organizations from taking practical and effective actions for each issue in substance. For example, residents were unable to obtain loans, debit cards, or even open accounts at commercial banks because of their low credit scores. To address such problems, the DJA sarangbang decided to establish an alternative local banking system. For its operations, the DJA sarangbang created a new internal organization called the Dongja-dong area hyeobdongheo (hereinafter DJA hyeobdongheo) in 2010. Unlike commercial banks, the DJA hyeobdongheo took the form of a community-based credit union through which any Jjokbang resident could make a deposit and obtain a loan regardless of their credit history.

Another common issue is that most Jjokbang buildings are not well equipped with cooking facilities. Hence, many Jjokbang residents often made instant meals rather than proper home-cooked meals. In response to this, the DJA sarangbang formed another internal organization called the Dongja-dong area sikdorak (hereinafter DJA sikdorak) to run a communal kitchen where Jjokbang residents can eat home-cooked lunch at an affordable price. During this period, the DJA sarangbang grew in size by expanding its scope for work and responsibilities. However, CONET was still the main source of financial resources in the DJA sarangbang, whereas the community organizer was an employee hired by the DJA sarangbang.

In 2015, there was a significant change in the fiscal mechanism and organizational configuration in the intermediary structure. First, the DJA hyeobdonghoe

was repositioned in parallel with DJA sarangbang. Two community organizers were then recruited and assigned to the DJA sarangbang and hyeobdonghoe, respectively. This led to the emergence of a certain intermediary organization with a pair of teams that are organizationally separated from each other: the DJA sarangbang and hyeobdonghoe. The reason for this change is that the DJA hyeobdonghoe gained prominence as the demand for local banking services increased. After the local banking system was established, CONET discontinued its financial support in DJA. Instead, the intermediary organization began to self-fund community activities by using deposits in the local bank and donations from charities or individuals.

Such a progressive organizational transition enabled a more radical approach for Jjokbang residents toward neighborhood improvement. For example, when the SMG attempted to introduce the ICT-based art village plan, the DJA sarangbang and hyeobdonghoe brokered the cancelation of the plan. Alternatively, the intermediary organization encouraged residents to digitalize their local banking system together with radical civil society organizations while capitalizing on their improved financial autonomy. Despite such progressive changes, intermediary intervention remains contested because DJA sarangbang and hyeobdonghoe have been rarely considered as official counterparts of SMG in DJA. Hence, it is no wonder that Jjokbang residents have often been confronted with conflicts with government-driven smart city frameworks, whereas intermediary-led community practices have taken place outside the institutional domain.

4 Inclusion, Exclusion, and Participation of the Urban Poor in Digital Polis

4.1 Intermediaries Inside Versus Outside the Institutional Domain

It is certain that the intermediary intervention in DJA improved the quality of life of the Jjokbang community. However, at the same time, it is clear that DJA sarangbang was not seen as an official counterpart in DJA to SMG. Instead, there was an official intermediary partner called the Seoul Station Jjokbang counseling center (hereinafter, Seoul Station Jjokbang center). The Seoul Station Jjokbang center began as part of the organization of a social service department in the Yongsan local authority in 2001 (Kim 2016). As its importance increased, the center was handed over to the regional government (SMG) in 2013. Since then, the SMG has commissioned non-profit organizations to operate the Seoul Station Jjokbang Center and provided local residents with various social welfare services such as medical aid, employment support, and legal advice, as well as supplies of food and basic necessities. Hence, it is not surprising that the SMG tended to communicate directly with the center for important decision-making in the DJA. Resultantly, DJA sarangbang has been excluded from the decision-making process in planning or managing publicly funded

smart city-making practices that can affect the Jjokbang community, as pointed out by a Jjokbang resident.

> SMG worked jointly with a big tech company called Korea Telecom to create a neighborhood plan in DJA in 2013. However, we did not know about it until they showed us their draft proposal at a public hearing. Their proposal was to beautify the built environment, such as streetscape improvement or interior renovation, with matching funds by Korea Telecom and SMG. What upset us the most was a plan to transform the DJA into a so-called art and technology village by converting old jjokbangs into new workshops for young artists. We neither wanted nor needed such things, but that was what they had planned for some reason. The proposal was eventually canceled because of our constant campaigning against it. Instead, in 2014, Korea Telecom opened a cultural complex equipped with ICT-based services, such as digital laundry and IPTV rooms, managed by the Seoul Station Jjokbang center. Since that point, I think the sarangbang and the Jjokbang center have started to drift apart. (Interview: Local Resident 2, 2019)

While acting as an official partner of SMG, the Seoul Station Jjokbang center could secure its position to join a wide range of partnerships with the public and private sectors for neighborhood improvement projects in DJA. The official partnerships enabled the Jjokbang center to build a large pool of volunteers, for example, from neighborhood schools, supermarkets, and hospitals. This is because the Jjokbang center is considered a legally registered body that can sign multiple memoranda of understanding with external corporations such as law firms and telecommunications companies. However, it is worth examining the reasons for the participation of external partners. Drawing on several interviews (interviews: community organizer 1-a, 2019; community organizer 2-a, 2019; local resident 1, 2019), it appears that partner schools and hospitals encouraged their students or staff members to volunteer work in DJA to earn credit for mandatory community service. This means that external actors were involved in the partnership with a personal stake rather than with a full commitment to combat local problems in DJA. Hence, it is likely that local problems remain unsolved or worsen, while the mobilization of external resources to address these problems remains tokenistic in nature. Under these circumstances, the DJA sarangbang, as a non-official partner, was given no formal and substantive opportunity to combine voluntary external resources with their radical local demands.

> Large corporations like Korea Telecom or Hyundai Motors are reluctant to sponsor the DJA sarangbang or hyeobdonghoe, because I think it's unable to issue legal documents for their tax exemption benefit, for example, through the CSR (Corporate Social Responsibility) program. As a result, we have been naturally excluded from many projects involving the private and public sectors. (Interview: Community Organizer 2-a, 2019)

This confirms that the intermediary intervention for smart-city-making also remains outside the institutional domain because it has no official or legal status in relevant urban partnerships in DJA. This is a clear signal that the involvement of radical social groups serves to prevent Jjokbang residents from building new relationships with external actors in the implementation processes of smart city plans as well as traditional city renewal schemes. However, in this context of exclusion, it is certain that radical intermediary intervention also makes indirect contributions to community development by promoting cooperation for physical and digital service provision.

With this in mind, the following section presents the analysis of the cooperation of the Jjokbang residents in the intermediary-led community practices outside institutions.

4.2 Inclusive Alternatives at the Margins of Welfare

In the DJA, there are many vulnerable Jjokbang residents, such as those with low incomes and elderly or disabled people who live alone without family. Hence, they often struggle with social isolation or economic poverty at the welfare margins. Although SMG recently launched several digital services for them, such as digital laundry and IPTV rooms, such institutional support does not solve the fundamental problems. To address these problems, the DJA sarangbang made alternative efforts to encourage Jjokbang residents to co-produce and manage communal services to ensure a better quality of their communal and personal lives. For example, while the alternative local bank has been run, a community-based credit union has been created, and its members are allowed to use an emergency loan service of up to KRW 500,000 (about USD 420) without any conditions despite their persistent low credit ratings. This local banking system can only cover basic services such as deposits, withdrawals, and loans to a limited extent. However, it appears that such basic services have benefited the vulnerable local population struggling with debt problems, which could lead to a vicious circle of poverty. In this respect, the radical intermediary intervention here served to form trust-based communities and promote the qualitative development of community initiatives in DJA. A similar intermediary intervention was also found in the DJA sikdorak, which provided residents with home-cooked lunch at a low price.

> I've lived in a Jjokbang for a long time. It is a very tiny single room with neither a private toilet nor a kitchen, so it is difficult for me to eat home-cooked meals… I could not afford to eat out every day. However, I have had another option for lunch since the DJA sikdorak was launched in DJA. For only KRW 1,000 (USD 0.8), I can enjoy a proper home-cooked meal with steamed rice, hot soup, two to three side dishes, and a dessert in the DJA sikdorak. Plus, if I have no cash for some reason, they let me pay them back later or just skip the fee. It is not just me, but many others in DJA. This makes me feel that I can have a warm-hearted lunch with family or relatives. (Interview: Local Resident 1, 2019)

It should be noted here that the DJA sikdorak is run by locals rather than being contracted to an external food service company. That is, staff members are all local residents who work on a voluntary basis. This is possible because a group of residents take it in turn to do voluntary work by making use of donated funds or food from civil society organizations or individuals. Interestingly, such collective experiences have triggered the emergence of similar community-based services, such as furniture repair, cleaning, and funeral services in DJA. As many Jjokbang residents had no family or cousins, such community-based services provided the basis for securing personal benefits and expanding their collective intelligence. Hence, it is clear that this co-production of communal services served to improve communal autonomy outside the institutions (Fig. 4).

Fig. 4 A funeral service, furniture repair service (left images), smartphone use workshop (upper right image), and communal kitchen service (lower right image). *Source* Author (lower right image) and DJA *sarangbang* (others)

In a digital context, local initiatives could expand their boundaries while opening their membership to all comers outside the DJA. This was made possible by promoting practical information-sharing and improving the sense of belonging by improving both online and offline communication among the local population. Especially, the DJA sarangbang encouraged them to stay digitally connected by providing free Wi-Fi in communal spaces such as the sarangbang lounge and local kitchen. Considering that the local Internet penetration rate was around 30%, while their smartphone penetration rate reached 85%, the free Wi-Fi provision was useful because it enabled better electronic communication by using their smartphones.

> Last year, I moved to SMG-managed public rental housing in another area. It has a larger room equipped with more facilities, such as a private bathroom and sink. However, since moving in, I have been mentally distressed. My flat is the only public rental housing, while others are private rental or owned houses. I have never tried to get along with my new neighbors because they looked like they were from the middle or upper class. It is likely that it is only me that receives basic livelihood security money in this apartment… Alternatively, I am still in touch with my friends in DJA through online chat rooms. When they access the free Internet in the sarangbang lounge, I can get them updated about me and hear their news as well. For me, DJA is a spiritual home, although it is physically far from where I actually live now, so I often come by DJA or communicate with them online at least, because the people here let me feel a sense of belonging. We are just alike. (Interview: former resident 1, 2019)

This description implies that there was not only a quantitative expansion of community members. There was also a qualitative development of the community initiative through the improvement of alternative electronic communications, albeit within limits. Interestingly, the DJA sarangbang has recently started a regular workshop on how to utilize a variety of smartphone functions, as well as providing free Wi-Fi (interview: community organizer 2-b, 2022). Furthermore, it has also computerized its accounting system, which streamlined the process of year-end settlement for those who donated to Jjokbang village and the members of the credit union of the local bank (ibid.). This means that the radical organizational transition served to mitigate the second level of the digital divide by securing the right to a self-governing system of co-planning, co-financing, and co-managing their digital services. That is, counter-hegemonic change took place through alternative digital service provision, which contributed to building a unique social infrastructure with radical collective intelligence and identity outside the institution. Such change can be seen as a transformative process toward a "genuinely humanizing urbanism" (Harvey 1973) or a more emancipatory and empowering urban community in deprived areas, albeit outside the institutional domain of digital polis.

4.3 Autonomous Participation but Vulnerable to Digital Capitalism

However, it also remains improvised, provisional, and tactical because the new digital service provision has not been made through the administrative networks of SMG but with support from radical social groups. It is certain that the radical horizontal alliance served to maintain the self-governing system, but their local activities were still viewed as unauthorized, unofficial, or unlicensed actions. This means that the alliance is no more than a group of minorities outside the government's legitimate remits, while the Seoul Station Jjokbang center officially represents the main local voice. In this context of counter-hegemonic change, Jjokbang residents' communal autonomy could grow only within the limited network closure outside the institutional framework of the smart city. Accordingly, it is no wonder that such community development deprived the local population of opportunities to join official partnerships and access government-led smart city-related practices such as the establishment of a computerized accounting platform.

> In fact, the DJA hyeobdonghoe was not a legally-registered cooperative. The SMG has asked us to register so that it can officially fund or support us through its computerized accounting platform. However, once we are legally registered, we are no longer allowed to provide finance-related services, including our local banking service. For us, the local banking service was not something negotiable; it was essential. Moreover, SMG funding required so many administrative affairs we could hardly manage. So, we had no option but to give up the benefits of having statutory status and maintain the banking service outside of the legal framework. As a result, we have been naturally excluded from recent digital-related projects involving the private as well as the public sector. (Interview: Community organizer, 1-a, 2019)

It is true that the radical intermediary intervention served to create a local environment where residents could improve their digital skills and practices and shape their collective identity, intelligence, capability, and radical social infrastructure. This enabled them to feel a stronger sense of shared ownership in their neighborhood through their own physical and digital service provision. However, the established social infrastructure is fragile and easily challenged by external forces driven by digital capitalism because it is not supported or protected by official institutions. For example, the SMG published the 2025 Seoul Urban Regeneration Strategic Plan in 2015. The strategic plan provides an overall direction for the regeneration of major areas in Seoul, including the Seoul station zone next to the DJA. For the Seoul station zone, in 2017, a detailed action plan was proposed to regenerate its neighboring areas by revitalizing its local economy. Despite not being a direct target, DJA gained attention from speculative but legitimate investment agencies or developers with the expectation of spillover effects from the Seoul station redevelopment.

> A couple of years ago, SMG announced a development plan around Seoul station, including renovation of local heritage sites, modernization of traditional markets, promotion of tourist accommodation and so on…I think the new plan motivated the landlords in DJA. Last year, two Jjokbang buildings were converted into commercial accommodation managed by Airbnb, while one was sold to an investor seeking to open a brand-new unmanned hotel. (Interview: community organizer, 1-b, 2019)

It should be noted that such a wave of redevelopment movement is not only made by an individual landlord but also coordinated by a group of landlords taking collective action, together with a wide range of speculative forces, in an attempt to promote large-scale housing redevelopment in DJA.

> A few months ago, there was a launch ceremony for a redevelopment union nearby. Since then, the union's members have had regular meetings every week and have put up a banner that reads "For a better living environment in DJA." I tried to sit in the meeting, but it was impossible because it was a member-only meeting. I found that the meetings were led by a group of landlords to promote large-scale housing redevelopment, together with housing markets and constructors; with hindsight, they were planning to redevelop DJA as a digitally serviced apartment complex for young professionals working around Seoul station… What's even worse is that the union will undergo an administrative procedure for this redevelopment once it is agreed by the majority of its members. (Interview: local resident 1, 2019)

This is a clear signal that speculative redevelopment could emerge with the collective agreement and legal permission in the DJA. Under the name of a better living environment, it can possibly eliminate local places such as tiny single rooms (Jjokbangs), communal kitchens (sikdorak), common rooms (sarangbang), or local bank offices (hyeobdonghoe). Hence, from the residents' point of view, such new redevelopment would erode their existing personal and communal lives in DJA by encroaching on the places where they live, gather, and interact. In this process, the existing communal culture in DJA can be threatened by decline or extinction. What should be noted here is that the SMG's overall direction encourages the private sector to participate in redevelopment activities under the name of local economic growth. Unsurprisingly, the partnership among the speculative forces is regarded as positive rather than negative, as it supports and complies with the strategic plan of SMG that promotes "digitally

friendly redevelopment" of the Seoul station area. Jjokbang residents had no legal action against the hegemonic power of the strategic partnership rooted in digital capitalism. Alternatively, they could make their voices heard by protesting together with radical civil society organizations against them.

Therefore, although the alternative approach reinforced the radical form of social infrastructure underpinning emergent community-based practices, the social infrastructure itself made it difficult for the local population to engage in a wide range of smart city-related practices, particularly driven by the public and private sectors with speculative motives. Under these circumstances, the more actively the residents participate in their radical community practices, the more they are excluded from official decision-making for publicly funded smart city projects. In this sense, there is a certain dilemma in which the genuine growth of community autonomy is made outside the official institutions, while improved autonomy hinders their access to the institutional framework of the smart city. The result is that the local population could hardly secure their right to establish a sense of "long-term" shared ownership of their alternative physical and digital service provision in their neighborhood improvement process. Eventually, although the qualitative development of poor urban communities has been achieved, their genuine right to smart cities remains unachieved. This critical point is central to the development of poor urban communities through radical intermediary interventions across the institutional boundaries of Seoul's smart city framework.

5 Conclusion

This chapter aims to better understand the nature of the inclusion, exclusion, and participation of the urban poor in their neighborhood improvement by exploring the changing power dynamics and social infrastructure behind their community-based practices across the institutional domain of the digital polis of Seoul. The case study analysis shows that radical intermediary intervention served to build a unique social infrastructure and secure the right to a self-governing system of co-planning, co-financing, and co-managing their digital service provision at the margins of welfare. By capitalizing on the self-governing system, Jjokbang residents could maintain flexibility in their organic communal activities while being free from the rules and norms of the SMG. This provides the basis for the development of a more autonomous mode of community initiatives in the neighborhood improvement process. Hence, by reinforcing the radical form of social infrastructure, a variety of hands-on technology education and applications, such as computerized accounting systems, could be introduced as a platform to create an alternative smart city-making pathway, albeit within limits.

However, this chapter also argues that the radical organizational transition reduced opportunities for community initiatives to join an official partnership with SMG, thereby preventing their access to the smart city-making practices implemented through the partnership. This means that the community members could hardly

expand their membership, while their communal autonomy could grow only within the limited circle of radical social groups outside the institutional domain of the digital polis. Unsurprisingly, it is clear that the established communal autonomy has become more vulnerable to the hegemonic power of developers and investors who support and comply with the strategic plan of SMG, which aims to redevelop DJA within official institutions. This is seen as the potential digital capitalist threat in poor urban communities where the non-statutory status of their self-governing system has been slowly overridden by statutory digital monopolies, serving to gradually encroach on their alternative smart city-making pathway.

In this respect, it is understood that a balance between hegemonic and counter-hegemonic forces to sustain alternative smart city-making has not been achieved, although the counter-hegemonic force has served to create a local platform for the inclusion of more emancipatory and empowering urban communities, albeit outside the institutional framework of the smart city. Highlighting the critical point, this chapter argues that there is a double-edged ambivalence to alternative smart city-making pathways for the urban poor, where their right to the digital polis remains unachieved, while their radical approach contributes to taking a step further toward genuinely humanizing smart urbanism. However, this study covers a single case of alternative smart-city-making in the deprived area of Seoul and does not discuss it in a wide range of deprived urban neighborhoods in Korea and other countries. A follow-up study would have to extend the scope and provide a more encompassing framework to better understand the challenges and opportunities of the urban poor in the digitally friendly neighborhood improvement and, thereby, situate them in a broad discourse on "digital exclusion and inclusion" (Foth et al. 2015; Cardullo et al. 2019) in urban processes worldwide.

Appendix: List of interviewees

Sector	Identification code	Affiliation	Interview date	Duration (hours)
Intermediary sector	Community Organizer 1-a	DJA hyeobdongheo	Jan. 04, 2019	1
	Community Organizer 1-b		Jan. 06, 2019	2
	Community Organizer 2-a	DJA sarangbang	Jan. 06, 2019	0.5
	Community Organizer 2-b		Apr. 14, 2022	1.5
Community sector	Local resident 1	Local community leader in DJA	Jan. 04, 2019	1.5

(continued)

(continued)

Sector	Identification code	Affiliation	Interview date	Duration (hours)
	Local resident 2	Current resident in DJA	Jan. 04, 2019	1.5
	Former resident 1	Former resident in DJA	Jan. 04, 2019	1.5

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Towards a More Emancipatory and Empowering Digital Polis

Online-Based Food Hubs for Community Health and Well-Being: Performance in Practice and Its Implications for Urban Design

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Abstract Food hubs assist the economic development of small local farms growing produce sustainably and providing healthy nutrition by aggregating and distributing a diversified range of fresh local food directly to customers. Although food hubs remain niches due to the challenges of growth and implementation, the interest in local and organic food has recently surged, and the demand for online grocery shopping has dramatically increased, especially since the COVID-19 pandemic. This research considers the potential of an online platform for food hubs and examines food practices that include creating and appropriating social networks of food hubs. The study also discusses the implications of the socio-spatial transformation for urban design. With a theoretical framework drawing from social innovation and practice theory, suggesting performance dynamics in practice, this study reviews the current trend of food hubs in the United Kingdom and investigates London-based *Growing Communities* and *Sutton Community Farm*, both of which offer community-led veg box schemes. The findings confirm that, as social innovations, community-led food hubs are evolving places for community health and well-being, among other online-based food hubs. This research proposes an evolutionary step for community-led food hubs for social connections. An online platform effectively mobilises resources to connect a diverse local community. More importantly, an online platform interconnected with physical facilities in farm sites and collection points can enhance spatial qualities and capacity and support food access, leading to the sustainable development of urban space. Methodologically, the long-term review of this research confirms the usefulness of the research framework, which revealed evolution in these cases.

1 Introduction

Food hubs are intermediaries between producers and customers, mainly aggregating and distributing locally produced food (Guzman and Reynolds 2019). Such hubs have proliferated since alternative food networks (AFNs) first emerged with charity

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shops, food cooperatives, farmers' markets, community supported agriculture (CSA), and box schemes (Goodman et al. 2008; Guzman and Reynolds 2019). Food hubs are mainly grassroots efforts to help small- or medium-sized farmers grow and provide healthy food access to the community. This community discerns food hubs from the industrialised food system, especially big manufacturers and large retail supermarkets also dealing in locally sourced food (Fischer et al. 2015).

Food hubs represent a shift towards sustainable food consumption and constitute an alternative local food system to the industrialised global food system damaged by climate change, fuel depletion, and biodiversity reduction (Berti and Mulligan 2016; Fonte 2013). Accordingly, food hubs account for diverse activities such as training, business support, and community education (Guzman and Reynolds 2019). After all, these food hubs are place-based projects, and their ways of producing and distributing propose a socio-spatial transformation. Moreover, researchers assume the alternative foodscape of re-localisation adds ethical value, especially regarding social equality and environmental sustainability (Edwards 2011; Psarikidou and Szerszynski 2012; Rossi 2017).

However, at least some time is needed for food hubs to attain their goals of a "socially just, economically viable and ecologically sound" food system (Fischer et al. 2015, p. 97). Community-led food hubs have difficulty expanding due to financial stability and cultural awareness limitations. This tendency results in the gentrification of food access, with only wealthy and educated people typically aware of the importance of local food and environmental sustainability (Blake et al. 2010; Eriksen 2016). Due to the challenges of growth and implementation, food hubs remain as niches, so it is not easy to make systemic changes to the existing food system.

Recently, the trend of food hubs has been changing. The interest in local, organic, and fresh food has surged since the economic recession in 2008 (Morgan 2013; Mount 2011). The demand for online grocery shopping options such as box schemes dramatically increased in the United Kingdom during the COVID-19 lockdowns (Wheeler 2020), and researchers have raised the issues of food security and sustainability (Power et al. 2020). This situation is arguably an opportunity for online-based food hubs to reinforce their ethical value and encourage community inclusion. Healthy food can no longer be subject to the lifestyle consumption that one previously presumed. Moreover, food hubs' potential to support local communities can be out-of-the-niche.

Online-based food hubs supplying London have actively responded to this challenge. Notably, community-led box schemes enable active community engagement by organising events and temporary settings in urban spaces. Therefore, this research considers the potential of an online platform for food hubs and examines food practices that involve creating and appropriating social networks of food hubs. A second aim is to discuss the implication of the socio-spatial transformation on urban design. For case studies, this research selected London-based *Growing Communities* and *Sutton Community Farm*—both offer community-led box schemes.

The remaining sections of this study include Sect. 2, where we review social innovation and practice theory to establish a conceptual framework that suggests the dynamics of performance in practice. Section 3 explains the research design and

methods applied to the case studies. Based on the current trend of food hubs in the United Kingdom, as overviewed in Sect. 4, Sect. 5 explores food practices in the case studies. Specifically, it argues the material integrity for community health and well-being and the role of online platforms interfaced with physical facilities. Discussion on the findings and implications of socio-spatial transformation follows in Sect. 6, concluding with remarks in Sect. 7 about this research and its limitations.

2 Social Innovation and Practice Theory

2.1 Social Innovation in Urban Space

This section reviews social innovation in urban space to understand the spatiality of food hubs in cities. Food hubs are good examples of social innovation, considering that such innovation is mainly grassroots, with a mission inspired by social, economic, and ecological concerns (e.g., climate change, immigration, and health care) (Jaeger-erben et al. 2015). 'Innovation' lies in activities or services for change. Researchers mention innovation as technical and economical, leading to commercial success, but they do not feature innovation as equitable (Moulaert et al. 2013). On the other hand, the social aspect of 'social' innovation represents the collaboration or participation of actors and indicates social benefits such as inclusion and well-being. Environmental sustainability is another benefit, although not counted traditionally (Ardill and Lemes de Oliveira 2018). Accordingly, social innovation concerns public interest, "meeting social needs of, or delivering social benefits to, communities", but it is "more effective than conventional public sector" (Moulaert et al. 2013, p. 1).

The idea of social innovation is not new; we can trace it to the nineteenth century (e.g., food banks in the Victorian era) (Ardill and Lemes de Oliveira 2018). Social innovation has played an important role in regeneration and redevelopment since deindustrialisation. It has been revisited since the economic crisis of 2008, when the state and market failed to deliver a service that met people's needs and when social equality and sustainability were much needed (Ardill and Lemes de Oliveira 2018; Horgan and Dimitrijević 2020). In the 2010s, when advanced technology emerged, an online platform understood people's needs, disseminated knowledge, and created new solutions through co-production (Jégou and Bonneau 2015). Social innovation in urban space helps achieve sustainability and community resilience (Rossi 2017).

Regarding social innovation's role in tackling a societal challenge, it is noticeable that social innovation helps enhance the built environment for sustainable development (Geels and Schot 2016). Ardill and Lemes de Oliveira (2018, 2021) argue that co-production approaches to spatial development enhance space capacity. They highlighted the dynamics involved in the socio-spatial transformation of social innovation and establishing social innovation processes for healthier and more equitable places. This approach applies to online-based food hubs in the present study. The

socio-spatial transformation informs the role of the online platform in developing social innovation to help improve the built environment.

For the spatiality of social innovation in urban space, design should boost social innovation competence with efficiency and increase the capacity to act to meet social change. For example, Manzini (2015) proposed that social innovations are small yet meet local needs and are easy to spread as prototypes, facilitate a locally contextualised setting, and work as part of a network for a wider community. For social innovations to build the network, which becomes infrastructure in urban space, Manzini (2014, 2015) stressed that citizens are resources, and all levels and actors must be responsible for the design.

2.2 Practice Theory and Food Practices

Since the economic recession in 2008, food security and food equality have been the focus of city governments and policies. As governments recognised the critical role of consumers in the change towards sustainable consumption, how their initiatives could influence everyday food consumption has been a central interest in academic research (Crivits and Paredis 2013; Domaneschi 2012; Fonte 2013; Halkier 2009). Therefore, the research has turned to practice theory as a lens for understanding the transition and influence on food practices. According to the much-cited Reckwitz definition (Reckwitz 2002, p. 249):

> 'practice' (Praktik) is a routinized type of behaviour which consists of several elements, interconnected to one other: forms of bodily activities, forms of mental activities, 'things' and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge.

In this definition, two features are central: (1) routinised behaviour and (2) things and their use. The behaviour includes individuals' habits that their choices value most and a collective character that one can structure. 'Things' are necessary resources for practice; individuals use things in a particular way for a specific practice. Further, agents are also part of the practice as carriers with "different bodies/minds". Practice theory views practice as "routinised relations between agents and objects" (Reckwitz 2002, p. 253). Researchers view practice as a coordinating entity that one cannot divide into a single element; its presentation is temporal and spatial. It is what people do and how they do it through which individuals can reproduce practice in their everyday life (Schatzki 1996). The key is performance as a routinisation of practice. The performance has internal dynamics and entails changes and continuity, breaking and shifting structures, discussed as the relationship between routinisation and reflexivity (Schatzki 1996).

Researchers widely acknowledge Warde (2005) as the first researcher to apply practice theory to an empirical analysis of consumption (Halkier et al. 2011). Based on Reckwitz's (2002) works, Warde (2005) drew the theoretical and methodological implications of practice theory (i.e., the concept of practice and its organisation) for

consumption practices. The distinct lesson from Warde (2005) is that consumption is not conspicuous but is as ordinary as cooking, shopping, washing, laundering, etc. (i.e., an activity we find in everyday life). Jaeger-erben et al. (2015) highlighted the evolutionary process of practices engendered by producers and appropriated by users for sustainable consumption, mainly focusing on social innovation in building alternative practices to the global economic system. Here, agents carry a practice, and conversely, they also alternate the practices. However, everyday life sees routinised regular consumption, with practices competing with other temporal, material, and cognitive resources when new practices emerge. The main challenge is engagement to make a meaningful impact on transition and maintain the transformation in daily routines. Thus, previous research has insisted on active interventions to respond to the challenge (Jaeger-erben et al. 2015; Shove 2004, 2009).

For food practices in consumption, Halkier (2009) focused on the interaction between reflexivity of environmentally-friendly consumption and routinisation. She applied practice theory and revealed the importance of motivational purposes, i.e., customers' functional essentials (satisfying hunger), social (eating with family and friends), and emotional (pleasure) reasons over food types in food consumption. She found consumer engagement in organic or local food consumption challenges but addressed that health and well-being are good motivations for such consumption. She proposed that media and public and private institutions intervene to inform and promote health and well-being in the food practice transition.

Domaneschi (2012) acknowledged the role of knowledge and know-how, elaborating upon food quality that affects engagement in local food consumption. He also accentuated the social definition of food quality in Italy, which transforms the material qualities of local food (biological, organic, etc.) into symbolic value. The know-how stemming from the relationship between human (agent as a carrier) and non-human (things) sectors and the various mobilisations of resources have created competition for authority against agrobusiness in defining food quality.

Crivits and Paredis (2013) and Fonte (2013) analysed food consumption practices in the local food system. To explore the dynamics of performance, they focused on the relations between agents and structure. They applied a three-tier framework: (1) agency (motivation, value, capacities), (2) material (tangible aspect—things, artefacts, technology, infrastructures, and their use), and (3) immaterial structures (less tangible aspect—the influence of media, norms and beliefs, statuses, social groups, social roles, and cultural customs). Crivits and Paredis (2013) reconfirmed the role of motivation in driving practices. Limited places and times offer alternative food practices, but the motivation for health and well-being, solidarity for farmers' fair income and their sustainably grown produce, established by knowledge transfer, can be influential in material-function and socio-cultural structures. Customers indicated that one could redraw convenience, a central concept in consumption, with alternative food practices and organise different routines (Crivits and Paredis 2013). With Italy's food purchasing groups, Fonte (2013) stressed the interconnections among agency, cultural and social norms, and material-functional structures to emerge in a continuous dialectical process of routinisation and reflexivity.

3 Research Design and Method

This research investigated the current trend of U.K. food hubs to understand characteristics such as types and challenges. First, information was collected from the reports on U.K. food hubs published by the Sustain and Food Research Collaboration. Then, data on 52 box schemes that, in 2022, presently supply London, were collected from Soil Association in the United Kingdom and from internet search engines to understand online-based food hubs. Many online organic groceries sell fresh ingredients, meal kits, or ready meals, but box schemes are a well-known structure for directly connecting farmers with customers. So, it is relatively straightforward to collect the data from them.

The selection of Growing Communities (GC) and Sutton Community Farm (SCF) for case studies was based on box scheme information. G.C. and SCF are volunteer organisations, the most common type of U.K. food hubs. Both have their base in London, but G.C. is in a city centre, Hackney, while SCF is in a peri-urban area, Wallington. The different contexts of locations were considered mainly for different land availability. G.C. was set up in 1996, which is fit for a long-term approach to this research in exploring the dynamics of practice performance. Further, G.C. is financially self-sustained, covering all farm operation costs through its main trading of a veg box scheme. It supported changing the existing food system by replicating the food hub model in other areas. SCF launched a box scheme in 2011, later than G.C., but it also prepared a strategy in 2021 for its replication. These backdrops suggest that G.C. and SCF have established operations appropriate for this research method.

The core functions of food hubs are aggregation and distribution, and sub-functional activities are ordering, packaging, and delivering. Three elements derived from practice theory were used to describe the interconnections in complex food practices through the creation and appropriation in different local contexts. They are:

- Agency, motivation, meaning, and engagement: Agency includes staff, members, and volunteers who are carriers and influencers of the practices. Their experience, emotion, and motivational purposes are critical for engagement (e.g., pleasure derived from cooking and social gathering, health, and well-being),
- Immaterial structure: This structure includes individuals' know-how and habits, and embedded socio-cultural norms (e.g., behaviour and notion of local food), and
- Material-functional structure: This structure includes resources related to functions and things such as technologies, devices, and tools and their use (e.g., infrastructures, online platforms, land uses, packaging sites, classrooms, kitchen facilities, farms, delivery vehicles, and collection points).

Members' motivations in selecting box schemes, know-how, habits, and consumption behaviours were identified from a variety of documents provided by G.C. and SCF through their websites, Facebook, Twitter, and blogs. The documentation included

the evaluation report conducted by NEF Consulting in 2020 and G.C.'s and SCF's annual performance reports for the last ten years. The annual performance reports also helped identify the food hubs' actions, challenges, and responses. In addition, social media publications such as blog entries, internet forums, and local media publications were sources for relations within and beyond their communities.

4 Current Trend of Food Hubs in the United Kingdom

4.1 Characteristics of U.K. Food Hubs

Compared with U.S. food hubs that started as early as 1995, U.K. food hubs grew since the 2000s with the alternative food network movement (Guzman and Reynolds 2019). However, in the United Kingdom, there are only a few reports investigating food hubs at a regional level, commissioned by organisations supporting national campaigns such as the Sustain and Food Research Collaboration (Driessen 2021; Guzman and Reynolds 2019).

Guzman and Reynolds (2019) summarised the general features of U.K. food hubs according to purposes, organisations, scales, venues, and settings. Although diverse forms have emerged according to local needs and resources, they broadly defined food hubs with core functions such as aggregation and distribution and ethical principles towards building fairer and more ecological and environmentally sustainable food supply chains. For organisations, voluntary sector organisations are the most common type in the United Kingdom. Regarding the scales, food hubs as alternatives to industrial food systems lie in the 'local' sector. Food hubs serve neighbourhoods within a 30-mile radius of single or multiple sites or operate as virtual hubs using an online platform where communities and producers organise markets to sell produce.

For the function and space of food hubs, most offer services such as packaging and delivery (Guzman and Reynolds 2019). However, small and mid-sized farms cannot afford packaging and systems that ensure the delivery of products with the correct weight and quality to serve the wholesale market. Accordingly, improving logistics and better pricing are the main reasons U.K. farmers selected or became interested in food hubs (Driessen 2021). Guzman and Reynolds (2019) also explained that food hub activities are diverse according to their economic, social, and environmental approaches. For example, we see their diversity in social supermarkets, business training, business development support and facilities for new independent food entrepreneurs, child and adult food education and skills development (e.g., cooking and growing, food aid collection, and distribution services), and spaces and opportunities for community food engagement, from food growing to box schemes, markets, community cafés, and shared meals.

4.2 Box Schemes as Suppliers for London

Among other food hub types, 52 box schemes which presently supply London were identified. They comprise 17 nationwide or 35 local suppliers, but all present as retailers of locally produced organic, fresh, and seasonal food. As online-based food hubs, they commit to ethical approaches through their websites, supporting fair pricing for local independent farmers, healthy food choices for customers, environmental sustainability, reducing food miles, recycling, and packaging free from plastic. Moreover, since the outbreak of COVID-19, many have facilitated various routes to markets such as offices, restaurants, cafes, shops, schools, and households. This steadfastness suggests that they affect daily routines of food consumption more than before.

Box schemes are based mainly on weekly subscriptions, featured with no change to box contents, and set up with minimum money spent. Since the COVID-19 pandemic, they have provided more choices, offering a range of fruits and vegetables, but many sold a more comprehensive array of foods such as meat, fish, dairy, bakery, and farm products. In addition, the schemes had various options with standardised small, medium, or large boxes and individual items. Connecting more than 100 organic farms and organic food makers, nationwide suppliers such as Able & Cole and Pikt have more options available for customer convenience (such as one-off, weekly, fortnightly, and every-three-week purchase options or discounts on first purchase and customisable boxes) so customers can choose what they want.

Many box schemes were online only (44 out of 52) with storage and packaging sites and offered home delivery. However, some have mixed sales channels with offline farm shops (eight out of 52), and some grow food on their farms (e.g., Stanhill Farm, Riverford Organic Farmers, and Sarah Green's Organics). They are producer-led or customer-led non-profit organisations (e.g., Organic Lea, Kentish Town Veg Box, and Crop Drop) or privately owned intermediaries (e.g., Farm Direct and Organic Delivery Company).

Although researchers found voluntary sector organisations to be the most common food hubs (Guzman and Reynolds 2019), the current trend is that as suppliers for London, community-based schemes are not numerous, numbering only nine out of 52. Nevertheless, there seems to be a significant demand, and private wholesalers quickly turn their market routes to accommodate that demand. However, this may be an exceptional situation caused by the COVID-19 pandemic. Community-led schemes offer diverse social activities, events, training, or education programmes for the growing food and food supply system, using physical facilities in their farm sites. Although they leverage an online platform, the community-led box schemes set up collection points for distribution to reduce food miles and meet other people. Based on these online and offline social networks, the box schemes can and should be actively involved in various actions for community health and well-being.

5 Case Study Analysis

5.1 Creation of the Box Schemes

G.C. and SCF are community-led organisations based in London. Their business structures are not-for-profit social enterprises investing profit in a social mission. SCF, in particular, is owned by 400 shareholders from the local community; elected voluntary board members are responsible for decisions. Members volunteer for the social mission and growth initiatives, but G.C. and SCF have hired professional staff; G.C. had 43 paid staff in 2021.

The leading trading involves directly purchasing local food via veg box schemes. With the collective purchasing power of the community, they aim to build alternatives to the existing food supply system. The companies established the fundamental principles of fair trade for farmers, a non-profit social mission for well-being and a healthy community, ecology, and low-carbon emission for social and environmental aims, all of which have shaped these organisations' decision-making processes.

G.C. and SCF own farms. They created an online platform for ordering, and each organisation uses its farm site for packaging food aggregated from other farms, arranging collection points for delivery of box schemes in addition to a farmers' market in the case of G.C. Members commit to regular weekly pre-ordering, so farmers can plan production and guarantee income for themselves and their employees. These efforts started small but have grown. In the case of G.C., membership has increased to around 1,500 bags for 1,600 households in the local area, according to a 2018–19 annual report.

5.2 Individuals' Enjoyment, Community Health, and Well-Being for Engagement

Although the initial motivation to create the box schemes included the support of local business support and environmental sustainability, the inspiration for food purchase is, after all, good food. The taste of food and local provenance admits the quality of food. A customer confirmed their preference for the quality: "It's so noticeable how much better quality and tasty G.C. veg is and to be supporting a local business is just a bonus" (2011–2012 G.C. annual report). Customers could value the veg scheme over supermarkets. A local cook who is also a member said, "If people could taste the incredible difference between a supermarket salad leaf and one of Alice's leaves, they would be persuaded to pay the extra" (G.C. website). An SCF member also described: "Just wanted to say thanks for providing great-tasting food...After eating so-called organic foods from supermarkets, there is no comparison at all. So, so nice!" (SCF website). Seasonal eating members also appreciated: "I am really pleased with this service and am happy that I am eating seasonal, local food at an affordable price" (SCF website).

A member described pleasure from cooking unexpected produce, saying, "I especially like getting interesting varieties that I'd never see in a shop" (2020–2021 SCF annual report). Price may be a barrier to new users, but members may select food quality over price. One member described, "We want to eat local, organic food and [this] is by far the cheapest option for us. We're definitely saving money and eating more healthily—for us and for the planet" (2021 Google review for G.C.). Such sentiments may be true because food hubs without intermediaries serve local food at relatively reasonable prices compared with specialty shops or organic food stores dealing with local food.

The box schemes help people feel more connected to where the food comes from, which contributes to a sense of community. People meet at collection points, farms, and, especially in the case of G.C., a farmers' market, which help build a sense of belonging. Customers noted that the farmers' market increased their sense of community and mentioned that "the friendly stallholders" are one of the top reasons for shopping there (2015–2016 G.C. annual report). In addition, the experience of growing on the farm contributes to mental and physical health. A member confirmed, "I would like to say a big thank you to everyone for making me feel so welcome. Volunteering at Sutton Community Farm has gone a long way towards helping restore my sense of humour and making me feel valued at a particularly difficult time in my life" (SCF website).

Meeting people builds the global connection of individuals. A volunteer confirmed, "It's exhilarating to work at Sutton Community Farm, whatever the weather! I've met some awesome people, and the whole experience is making me much more aware of our connection to the world around us" (SCF website). Another said, "I feel like a valued part of a friendly community and worthwhile project" (2019–2020 SCF annual report). The community encompasses like-minded people, rendering the feeling of being "part of a community of people who actually care about the world and our impact on it—which is very heartening" (2012–2013 G.C. annual report). The pleasures of eating, in this case, and the sense of community are essential in defining a people in place.

The sense of community enables one to select the community-led box schemes over other online-based food hubs: "I have been approached by Abel & Cole at fairs and prefer to order from Sutton Community Farm for its service, locality, impact on the community, and quality of produce and service. At some point, I plan to volunteer and become more involved" (SCF website). The feeling of connection boosts collective actions towards political subjects to change the existing food system. The members understand that money goes directly to small farms using sustainable methods. A member found G.C. "for nourishing our bodies" and "for sustainable, delicious and just changing the world" food (2018–2019 G.C. annual report). A member said, "We absolutely love the great food, and it feels like we are part of the scheme—it makes us part of a radical political act at the same time" (2019–2020 G.C. annual report).

5.3 Know-How, Habits, and Notions for Local Food

A change in G.C. customers' consumption behaviour was identified, especially in shopping, eating, cooking, and transporting. The members' know-how to change habits appeared with recipes and pre-planned shopping. One member described, "It's been the highlight of our week, coming home with all the produce, working out how to cook turnips and celeriac and swede" (2014–2015 G.C. annual report). Using box schemes may save time in shopping for vegetables. Another member explained the benefits this way: "[The scheme is] something that really enriches my everyday life; it also saves me so much time thinking about which vegetables to buy and then going to buy them" (2018–2019 SCF annual report).

The events the food hubs organised on their farm sites and collection points encouraged building cooking habits. A member acknowledged this: "It was lovely to see the farm, we loved picking the vegetables, and the cookery demonstration was brilliant, it has certainly given me ideas! I used one of the recipes that evening!" (SCF website). In addition, people expected that the education on the farm sites could change future generations' eating and shopping habits and intensify bonding to the local place. A volunteer brought his son and said, "the veg box scheme and farmers' market become the norm, and his generation laugh at how their elders mainly relied on supermarkets" (2013–2014 G.C. annual report). A teacher who led school visits to G.C.'s farm said, "Not only is this a valuable resource for the local community, but it also allows our students to integrate with members of the public who visit and staff who work there. Being organic, it also teaches them to respect the local environment" (2013–2014 G.C. annual report).

Knowledge transfer and experience sharing may elicit more engagement. Members of G.C. identified that they had increased their knowledge of local food (64% agreed) and awareness of where food comes from (61% agreed), according to an evaluation report (Jaccarini et al. 2020). They do more adventurous cooking (22%), do more cooking from scratch with raw ingredients, and waste less food (13%) (Jaccarini et al. 2020). More importantly, over 90% of members walk or cycle to collect their veg boxes (2016–2017 G.C. surveys). Although we could link limited time and location of collection points to customers' feelings of inconvenience, understanding value and tolerance may lead to a change in the transportation method.

Notions associated with local food are complex. G.C. and SCF offer 'local, organic, and fresh food.' G.C. presents itself as an "organic fruit and vegetable box scheme" and "locally sourced" on its website (https://growingcommunities.org/). In terms of 'fresh' food, consumers consider locally growing and shopping the best fit. However, limited land use for farms, especially in a city centre, has allowed only small, underused space for G.C. This suggests that local food production could be unstable due to insufficiency and temporary use of the land. In a peri-urban area, land availability may be more accessible, although it needs protection from development acquisition (e.g., housing). Price also intensifies tensions. Farmers should be able to cover costs, and customers should be able to afford organic food. The box

schemes' primary income from trading should also generate financial sustainability to cover operation costs and invest in other community projects. Furthermore, with the limited land availability and fair pricing, pressures from increased needs for year-round fresh food, despite weather conditions and the hunger gap, and competition with supermarket variety have challenged the food quality.

Responding to the complex notion of local food, G.C. and SCF developed their purchase policy. They source their food from their farms, the peri-urban area, the urban hinterland, and the rest of the United Kingdom to maintain freshness and cut waste and fuel use. Their suppliers are in a wider region (e.g., Kent and Essex) and are wholesalers for staples or food which cannot be grown within the United Kingdom. In this regard, SCF values seasonality, saying, "All the food we purchase is seasonal to Europe" (https://suttoncommunityfarm.org.uk/). This claim links to the discussion on the relationship between local food and proximity (Eriksen 2016). The distance food travels and where it comes from is essential for local food. In addition, customers value quality, taste, freshness, and diversified perceptions and social relations with farmers. This value from physical, perceptual and social distances diversifies 'proximities' defining local food. Although Guzman and Reynolds (2019) recognised 30 miles for service areas of food hubs, the travel distance of food may not be so close. The worries lie that while one can negotiate the quality and meaning of place, one cannot meet the needs of box scheme members without this understanding (Blake et al. 2010; Dunne et al. 2011).

5.4 Development of Material-Functional Structure and Online Platform

The characteristics of the material-functional structure of community-led box schemes include an online platform (such as a website) and physical facilities where people can meet and share their knowledge, experience, and know-how. The online platform has also been adapted for knowledge transfer to inform members of the food's origin and how it travelled to get to them. The networks of G.C. and SCF help share experience (i.e., enjoyment, community health, and well-being) and know-how (i.e., recipes, collection locations and times, and shopping frequency). It built connections with other social media platforms (e.g., Facebook, Twitter, and blogs). Via those means, customers could communicate with farmers and other members.

G.C. and SCF have acquired new land for production scaleup in peri-urban areas. This acquisition has contributed to sustainable supply, financial stability with market varieties, such as farmers' markets and wholesale to local restaurants, shops, or cafes, and biodiversity in the slow, sustainable use of soil. As the ownership of farms became stabilised through the extension of contracts or purchases, G.C. and SCF added physical facilities (e.g., eco-friendly classrooms, cafés, kitchen facilities, and farm shops) to their farm sites. As a result, farms and collection points became pop-up sites to share growing skills and educate people about where food came from and

how they cooked. They have extended the activities through apprenticeships, local farm tours, school visits, growing events, cooking sessions, business incubators, skill workshops, and social events such as film nights. G.C. and SCF engaged low-income families, single people, unemployed parents, individuals with mental issues, students, and other vulnerabilities through their training and education programmes. Since they acquired the lands for production scaleup in peri-urban areas, G.C. and SCF posted the activities (i.e., education and training) organised in those areas on the platform for people's access.

G.C. facilitated 17 collection points and 34 for SCF in community gathering sites, such as churches, community kitchens, city farms, local food restaurants, shops, schools, and work sites. As a result, members could physically encounter the merchandise and its sellers and exchange their experience and know-how. A recurring theme is that sharing space and time is required for a sustainable city to reuse and reclaim resources (Lock et al. 2011). Agreements enabling such claims include promoting the shared sites' events and businesses online or promising left-over or donated food. This collaboration contributes to informal networking and local connections beyond the box scheme communities. The organisations posted the locations and times of collection points online. In addition, G.C. updated the online information with diverse box choices and individual items, including bakery products and order frequency options, so that customers could organise their shopping habits.

Further, the organisations applied discounts in their online order systems to engage low-income and vulnerable people in the local community. For example, G.C. gives 20% off to pensioners and accepts vouchers (e.g., Healthy Start vouchers and Rose Vouchers for pregnant women and families with young children) from low-income people. Whether food hubs are associated with exclusion or inclusion, this issue revisits the notion that local food should be for all, not just the wealthy and educated living in the correct areas (Blake et al. 2010).

5.5 Spatial and Temporal Flexibility Since the Outbreak of COVID-19

During the first lockdown in the United Kingdom, box schemes increased by 111% in the six weeks spanning the end of February through mid-April 2020 (Wheeler 2020). As a result, G.C. increased its income, more than twice that of pre-pandemic (2020–2021). Such growth stemmed mainly from the box scheme. SCF experienced a 50% increase in its box scheme order and a 70% increase in income (2020–2021).

During the lockdowns, G.C. and SCF were knowledge-transferring points between farmers, members, and residents. Since farm produce could not go to restaurants, farmers provided it to the increasing box scheme subscribers or low-income or vulnerable people within the local areas (Mert-Cakal and Miele 2020). Further, an integrated

material structure worked as infrastructure against food insecurity, enhancing mental well-being.

The organisations updated their online platforms for members to donate farm produce to local food banks and community centres. For G.C., collection points added nurseries, schools, and children's centres to feed children, which is an example of emergency public procurement. The organisations arranged logistics for delivery to the collection points using more eco-friendly vehicles such as electric bikes to reduce food miles and pollution and not be affected by the global transport system. With funding from local authorities (i.e., Barking & Dagenham and Hackney) and other organisations (e.g., National Lottery Fund), cooking projects provided food for low-income families and vulnerable people through Zoom-streaming cooking lessons. The flexibility of the online platform and collection points contributed to more opportunities for social connections. Ultimately, food hubs support the surrounding community in a crisis like the COVID-19 pandemic.

6 Discussion

Community-led food hubs have previously focused on sustainable consumption through conceptual frameworks drawn from practice theory (Crivits and Paredis 2013; Fonte 2013). The findings of the case studies reconfirm that motivations such as health and well-being drive customers to use the community-led box schemes with the initial missions set up for local business support and environmental sustainability. The findings also reconfirm the importance of knowledge and know-how for engagement, with community members adopting consumption behaviours such as cooking and shopping despite the inconvenience. Through performance, food hubs could build attachment among individual customers and food in place.

The socio-spatial transformations revealed that the community-led food hubs were not just self-sufficient. They also provided knowledge and know-how for engagement (e.g., growing workshops, apprenticeships, school visits, after-school clubs/holiday clubs, cooking lessons, business support incubators, local farm tours, growing or planting events, and social events such as film nights). They could benefit vulnerable people not only for health and well-being but also for job opportunities. Their actions, presented with material and spatial integrity, denote that community-led food hubs are evolving and surviving among other online-based food hubs.

The organisations added physical facilities to establish settings according to the expanded services. Food hubs equip packaging spaces and collection points initially needed for trading services. Then, in addition to farmland for food production, they increase spaces for education and training (e.g., classrooms, storerooms, farm shops, and kitchens). In the process, the online platform assists and supplements the function of the physical facilities and connects people to food in place. The online information is useful in connecting people to farm sites in underused space or peri-urban areas and collection points scattered in various locations and times. The online platform provides a variety of food (e.g., diverse box choices and individual items,

including bakery products and order frequency options) at more affordable prices (e.g., discounts, vouchers, and donation options). Linked to social media such as Facebook, Twitter, and blogs, the online platform connects customers with farmers, which builds solidarity for seasonal local food. It helps overcome the handicaps of physical facilities such as long distances, high prices, competition with supermarket variety and convenience, and function more effectively and efficiently.

The online platform, most of all, enables spatial and temporal flexibility, which is critical in optimising the food hubs when working with resources, such as during the COVID-19 crisis. Collection points are critical for 'siting' to connect the food hubs to local communities. The online platform could stimulate social connections and improve the local environments associated with food (i.e., schools, religious community facilities, work sites, cafes, and shops) where ordinary food consumption activities take place en masse and for emergency food provision. Previous research considered transporting by bike, public transport, and cars, or on foot for the food hub siting (Horst et al. 2011), but the current research also stresses the role of an online platform.

Accordingly, it makes sense that an online platform is an essential tool for enhancing spatial qualities associated with food and improving the urban space capacity. For example, Granheim et al. (2022) suggested digital food environments and insisted that when interconnected with physical environments, an online platform can enhance all dimensions, including availability, accessibility, and environmental sustainability. The present research supports Granheim et al.'s conclusion. The online platform in the case studies increased the availability of food hubs and enhanced accessibility, convenience, and affordability. Overall, online-based food hubs can revitalise vacant or underused urban spaces.

Most of all, online-based food hubs help with food provision when recovering from food scarcity. The platform helps enhance physical, social, and financial access to food, enabling young, low-income, and vulnerable people to achieve social equality. Target groups' access to education, training programmes, and public access via social events can reinforce the production of social space. Subsequently, food hubs participate in operating social spaces and places within local areas, thus linking to Lefebvre's (1991) 'social production of space.'

7 Conclusion

Online-based food hubs directly connect producers and customers, working towards an alternative local food system. The surge in box schemes as online-based food hubs, especially since the COVID-19 pandemic, shows that the innovation associated with an online platform for alternative food practices is growing. Moreover, as social innovations, community-led food hubs are evolving places for community health and well-being, among other online-based food hubs.

The present research case studies represent a model with farms in peri-urban areas, linking small, organic farms and facilitating collection points in urban centres. This

research proposes an evolutionary step of the community-led food hubs for social connections; an online platform is an effective tool to mobilise resources to connect a diverse population in a local community. More importantly, an online platform interconnected with physical environments can enhance spatial qualities and capacity and support food access, thus creating sustainable urban space development.

Practice theory is a framework for understanding food practices through the interactions of people, food, and place, highlighting a holistic approach. Methodologically, the present study's long-term review of spatial and temporal transformation confirms the framework's usefulness in analysing the nature of food practices of online-based food hubs through creation and appropriation in the United Kingdom. Furthermore, it revealed evolution in these cases.

The academic and political interest in social innovations is not new. However, high social demand, especially for food since COVID-19, has reinvigorated social innovations for social connections and sustainability. Consequently, developing online-based food hubs is vital as we prioritise social value and connections for society's recovery, considering the vulnerable and low-income people damaged severely by the COVID-19 pandemic. The difference now is the digitalisation which revealed remarkable evidence and potential.

This research is timely, responding to the changing awareness and consumption behaviours after COVID-19; however, its challenges could become an opportunity for social integration and equality. One of its limitations is that the two cases may be difficult to generalise, but it reflects the contextual influence in selecting the two cases in different local contexts based on land availability. Finally, for future research, the theoretically-drawn practice approach could help analyse other online-based social innovations in cities. Therefore, researchers could create synergy in an alternative food network or local food system and contribute to sustainable regeneration programmes to improve the built environment.

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Third Places: The Social Infrastructure of the Smart City

Katharine Willis

1 Introduction: Smart Cities and Infrastructure

Smart cities typically offer a new model of urban management delivered through an efficiency paradigm for city services. For example, cities are said to be 'smart' when streetlamps have sensors to indicate when they are broken; when parking spaces monitor car behaviours and when pollution sensors send feedback to central management systems to highlight pollution spikes (Willis and Aurigi 2017). One of the underlying promises of 'smart' cities is that they deliver a better management of city infrastructure, which in turn delivers better governance through better services (Rabari and Storper 2015). In the smart city, infrastructure is therefore understood primarily as networks. According to Luque-Ayala and Marvin (2015), in their critical reflection on smart urbanism, the 'promises' of flexibility, control, growth, transformation, etc. offered by smart urbanism have the potential to reshape the future priorities of urban governments'. This type of approach is central to much of the smart city agenda, which focuses on identifying urban challenges or 'problems' which technology can 'solve'. There are a number of critiques of this approach; the vision is clearly deterministic in nature and understands the method of fixing problems using technology as a set of causes that produce obvious effects (Aurigi 2005), which focuses on the 'top-down' approach of systems thinking which is delivered through a centralised line of control. The top-down and globalised nature of smart infrastructure also gives little thought to what Sassen has termed the 'incompleteness of cities' or the place-based and citizen-led inhabitation and adaptation of urban spaces (2012) and smart technologies are often introduced without an understanding of the local spatial and social context.

In this chapter, we seek to reframe conventional thinking around digital infrastructure and how it can be integrated into more place-based and contextualised ideas of

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social infrastructure. The chapter first introduces an alternative approach to thinking about infrastructure not just as digital, but also as social infrastructure, through a discussion about how social infrastructure might also underpin smart cities. The question that it seeks to address is the role of social infrastructure in the development of smart cities. To do this, this chapter explores the critical role of place in social infrastructure by reviewing Jacobs et al. (1993 [1961]; Klinenberg 2018; Oldenburg 1999). The chapter then proceeds to draw together the characterisations and capacities of social infrastructure with those of digital infrastructure to understand how the bridging of the two might support overcoming digital and social divides. A framework is presented where these characterisations are mapped against each other to establish how issues such as trust, access, agency, and skills can be created in urban spaces. The final section of the chapter broadens this framework to consider how a place-based approach to social and digital infrastructure can embed digital capacities, and how access has the potential to address the problems of digital divides.

2 Digital Divides in the Smart City

The politics and power networks that underlie smart cities are important to address, to establish how certain groups may benefit and others may, in fact, be excluded from any benefits of smart city initiatives. Rather than merely perpetuating existing divides, the smart city can reinforce social inequalities, since informal or marginal populations often have limited access to existing technical and urban infrastructures. In the smart city, marginalised communities often lack the circumstances, access, and understanding of the importance of technology for empowering themselves; either as individuals or as a collective, they lack agency (Melgaço and Willis 2017). Central to this is recognising that many of the urban problems currently being defined in corporate-led smart city projects are often disingenuous and derive from a flawed techno-deterministic model of optimisation of resources which are deemed to require a ‘spatial fix’ (Martin et al. 2019). Datta (2018) points out that exclusion in digital spaces typically mirrors that in physical spaces since while exclusion from the propertied citizenship does not exclude access to digital spaces, lack of digital access often overlaps with the absence of property rights. She points out that while this may appear paradoxical, it is in fact deeply connected, ‘since digital access offers the illusion of a neutral, transparent and equal digital civil society unattached to material socio-economic markers’. This is set in a broader context of what is termed the ‘digital divide’ (Mossberger et al. 2003; Warschauer 2003)which acknowledges that technological development does not in itself overcome the broader challenges of the lack of technical skills, poor economic opportunities, and existing democratic divides.

3 Social Infrastructure

Smart city projects typically focus on the implementation of digital infrastructure, such as sensor networks, data platforms, and interfaces, which are the points where people encounter the 'smart' of the city. However, this highlights a gap in the approaches to smart cities, which has failed to value the importance of 'social infrastructure', encompassing urban community insights as well as a recognition of civic and third-sector organisations, social enterprises, co-operatives, and places such as libraries, parks, and community centres. Social infrastructure is necessary to nurture public life, but also to address and prevent inequalities in urban life: countering social isolation, negotiating differences, and creating places for all—regardless of age, race, gender, sexuality, or income. While the primary focus of social infrastructure has been on place-based communities and networks, in a society where digital networks are used to maintain and foster social relations (Castells 1996), the nature of inclusion and exclusion also needs to be seen as digital (Warschauer 2003). However, endeavouring to prioritise and focus on the people and place of the city shifts the basis for smart cities from a technical 'black box' infrastructure of material sensors, digital networks, and interfaces to one of a social infrastructure, which is embedded within specific spaces in the cities, and is relational and practical (Star 1999, p. 381–382). Social infrastructure is related to the interactive and collective nature of local connections and comprises the range of activities, organisations, and facilities supporting the formation, development, and maintenance of social relationships in a community. It can include the provision of community facilities, community development, local networks, community groups, and organisations; small-scale funding to help fund local projects; and personal learning and skill development to help develop community leadership and volunteering (both formally and informally). For Flora and Flora (1993) understanding the existing social infrastructure and fostering it further is essential for forming a basis for 'purposive community action', that is, collective agency. The social connections and socialities built and maintained by accessing social infrastructure can create a 'social surplus' or 'social capital', encouraging trust, civility, encounters, and common purposes which can be seen as an alternative form of capital (Latham and Layton 2019). Putnam (1993, 2000, p. 35) defined the concept of social capital as 'features of social organisations, such as networks, norms, and trust that facilitate action and cooperation for mutual benefit'. Bourdieu (1986) also seeks to define 'capital' as 'the set of actually usable resources and powers', that plays a vital role in producing and reproducing profits in individuals' life opportunities. Social infrastructure, therefore, refers to the networks of spaces, facilities, institutions, and groups that create affordances for social connection and the building of reciprocal trust in physical places.

3.1 Third Places

One of the features of social infrastructure (and the capital it creates) is the role of places: the physical locations and meeting places that help develop social infrastructure. Putnam (2000) talks about the characteristics of social capital as being when a group of neighbours informally keeps an eye on one another's homes and that social capital can be found in friendship networks, neighbourhoods, churches, schools, bridge clubs, civic associations, and even bars. However, in the early fifties in the USA, Jane Jacobs was an urbanist who first highlighted the importance of the social life of the street and the neighbourhood. Jacobs argued that we needed to understand, and understand thoroughly, specific places' (Jacobs 1993 [1961], p. 410). Through her seminal study of a New York neighbourhood, she demonstrated the value of social infrastructure and how it was linked with the physical form of the city, its streets, sidewalks, parks, and that it had a variety of uses. She developed a thesis on why these elements and characters of a small-scale city neighbourhood needed to be valued, and built a body of evidence from observing her own neighbourhood, which has been shown to be transferrable to a number of other urban contexts. Oldenburg (1999) terms these 'third places' which are informal public gatherings spaces where people come together with equal rights of access, free of charge, to develop friendships, interact, and benefit from being part of a social community. Oldenburg characterises the third place in the context where 'the first place is the home, the second place is the work setting, and the third place is a generic designation for a great variety of public places that host regular, voluntary, informal and happily anticipated gatherings of individuals beyond the realm of home and work' (Oldenburg 1999, p. 16). Oldenburg defines third places as essential ingredients for a well-functioning democracy, for developing social capital and providing social support outside the home (the first place) and work (the second place). Third places can include cafes, bookshops, post offices, community centres, libraries, salons, sports clubs, and other semi-public spaces such as streets, parks, and pavements. Their accessibility and inclusiveness mean that they can contribute to a social infrastructure since they help build social capital by levelling out social relations, regardless of economic, social, or cultural differences. For Klinenberg (2018), social infrastructures are necessary for supporting public life, but also for addressing social isolation, negotiating differences, and creating places for all—regardless of age, race, gender, sexuality, or income. The third place also recognises the role of the physical space and place, since social infrastructure is intrinsically linked to places such as libraries, parks, community centres, and even cafes..

4 Open-source Urbanism

A place-based approach to social infrastructure can embed digital capacities, and access to those places has the potential to reclaim the 'smartness' to build on their social infrastructure. Sassen (2011) refers to 'open source urbanism' and argues that cities themselves can be powerful actors and that there are multiple ways in which the 'city talks back'. An open-source approach to smart cities reconfigures models of citizenship and participation so that forms of engagement and involvement can be invented and controlled by the people (Jiménez 2014). It takes a model of participation, or sharing data that is termed 'co-production' whereby 'citizens perform the role of partner rather than customer in the delivery of public services'. Willis and Aurigi (2017) propose that this sees new forms of sharing, enabled by technological devices and platforms which work by enabling citizens to create, adapt, and exploit data, and can create new ways in which citizens participate in the governance of the city, which includes low-cost citizen sensing, crowdfunding platforms, open data initiatives, and repurposed social media-based sharing platforms.

An open-source urbanism approach focuses on bringing local people together by building Hess and Ostrom's common-pool resources; that is, shared activities and cooperation include shared ownership platforms (Shaheen 2011), makerspaces and fablabs (Niaros et al. 2017), crowdfunding (Carè et al. 2018), and platform coops (Scholz 2016). Another component is how digital capital is embedded within new peer-to-peer economic models and participatory urban planning techniques that enable people to actively shape their urban environment to collaboratively address shared urban issues (Ampatzidou et al. 2016) (de Lange and de Waal 2013). These platforms work on models of sharing as a new paradigm of distribution and ownership of resources and include shared transportation modes, public spaces, information, and new services. For example, in Amsterdam, de Waag has set up a series of principles for a smart city which sees opportunities for smart citizenship and citizen sensing accompanied by the revival of the idea of the commons to foster bottom-up initiatives and community self-determination. In this approach, not only does the governance of physical space follow the logic of the commons, but the same logic is also applied to the management of data, especially when these data are collected by citizens with their own sensors (Veenkamp et al. 2020). Similarly, when participatory aspects of social networks are coupled with highly mobile urban citizens, they create opportunities for new types of social organisation and collaborative decision-making (Cowley 2010; Linders 2012). The common thread in these concepts is that technologies need to serve and work for people and communities first in terms of their design and deployment but also in relation to setting local civic and infrastructural priorities.

5 A Framework for Linking Social and Digital Infrastructure

To address the challenges of digital divides perpetuating social divides, we need to bring together digital and social infrastructures to design technologies and ways of connecting digitally both for, and with, local communities and in local places. This suggests taking Hess and Olstrom's (2003) approach to thinking about information not as abundant commons but as a common-pool resource: a resource that requires storage and preservation, over which one must define rights and rules of access, extraction, exclusion, and alienation. Digital capital can be a bridge between online and offline life opportunities that not only allows previous capital to be efficiently exploited in the digital realm, but also fosters it, reproducing profits in the offline realm. One immediate example of how this could be enacted in cities is to treat access to the Internet as a right, similar to utility, rather than as a payment service. For example, Hampton et al. (2010) found in a study of Wi-Fi use in public spaces that the activities of Wi-Fi users in parks and streets contributed to broader participation in the public sphere. Parks may not seem the most obvious places for free Wi-Fi, however, in New York, public Wi-Fis are available across the park network, which means that parks have become a space for people to work and socialise, mixing both digital and physical spaces (Bryant Park Corporation 2014; Piedmont-Palladino 2011).

If we look at some of the examples of an open-source approach and align them with the aspects of social and digital capital they enable, we can start to see the bridge between social, and digital infrastructure (Table 1). The three tables map three types of third places: social public, social resources, and social community, against the enablers of digital and social capital.

The bridging of social and digital capital can happen when digital access and connectivity is made open in these 'third places' such as streets, cafes, parks, and libraries. The linking of third places with digital access can therefore build capacity in a community with socio-digital infrastructure.

6 Summary

Placemaking through social infrastructure can build the capacity of communities by providing the best knowledge and skills that can empower the most excluded, and generate a sense of belonging. This approach addresses a gap in the approaches to smart cities, that has failed to value the importance of urban community insights as well as a recognition of civic and third-sector organisations, social enterprises, co-operatives, and places such as libraries and community centres (the 'third places' of Jacobs and Oldenberg); that is the social infrastructure of the city. It introduces various models of placemaking and how people can interact and shape the city, which starts with the local neighbourhood and not with technology. We need to engage in 'smart' in novel ways driven not by the adoption of whatever technology is trending

Table 1 Types of Third Places that link or bridge digital and social capital

Third place type 1: Social public spaces:Streets, pavements, and community centres	
Digital Capital	Social capital
Low barriers to digital access for more excluded groups—Public wi-Fi and sensor networks (e.g., LoRaWAN)	Everyone has access—Removing barriers to **access** between social groups
Building trust in digital data and information—Open data platforms (Davies 2020)	Building **trust** in community through access to information and knowledge sharing
Access to political decision-making through digital rather than at town halls or limited timeframe consultation exercises (Sadoway and Shekhar 2014)	Involvement in **political** decision-making processes on a larger proportion of community—Public participation platforms
Third place type 2: Social resources:Libraries, repair cafes, and community gardens	
Digital Capital	Social capital
Digital co-creation and application to local challenges in a longitudinal timeframe—Living labs, makerspaces, and fablabs (Cosgrave et al. 2013; Niaros et al. 2017)	New forms of social connection that create **denser social networks** at a local scale-Libraries and community gardens
Digital inclusion skills—digital skill training in libraries and community centres	Increased knowledge capacity and **skills** of more excluded members of community
Low-level barriers to ownership, maintenance, or use of digital devices (Mclaren and Agyeman 2015)	Increase in **public goods** creating new social groups and ties who take responsibility for maintaining local resources—repair cafes, tool libraries, e-bike or car hires, etc
Third place type 3: Social community places:Playgrounds, parks, and cafes	
Digital Capital	Social capital
Low cost and non-expert digital capacity with everyday technology—Everyday interfaces such as QR codes	Building community **capacity** to act in community spaces
Community-led social networking platforms-Digital noticeboards and crowd-sharing platforms (Ampatzidou et al. 2016; Carè et al. 2018a)	Noticeboards, timebanks, and volunteering groups- cafes and community spaces
Digital data gathering and analysis by non-experts in the context of their own neighbourhoods—Citizen sensing initiatives (Balestrini et al. 2016; Haklay 2013)	Linking social networks of children, schools, and community groups to political **agency** and behaviour change in their local neighbourhood

Source The author

to produce global solutions but by leveraging local resources, people, and wisdom in placemaking and urban design practices in real cities and with real people. This can create a bridge between social and digital capital and recognise the importance of not just digital infrastructure in creating smart cities but also social infrastructures and how they can meaningfully respond to local places and spaces.

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