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BY
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Governments today are undergoing a digital transformation, actively designing, developing, and implementing computational tools and algorithms to improve the efficiency of public administration and services. This shift toward the datafied state entails the laborious task of converting vast amounts of government and public sector information into machine-readable formats. In democratic regimes, the disclosure of this extensive public sector data and making it accessible for reuse have become critical benchmarks for assessing government transparency and accountability.

This process of infrastructuring public datasets engages many old and new actors, from people who build and maintain "public" data infrastructures to those who monitor or repurpose these newly available datasets. *"Data publics" refer to these heterogeneous groups of people who build, maintain, and use public data infrastructures as a means of civic engagement.* Consequently, the concept of data publics raises important questions regarding the politics of civic engagement and participatory governance within the datafied state. Studies on data publics have explored who is capable of and encouraged to participate in this new mode of civic engagement, as well as the political potentials and limitations of data publics.[1]

Based on my ethnographic research of Korean open data communities during the COVID-19 pandemic, I will discuss how different formations of data publics evolve in relation to local open data initiatives. South Korea — a postcolonial, post-authoritarian country with a history of rapid and tumultuous democratization — serves as a valuable site to examine the conceptual

1   Evelyn Ruppert, "Doing the Transparent State: Open Government Data as Performance Indicators," in *The World of Indicators*, eds. Richard Rottenburg, Sally E. Merry, Sung-Joon Park, Johanna Mugler, and Evelyn Ruppert (Cambridge: Cambridge University Press, 2015), 127–150; Anne L. Washington, "Who Do You Think We Are? The Data Publics in Digital Government Policy," in the *Proceedings of the 52nd Hawaii International Conference on System Sciences* (January 2019): 3264–3272; Jean Burgess, Kath Albury, Anthony McCosker, and Rowan Wilken, "Everyday Data Publics," in *Everyday Data Cultures* (Cambridge: Polity, 2022), 115–143.

limitations of existing models of data publics. While the concept of data publics is rooted in the western notion of publics as a counterweight to state practices, the Korean case illustrates how data publics can complement, and even partner with the state, particularly when framed within the affective relations of patriotism.

The purpose of this essay is to highlight the importance of connecting contextualized and historically grounded accounts of public formation and evolution to the study of data publics. In the current environment of the datafied state, how have these groups evolved and who have emerged as new significant stakeholders? To address these questions, the essay brings together scholarship from Asian and Korean cultural studies that challenge the western-centric theorization of the "public." By illustrating how local configurations of the state, market, and civil society have shaped a different formation and functioning of publics in South Korea, I urge the need to re-formulate the concept of data publics to incorporate these historically driven, local manifestations of the public. Only then can we decenter the study of global data cultures without relegating those outside the Anglo-American world to sites of difference.

Global Open Data Movement and the Emergence of Data Publics

The emergence of the global open data movement in the early 2010s aimed to enhance government transparency and accountability by releasing public sector information in digital formats. Open data initiatives were strongly influenced by the open-source movement in the 1990s–2000s, which lies at

the heart of the Silicon Valley ideology of free software and counter-culture libertarianism.[2] In the United States, open data became one of the central pillars of President Obama's Open Government Initiative in 2009, with the goal of making government information machine-readable for all. By making these datasets available, governments committed to ensuring transparency and accountability to their citizens, while also expecting to drive innovation in public services and foster new businesses through data reuse. Collectively, the global open government data movement was based on these three key foundations[3]:

- *Transparency:* Enabling citizens to monitor government activities and initiatives

- *Social and commercial value creation:* Promoting opportunities for innovation and commercialization through the release of public sector data

- *Participatory governance:* Empowering citizens to actively engage in public decision-making and policy development

International organizations like the United Nations and the Organisation for Economic Co-operation and Development (OECD) have heavily promoted open government data (OGD) to their members and partner countries as an indicator of mature and innovative democracy. OECD, in particular, created the Open-Useful-Reusable data index (OURdata) to assess government efforts to support OGD.

Since the enactment of the Electronic Government Act in 2001, the South Korean government has pursued digital government as a core policy for national development. Particularly, OGD materialized through President Roh Moo-hyun's e-government initiatives in the early 2000s and the subsequent

2   Simon Chignard, "A Brief History of Open Data," *ParisTech Review*, March 29, 2013, https://www.paristechreview.com/2013/03/29/brief-history-open-data/.

3   Judie Attard, Fabrizio Orlandi, Simon Scerri, and Sören Auer, "A Systematic Review of Open Government Data Initiatives," *Government Information Quarterly* 32, no. 4 (October 1, 2015): 399–418, https://doi.org/10.1016/j.giq.2015.07.006.

Park Geun-Hye administration's Government 3.0 — a master plan for a new governance paradigm that puts forth openness, sharing, communication, and collaboration with civic actors as founding principles of public sector reform.[4] As part of Government 3.0, President Park signed the Public Data Act in 2013, which mandated the disclosure of government and public sector data in machine-readable formats. Since then, South Korea has consistently ranked first in OECD's OURdata index for three consecutive years (2017, 2018, 2019), receiving high scores in data availability, data accessibility, and government support for data reuse.[5]

These top metrics in open data initiatives meant more than mere statistics in South Korea — they were celebrated as symbols of national achievement and international recognition of South Korea's digital prowess. The Korean state actively promoted these successes as evidence that "the world is recognizing the Korean government's digital competitiveness" and as a demonstration of South Korea's leadership in driving global digital government transformation.[6] Promoting digital government as a national project is a continuation of South Korea's history of techno-nationalism. Harnessing sociotechnical imaginaries of Korea's digital infrastructure projects as symbols of modernity encapsulates the developmentalist desire to overcome the national traumas of war and colonialism through technological advancements. In other words, the Korean state viewed open government initiatives as nation-building opportunities to showcase the country's global competitiveness in technology, digital innovation, and democratic infrastructures.

Within these global and localized contexts of the open data movement, the term "data publics" emerged to describe new groups of people who responded to OGD across the globe. As the objective of OGD was not just to establish a technical foundation but to encourage citizens to participate and

4   B. Shine Cho and Sangoh Yun, "Yŏllin chŏngbu shidaeŭi shiminch'amyŏ: shibik'aek'ingŭi yuhyŏng pullyu yŏn'gu [Citizen Participation for Open Government: A Typology of Civic Hacking]," *Han'gukchŏngch'aek'ak'oebo* [*The Korean Association of Policy Studies*] 26, no. 1 (2017): 177–202.

5   OURdata index evaluates the government's effort to support open government data through three criteria: Data availability, which measures "the extent to which governments have adopted and implemented formal requirements to promote open government data at the federal/central level"; data accessibility, which measures "the extent to which government data are provided in open and re-usable formats"; and lastly, government support for data reuse, which measures "the extent to which government play a proactive role in promoting the re-use of government data inside and outside the government" (see Guillaume Lafortune and Barbara Ubaldi, "OECD 2017 OURdata Index: Methodology and Results," *OECD Working Papers on Public Governance*, no. 30 (December 11, 2018): 1–45, https://doi.org/10.1787/2807d3c8-en).

6   Ministry of Interior and Safety (MoIS), "South Korea Tops the 1st OECD Digital Government Evaluation: Amid Crisis, the World Recognizes South Korea's Digital Government Competitiveness," October 16, 2020, https://www.mois.go.kr/frt/bbs/type010/commonSelectBoardArticle.do?bbsId=BBSMSTR_000000000008&nttId=80502.

collaborate in governance processes, it mobilized a multiplication of publics who would monitor and reuse OGD to "actively witness the affairs of the state."[7] According to Evelyn Ruppert, data publics are not mere recipients of data; instead, they "are incited to do their own experiments, establish matters of fact, see the state for themselves and disseminate their results to others … data publics are constituted by dynamic, complex, and uncertain arrangements of actors mobilized and provoked by open data."[8] These people include civic hackers, data journalists, and activists who convene through data portals, Freedom of Information Act requests, and other platforms to reuse OGD according to their interests and capabilities.

In this sense, the concept of data publics is heavily influenced by western political notions of the "public"[9] and the "public sphere,"[10] which emphasize the significance of publics in fostering critical public deliberation free from state intervention and economic pressures. Similarly, in existing scholarship, data publics are envisioned as critical civic actors in today's democratic systems. They are expected to enhance civic engagement by monitoring and utilizing public sector data. This western conception of data publics is premised on these civic actors acting as a counterbalance to state practices, those who can foster independent civil society using the newly available "tools" (or public sector data).

Cultural studies critiques that scrutinize the idealized portrayal of a universal public sphere and its exclusionary tendencies have been useful in identifying the politics of inclusion within the realm of data publics.[11] Who is invited or granted access to different formations of data publics? For instance, Anne L. Washington sharply points out that open data initiatives have promoted participation and collaboration between the government and civic actors without a clear delineation of who constitutes this public.[12] Open government policies, therefore, have exhibited limitations

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7 Washington, "Who Do You Think You Are?" 3266.

8 Ruppert, "Doing the Transparent State," 3.

9 John Dewey, *The Public and Its Problems* (Athens: Swallow Press, 1927).

10 Jürgen Habermas, *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society* (Cambridge: MIT Press, 1991).

11 Nancy Fraser, "Rethinking the Public Sphere: A Contribution to the Critique of Actually Existing Democracy," *Social Text*, no. 25/26 (1990): 56–80, https://doi.org/10.2307/466240.

12 Washington, "Who Do You Think We Are?"

in representing the diverse consumers of open data and in recognizing the varying technical capabilities possessed by these consumers.

Furthermore, despite the rich body of cultural studies scholarship from the Global South that has extensively challenged and reformulated the western notion of "publics," these critiques have not been fully integrated into the current formulations of data publics. In the following section, I will illustrate how critiques from Asian cultural studies can provide valuable insights for efforts to dewesternize the liberal understanding of data publics.

Lessons from Asian Cultural Studies to the Study of Data Publics

Historical and contextual understanding of how publics emerge in non-Western contexts needs to be critically reflected in the formulation of data publics. Asian cultural studies, in particular, contribute to destabilizing the state-society premise that underlies the liberal conception of data publics.[13] The global popularity of the public sphere theory comes with an imagination that assumes civil society resides outside of the state and holds the potential to question, or even overthrow, state power. The rise of public sphere theory in South Korea in the late 1980s was rooted in this hope for *simin* (citizens) to act as agents of political reform and social movements.[14] As South Korea was undergoing a critical transformation from three decades of authoritarianism to a national democratization movement, Korean scholars found the promise of the public sphere theory — a civil society independent from state power and fostering an alliance of enlightened middle-class citizens — extremely appealing. As Jiyeon Kang diagnoses, since Jürgen Habermas' 1996 lecture at the Seoul National University and the following publication of his translated works, the public sphere theory

13 Myung-koo Kang, "Hunmin'gongnonjangŭi ironjŏk kusŏngŭl wihayŏ: habŏmasŭ pilligi, pik'yŏgagi, nŏmŏsŏgi [Toward a Formation of Hunmin Public Sphere: Appropriating and Reformulating Habermas]," *K'ŏmyunik'eisyŏn iron* [Communication Theory] 9, no. 2 (2013): 10–51; Myung-koo Kang, *Hunmin'gwa Kyemong: Han'guk Hunmin'gongnonjangŭi Yŏksajŏk Hyŏngsŏng* [*Didactics and Enlightenment: The Historical Formation of the Korean Didactic Public Sphere*] (Seoul: Nanam, 2016); Jiyeon Kang, "Old and New Questions for the Public Sphere: Historicizing Its Theoretical Relevance in Post–Cold War South Korea," *Media, Culture & Society* 43, no. 1 (January 1, 2021): 158–70, https://doi.org/10.1177/0163443720939480; Kuan-Hsing Chen, "Civil Society and Min-Jian: On Political Society and Popular Democracy," *Cultural Studies* 17, no. 6 (November 1, 2003): 877–96, https://doi.org/10.1080/0950238032000150075.

14 Kang, "Old and New Questions."

has been widely embraced as one of the canons in Korean communication and cultural studies.[15]

However, starting in the 2000s, there has been a growing recognition of Eurocentrism in Asian communication and cultural studies internally.[16] These scholars began to critique the colonial paradigm of global knowledge production — which positions the West as the primary site of theory production while the rest is relegated to case studies for testing these theories — and strived to recover the political capacity of local theories. Myung-koo Kang's reformulation of the public sphere came out in response to these concerns.[17] To dewesternize the Habermasian idea of the public sphere, Kang questioned whether a civil society that is independent and autonomous from the state has ever existed in South Korea. Tracing the genealogy of the Korean public sphere from the Choson Dynasty (1392–1897), he reveals it was an exclusive domain reserved for discussions among the king and his bureaucrats, almost entirely composed of the ruling class men. As reflected in the concept of kong (the public; 공; 公), which means both the "public interest" and the "virtue of the ruler who leads the people," the public sphere at this period was essentially didactic and aimed at indoctrinating the populace to serve the royal dynasty.[18] According to Kang, this didactic nature persisted throughout South Korea's colonial and postcolonial eras with journalists, reformists, and intellectuals serving as pivotal figures in the Patriotic Enlightenment Movement (1905–1910) to subsequent phases of rapid modernization and democratization.[19] As the public sphere led by these power elites aimed to educate other members of the society "under the umbrella of the nation-state, rather than serving the welfare of the people," this period of violent and rapid growth delimited Korea's opportunity to develop and mature an independent civil society.[20] Therefore, patriotism continues to play a vital role in shaping the function of the Korean public sphere.

15   Kang, "Old and New Questions."

16   Tae-Il Yoon, "Han'guk k'ŏmyunik'eisyŏn yŏn'guesŏ sŏgujungshimjuŭi nŏmŏsŏgi [Beyond Eurocentrism in Korean Communication Studies]," Han'gugŏllonhakpo [Korean Journal of Journalism and Communication Studies] 58, no. 6 (2014): 445-474.

17   Kang, "Hunmin'gongnonjangŭi ironjŏk kusŏngŭl wihayŏ [Toward a Formulation of Hunmin Public Sphere]"; Kang, Hunmin'gwa Kyemong [Didactics and Enlightenment].

18   Kang, "Old and New Questions."

19   A nationalist project that was held by Korean intellectuals to reclaim sovereignty from Japanese imperialism. It emerged as a response to the signing of the "Eulsa Treaty" in November 1905, which was forcibly concluded by Japan to deprive Korea of its diplomatic rights. The purpose of this movement was to cultivate the modern capabilities of the Korean people through cultural activities such as education, media, religion, and industrial development. Progressive intellectuals and urban citizens primarily led this movement.

20   Kang, "Hunmin'gongnonjangŭi ironjŏk kusŏngŭl wihayŏ [Toward a Formulation of Hunmin Public Sphere]," 51.

I argue that it is difficult to detach this looming presence of nationalistic aspiration, rooted in Korea's fractured and externally coerced history of modernization, from the formation of data publics in South Korea today. Public and academic discourse on Korea's open data communities and civic tech frame them as reliable partners of the state that could assist in addressing social problems utilizing public data and their advanced digital capabilities. Much of the literature on citizens' engagement with public sector data in Korea — also frequently described with terms like "civic tech" and "civic hacking" — characterizes it as an entrepreneurial mode of citizen-led, public service innovation that shows the potential for citizens to become collaborative partners of the government.[21] Thus, open data communities in South Korea align more closely with the role of "government service developers," who contribute to improving the design and delivery of public services. This attitude has been particularly salient in various open data communities that emerged during the COVID-19 pandemic. The story that follows provides a snapshot of the evolving relationship between the Korean state and data publics, particularly in the context of COVID-19.

Data Publics in South Korea's Digital Response Against COVID-19

In July 2020, the South Korean government implemented nationwide QR code entry log systems in response to the COVID-19 pandemic. This mandate required all individuals to scan their personal QR codes when entering facilities with a high risk of virus transmission, including various public spaces such as bars, cafés, restaurants, libraries, and more. The Korean government urged people to contribute to the collective effort of monitoring COVID-19

21 Cho and Yun, "Citizen Participation"; Jiwoo Hyun and Sangoh Yun, "Saeroun shiminch'amyŏ: saengt'aegye kwanjŏmesŏŭi shibikt'ek'ŭ pigyobunsŏk [New Citizen Participation: Comparative Analysis of Civic Tech from an Ecosystem Perspective]," *Han'gukkonggonggwallihakpo* [*Korean Public Management Review*] 32, no. 3 (2018): 349-379; Joonhyeog Park and Suyoung Kim, "Tijit'ŏl konggonghaengjŏngesŏ shiminch'amyŏ tan'gyee kwanhan yŏn'gu [Citizen Participation in Digital Public Administration]," *Han'guksahoebokchihaengjŏnghak* [*Journal of Korean Social Welfare Administration*] 23, no. 1 (2021):175-205.

by scanning their QR codes and leaving their entry logs in the government's contact tracing database. This data collection aimed to provide health officials and contact tracers with individual location data so they could use the information to identify COVID-19 hotspots. The establishment of this large-scale public health surveillance infrastructure was not solely the result of government and state authorities like the Korea Centers for Disease Control and Prevention and the Central Disease Control Headquarters. Instead, it emerged from an extensive collaboration between government institutions, major Korean tech companies like Naver and Kakao, as well as various civic data communities that played a crucial role in collecting and maintaining COVID-19 data. Cultivating close ties with relevant state officials, these groups created various COVID-19 related digital services reusing public data to assist the government in need. Particularly, civic data communities, coalescing under the name COVID-19 Joint Response Team, offered policy recommendations in open COVID-19 data formats, developed mobile applications that would assist efficient allocation of protective equipment, and formulated privacy-protecting safety codes for the nationwide distribution of the QR check-in system.

A patriotic attitude served as a crucial motivation, as demonstrated by many members of the COVID-19 Joint Response Team with whom I engaged. For instance, one member who participated in developing privacy-protecting safety codes for the government's COVID-19 surveillance infrastructure explained in a public interview that they joined the project to "donate my skill when the country is in need."[22] Despite the government's offer to compensate their work as an outsourcing arrangement, the team declined because they did not want the paperwork to take up too much time. "We wanted to solve this national crisis with the government," another interviewee commented. As reliable partners of the state, they played a vital role in the development of Korea's technocratic, data-driven response to

22 The interviews can be found here (written in Korean): https://codefor.kr/g/home/news/5/13

the pandemic. Here, "pandemic data publics" came into being — those that participated in producing, distributing, and maintaining COVID-19 data infrastructures. These communities established close ties with state institutions and became integrated into the fabric of state governance. Alongside national achievements in e-governance and open data initiatives, these "innovative" forms of civic participation were presented as evidence of Korean citizens' advanced digital capabilities and their democratic usage. In other words, these data publics in South Korea have been heavily co-opted, and absorbed into the Korean state's developmentalist and nation-building project of "Digital Korea."

When the state-society relationship is forged through such affective relations of patriotism, data publics' potential to critique or problematize state affairs becomes limited. Rather than being vigilant observers of the state, they become benign forms of civic participation — participation that the state finds comfortable promoting and incorporating into state governance. Reformulating the concept of data publics allows it to capture such forging of alliances and strategic co-optation between the state and civic data communities. As discussed above, Korean cultural studies on the evolution of the public sphere in South Korea offer a valuable resource to explain these changing dynamics. The affective alignments between the state and data publics must be situated within Korea's local configuration of state-society relationships, which is heavily shaped by nationalistic desires for technocratic futures.

Reformulating Data Publics

The project of dewesternization ultimately lies in repositioning nontraditional sites of knowledge production within the domain of theory work, where new theories are generated and old ones are critically reevaluated. The South Korean context contributes to the concept of data publics by questioning its implicit assumption that data publics exist as separate entities outside of the state. When these data publics' techno-optimistic vision deeply aligns with the state[23] and maintains strong partnerships in materializing these objectives, it becomes challenging to differentiate these actors from institutional forms of governance. Thus, the COVID-19 Joint Response Team illustrates a case where citizens' engagement with public sector data becomes a hegemonic mode of participation mobilized in the name of patriotic duty.[24] To better capture these cases, I suggest reformulating data publics as *a changing configuration of actors involved in developing, maintaining, and using public data infrastructures,* to unsettle its previous assumption of the state/society divide. By focusing on the evolving configurations (and reconfigurations) of heterogeneous actors, this formulation allows for examining the unequal social relations and power dynamics that data publics remediate. For example, this perspective explains how bureaucrats, state authorities, industry players, and civic data communities came into compromised alignments and ambivalent collaborations in cultivating Korea's pandemic data governance. Hence, data publics as an analytical framework is inherently precarious and organic: the question then becomes *when is a data public* instead of *who or what is a data public*.[25]

This reconceptualization of data publics echoes Jonathan Gray's suggestion to view open data as "infrastructural devices", rather than as simply a

23 Avle et al. (2020) explain how techno-optimism becomes a technique of governance that is harnessed for nation-building, particularly in the Global South. Using case studies from China, Ghana, and Indonesia, they demonstrate how "scale" is used as a logic to align different visions and hopes for national futures possessed by state actors and citizens. See Seyram Avle, Cindy Lin, Jean Hardy, and Silvia Lindtner, "Scaling Techno-Optimistic Visions," *Engaging Science, Technology, and Society* 6 (May 2020): 237–254, https://doi.org/10.17351/ests2020.283

24 As a caveat, this is not an attempt to universalize data publics in South Korea. There are indeed multiple data publics as well as counterpublics that engage with public sector data in non-traditional ways, as demonstrated by the examples of Korean feminist organizing (i.e., School MeToo, femiwiki) and urban queer movements (i.e., Seoul Queer Collective). The purpose of this essay is to highlight the importance of connecting contextualized and historically grounded accounts of public formation and evolution to the study of data publics, to understand why certain formations of data publics have become hegemonic in South Korea.

25 Here I echo Star and Ruhleder (2016), who used the phrase, "when is an infrastructure?" (instead of "what is an infrastructure") to highlight infrastructures' relationality. See Susan Leigh Star and Karen Ruhleder, "Steps Toward an Ecology of Infrastrcuture: Design and Access for Large Information Spaces," in Boundary Objects and Beyond, eds. Geoffrey C Bowker, Stefan Timmermans, Adele E. Clarke, and Ellen Balka (Cambridge: MIT Press, 2015), 377–415.

representational resource that frames the politics of data only through the issues of access.[26] Instead, the infrastructure-oriented perspective takes into account the performative capacities of data infrastructures. It is a broader look at how different forms of participation and collaboration become materially organized in the building of data infrastructures. Hence, this reformulation of data publics serves as a useful analytical tool to understand how individuals are assembled through heterogeneous arrangements mobilized by open government and public sector data. It is a relational analytic — focusing on the associations and dissociations of various groups of people that engage in activities ranging from building and maintaining data infrastructures to normalizing governments' data practices to problematizing and resisting them.

This essay emphasizes the significance of understanding the historical evolution of the public in various regions of the world — how it exists (or is limited to exist), what it means, and how it has transformed throughout critical historical junctures. The emergence of present-day data publics is inevitably shaped by this old and new legacy of local public formations.

26 Jonathan Gray, "Three Aspects of Data Words," *Krisis: Journal for Contemporary Philosophy*, no. 1 (2018): 5–17, https://archive.krisis.eu/three-aspects-of-data-worlds/.