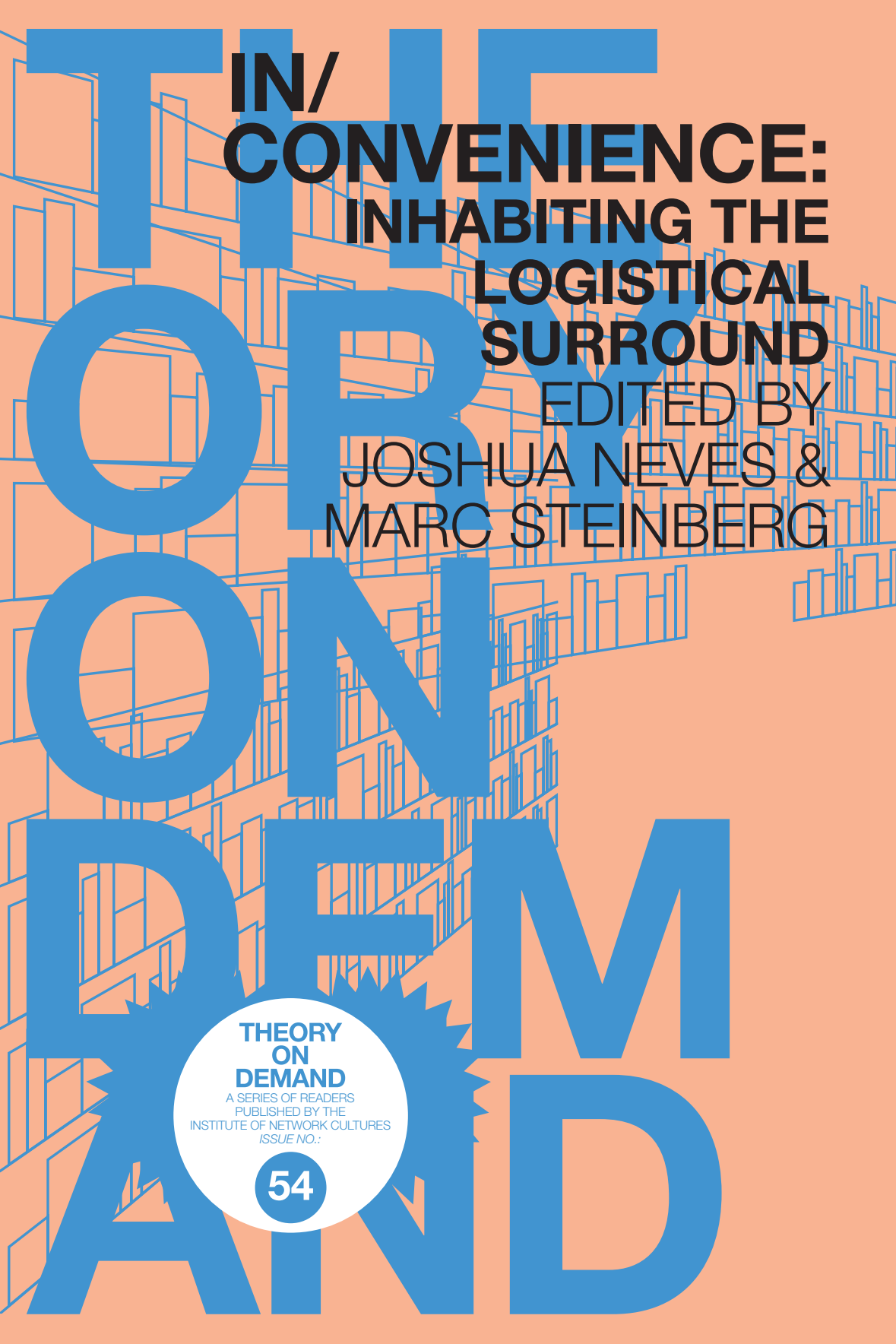
IN/
CONVENIENCE:
INHABITING THE
LOGISTICAL
SURROUND
EDITED BY
JOSHUA NEVES &
MARC STEINBERG
THEORY
ON
DEMAND
A SERIES OF READERS
PUBLISHED BY THE
INSTITUTE OF NETWORK CULTURES
ISSUE NO.:
54

IN/ CONVENIENCE

INHABITING THE LOGISTICAL SURROUND

Theory on Demand #54
In/Convenience: Inhabiting the Logistical Surround

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Design and EPUB development: Salome Berdzenishvili

Published by the Institute of Network Cultures, Amsterdam 2024.

ISBN: 9789083412559

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INTRODUCTION

JOSHUA NEVES AND MARC STEINBERG

In a Netflix comedy special *Asian Comedian Destroys America!*, Ronny Chieng asks a question that goes to the heart of this volume: 'How much more convenience can we get?' It's also a slightly disingenuous question, asked of the many services offered by Amazon in the US (with Chieng nodding to Netflix as well but leaving his sponsor off the hook). Disingenuous because while America and the overdeveloped 'West' is certainly the imagined homeland of a certain era of conveniences—washing machines, microwaves, frozen pizzas (known, significantly, as 'convenience foods')—the place of convenience today is decidedly more global, and less domestic (at least in the narrow imagination of home appliances and processed foods).

More global in the sense that the frontlines of what one business text calls the 'convenience revolution' are arguably now the fintech experiments in South Asia, Southeast Asia, and Africa; the e-commerce innovations of East Asia and Latin America; global and regional streaming platforms; and, of course, sprawling cable and shipping networks, data centers, orbiting satellites, rare earth mines, express delivery, and so much more. With all due respect to Chieng (and other America-focused accounts of convenience), we need a more dynamic frame to understand the contemporary geographies and experiences of convenience—including how convenience consolidates the platformization of culture, surveillance capitalism, data regimes, conscription into debt, among other infrastructural expediencies.

Less domestic in the sense that if the locus of convenience was once imagined to be the home, and gendered as the domain of women's work, now convenience describes a choice made about work: 'Drivers Choose Uber for its Flexibility and Convenience' reads a 2015 Uber press release.[1] Convenience blurs the earlier, artificially neat separation of production, consumption, and distribution. It signals changing ideas about work, where labor often takes place outside the home, office, or factory. Indeed, the hailing of convenient work accompanies an understanding of the feminization and racialization of labor more generally. Gig work and most notably food and grocery delivery are described as a new form of outsourcing the work of social reproduction. What matters here is that the boundaries between prior sites of labor and gig work blur, leading to what scholars point to as the gendered economies of digital labor or a digital politics 'where platform capitalism and racial capitalism meet'.[2] The spaces and itineraries of convenience are themselves in flux. Platforms and the digital shift have played major roles in this transformation. Put simply, we inhabit an increasingly logistical surround.

1 Jessica, 'Drivers Choose Uber for its Flexibility and Convenience', *Uber Newsroom*, 7 December 2015, https://www.uber.com/newsroom/driver-partner-survey/.

2 Melissa Gregg and Rutvica Andrijasevic, 'Virtually Absent: The Gendered Histories and Economies of Digital Labour', *Feminist Review* 123.1 (2019): 1–7; Tressie McMillan Cottom, 'Where Platform Capitalism and Racial Capitalism Meet: The Sociology of Race and Racism in the Digital Society', *Sociology of Race and Ethnicity* 6.4 (2020): 441-49.

But what does convenience mean? How should we understand it, in its proliferation of uses, sites, objects, and experiences? Convenience is perhaps one of the most overused terms to describe where we are going, why we are using a given digital tool, and what the world of smart devices offers in exchange for our data, our money, our lives. Overused, and under-theorized.

In April 2022, amid a late pandemic thaw, we held a hybrid workshop on 'In/Convenience' at Concordia University in Montréal to begin to explore such questions. The event, which was informed by digital life during 'lockdown', was the culmination of a yearlong working group exploring the cultural politics of convenience. It included eight presentations on themes ranging from logistics, waste, water, disability, democracy, and policing. One presentation began by sharing an n-gram of 'convenience' (see figure 1). The English-language graph showed that the term had peaked in 1939 and, though still part of everyday language, has steadily declined for decades. This downward slope was both expected—given convenience's association with postwar consumer culture—and a bit of surprise. Surely, we are living in a moment of unprecedented access to and demand for conveniences of all kinds. Convenience, it seems, has become so infrastructural to contemporary life that we barely need to call attention to it. But unlike the common refrain that infrastructure is only noticeable when it fails, convenience seems to come sharply into view when it becomes unavoidable or compulsory, as with gig labor, data plans, police checkpoints, water shortages, transportation apps, and even access to basic services like health care.

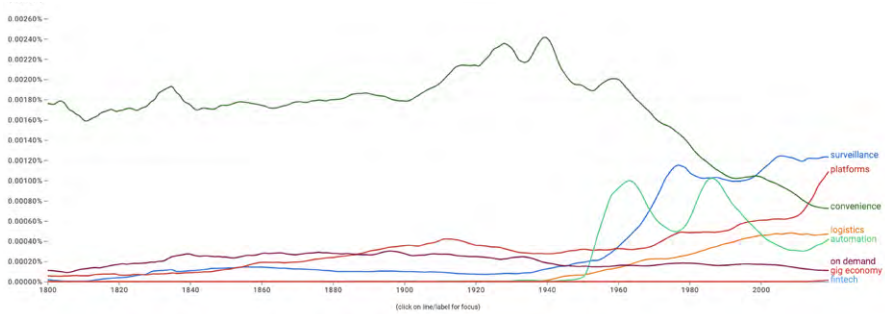

Figure 1. Visualization of key aspects constituting convenience in the age of platforms, from Google n-gram

This book is a rejoinder to such uncritical ubiquity, offering a multi-situated view of convenient practices and theories that are rooted in the present. In fact, rather than declining in usage—as a quick glance at an n-gram might suggest—convenience has proliferated a spectrum of meanings, practices, and technologies.[3] Consider, for example, current synonyms, including

3 The rise or fall of its usage also changes according to language and geography. If the English "convenience" seems on the decline, the Japanese Diet Library n-gram shows the Japanese term *riben* (**利便**) to be sharply on the rise before the n-gram's cut-off date of 1999: https://lab.ndl.go.jp/ngramviewer/?keyword=**利便**&size=100&from=0&materialtype=full. This reminds us of the need for site-specific analyses of convenience and its comparable terms.

terms like: surveillance, platforms, logistics, automation, on demand, fintech, or gig economy. These entangled yet distinct vectors both constitute some of convenience's crucial dynamics and indicate the concept's current unruliness or fecundity. If technologies change—the premise of convenience's attachment to super apps, ride-hailing, digital money lending services, and so on—so too does convenience itself. We glean insights from earlier theorizations of convenience including Elizabeth Shove's prescient observation that 'the tools of convenience have escalatory consequences'; as well as an earlier genealogy of convenience offered by Thomas Tierney, including an emphasis on how capitalist modernity transforms luxury into necessity.[4] We also engage recent turns in anthropology and media studies, as well as podcasts, streaming, novels, and other popular practices.[5] Yet the authors in this volume locate convenience in other contexts, geographic and medial and classificatory, interrogating how it can become a justification for policing; a soporific; a relation to infrastructure; an enticement to debt; or a promise of infrastructural reliability.

In doing so we seek both to understand the political, even moralizing, undertones of critiques of convenience—as a banal evil or ecological disaster that is 'destroying us'—and also the ways convenience may function as an imperative rather than a choice. It may begin as a minor time-saving ritual or an aspiration but quickly becomes common sense, 'just the way things are'. A luxury for some that is a requirement for others. It is a feeling or atmosphere that we need to interrogate in order to understand the appeal of platforms, the uneven demands of 'on demand', and the many other habituations structuring of digital life.[6] Exploring the complexity of *living in convenience*—a relational dynamic that is crucial to contemporary life—is the jumping off point for this collaborative volume. That we inhabit the slash or solidus ("/") marking the relation of in/convenience as a structure of experience; and that this habitus is logistical in nature are two insights that the chapters in this book probe.

There is an escalating need to *theorize convenience* to meet the escalating demands *for* convenience. So too the ways the convenient intersects with deeply felt obstacles or untimeliness. The need to scrutinize these relations is the starting point for this book, and hopefully other work that will follow from it, exploring convenience in the age of algorithms, platforms, and other logistical operations. One provocation taken up by several contributions to this volume is Lauren Berlant's posthumous monograph, *On the Inconvenience of Other People* (2022). For Berlant, inconvenience describes 'the affective sense of the familiar friction of being in relation'.[7] While their provocation—*other people*—is decidedly (anti)social in framing,

4 Elizabeth Shove, *Comfort, Cleanliness and Convenience: The Social Organization of Normality*, Oxford: Berg, 2003, p. 182; Thomas F. Tierney, *The Value of Convenience: A Genealogy of Technical Culture*, SUNY Press, 1993, p. 29.

5 Emily West, *Buy Now: How Amazon Branded Convenience and Normalized Monopoly*, Cambridge: The MIT Press, 2022; Jenny Huberman, 'Amazon Go, Surveillance Capitalism, and the Ideology of Convenience', *Economic Anthropology* (2021): 337-349; Ahmed Ali Akbar, 'The Cost of Convenience', *Land of the Giants* podcast, 22 June 2021, https://podcasts.apple.com/us/podcast/the-cost-of-convenience/id1465767420?i=1000526373677; Sayaka Murata, *Convenience Store Woman*, trans. Ginny Tapley Takemori, New York: Grove Press, 2018.

6 Here we find inspiration from the turn to consider the structure of feeling of platforms in Geert Lovink, *Sad by Design: On Platform Nihilism*, London: Pluto Press, 2019.

7 Lauren Berlant, *On the Inconvenience of Other People*, Durham: Duke University Press, 2022, p. 2.

the focus on inconvenience's profound attachments can also be extended to the kinds of technologized life worlds taken up in this book: policing platforms, smart systems, logistics and logisticality, cloud infrastructures, water shortages, sex media, sleep apps, micro-credit, urban optimization, and AI ethics, among other issues. What unites these diverse essays is a focus on the ways that proliferating digital conveniences also *convene us*. As Tung-Hui Hu reminds us in his chapter, Foucault invoked convenience 'to describe how similar things were brought together in the 16th century to form the great chain of being: "Those things are 'convenient' which come sufficiently close to one another to be in juxtaposition"'.

While such juxtapositions vary in intensity and are unevenly recognized, they suggest a desire or demand for social, political, and technical harmonization. As Berlant puts it:

> The minima of inconvenience can go under the radar, or not, but it does not register at first as a traumatic or transformative event. At maximum intensity, though, the affective sense of inconvenience is harder, less easy to shake off or step around. [T]he strong version of inconvenience points to forced adaptation to something socially privileged or structurally pervasive.[8]

Berlant's point about (in)conveniences ordinary and organizational effects/affects is well taken, especially its emphasis on how such relations are not only compositional but may be compulsory. But as Liza Rose Cirolia and Andrea Pollio suggest in their contribution to this collection, there is also something unsatisfying about critical framings based on inclusion or exclusion—especially when it comes to questioning techno-politics in the Global South. Instead, 'moving away from a binary of in/exclusion', they suggest, convenience may help us 'to see the multiple displacements of effºrt and work now held by new bodies, systems, and processes'.

Such tensions both bring into relief a set of key themes animating this book and help us to understand digital convenience as more than a question of consumer choice, a problem of inside/outside, or something that can simply be resisted by turning off our devices or not clicking 'buy now'. We offer an extended theoretical grounding for this book in chapter one, including a focus on convenience's shifting temporal, spatial, and affective registers. There we observe that more than the demand people place on platforms—a common critique of lazy or selfish consumers—convenience is increasingly a demand placed upon people by platformization; a condition in which we live. Responding to this dynamic is one of the shared projects of this volume. From Darren Byler's analysis of surveillant policing in occupied Xinjiang, Armin Beverungen's call to 'collectivize convenience', or Orit Halpern's suggestion that we have moved away from convenience to an era of resilience, to Susanna Paasonen's exploration of the de-platformization of sex workers, Neta Alexander's cripping of convenience, and Rahul Mukherjee's engagement with digital lending and fintech infrastructure, our collective effort is to question how in/conveniences enable or inhibit certain forms of relation, juxtaposition, or assembly. How, that is, that a certain type of world emerges or is foreclosed.

8 Berlant, *On the Inconvenience of Other People*, p. 4.

As suggested at the outset, we also aim to situate and follow these entanglements beyond the familiar focus on a few national contexts, corporations, or habits of living. This book thus offers a multi-situated view onto convenience as it has been transformed by digital media, smartphones, and platform capitalism. Like all global views it is partial of necessity, and penumbral, to return to a term used by one of us to describe something just coming into view.[9] Orit Halpern, in this collection, argues that we have moved from an era of stability and equilibrium to one of complexity and instability; an era of convenience to one of resilience. We might read this epistemological shift another way still: as a new description of how convenience is transformed by logistics, supply chains, on-demand services, and data economies.

Such uncertainties resonate across the chapters, from the security systems managing data centers explored by Gonzalez and Hogan, to the novel 'convenience delivered' model Beverungen outlines. Emergent epistemologies are as crucial to map as the local sites where convenience is produced. We need to shuttle, too, between macro-level epistemologies and the day-to-day objects and feelings with which we live. Here 'convenient noodles' (**方便面**), as instant noodles are known in China, are as ripe an object of analysis as the convenience stores where they are sold. Convenience today requires an understanding of attention, governance, pleasure, logistics, optimization, and the platform-mediated movement of people and goods that was incidental to earlier theorizations. This includes, of course, the need to respond to convenience's demands. As Tomasz Hollanek and Maya Indira Ganesh put it in their analysis of AI ethics: 'If *convenience* is the "condition we inhabit within contemporary capitalism", the key question is *how*? How can inconvenient questions about the trade-offs and conflicts of interest be posed in ways that are both legible and bearable to those in the position to transform the development pipeline?' And by the rest of us as well.

Acknowledgments

We wish to thank GEM Lab and the Platform Lab for their support of this project; the graduate student participants in the "In Convenience" reading group of 2021-2022; and the contributors for generously taking the time to write for this book. We also want to thank the Institute for Network Cultures and Geert Lovink in particular for their warm support of this project from the outset. Sudipto Basu was a great interlocutor throughout and we appreciate his incredibly careful editing in the final preparation of the collection. Marc Steinberg would like to acknowledge the support of the Volkswagen Foundation's 'Smartness as Wealth' grant and the support of the Social Sciences and Humanities Research Council of Canada. Joshua Neves would like to acknowledge the Social Sciences and Humanities Research Council of Canada and the Canada Research Chairs program.

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9 Joshua Neves and Bhaskar Sarkar (eds) *Asian Video Cultures: In the Penumbra of the Global*, Durham: Duke University Press, 2017.

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IN CONVENIENCE

JOSHUA NEVES AND MARC STEINBERG

The felt sense that we inhabit a convenience economy and culture is by now widespread. Nested in this understanding are ideas about ease and comfort, perpetually new technologies, and empowered consumers, on the one hand, and growing inequalities and frictions between the speed and exhaustion that convenience engenders, on the other. Popular critics of Big Tech such as Tim Wu name this the 'tyranny of convenience', where the adoption of modern conveniences like the washing machine or the smartphone has the 'ability to make other options unthinkable'.[1] Academic and journalistic assessments of the rise of platforms like Amazon, Netflix, and Uber, but also Meituan, Grab, Jio, LINE, WeChat, Gozem, and Flipkart, among many others, paint a similar portrait. Amazon's conflation of speed with convenience, Sara Jones argues, 'is destroying us'. She adds, 'Someone has to pay for speed, and it will either be the customer or the worker. Amazon, like most companies, decided to shift the cost to workers'.[2] Another study finds that convenience outstrips commodities themselves, noting that viewers subscribe to platforms like Netflix for the 'convenience of on-demand streaming programming'[3] and not because of the rather narrow content offerings. Arjun Appadurai and Neta Alexander similarly note the 'prominent promise of convenience, with its emphasis on immediacy and instant gratification' at the heart of the appeal of both Silicon Valley and Wall Street.[4] This provision of total convenience, comedian Ronny Chieng jokes in his Netflix special,[5] is key to the lure and excess of the American dream and its global cognates: 'How much more convenience can we get?' Convenience is so pervasive that it has become the object of parody.

A striking aspect of such assessments is their focus on speed, the reduction of trouble or work, and ease of access or personal comfort. But they also suggest a surfeit of convenience. A willingness and meritocratic pretense to encourage or require some among us to do the heavy lifting in order to create time for privileged others. This includes gig economy services like: on-demand delivery, shopping, laundry, driving, and much else. This familiar division of labor and social relations is exacerbated by networked devices and organization, which are understood to disrupt prior inconveniences by making them smarter. Yet, while we agree that conveniences involve the social production of inequality, in what follows we argue that ease, time, and technologized efficiency are not sufficient to grasp and critique this shared sense of a divided world. Convenience instead resonates with Frederic Jameson's account of postmodernism as the *cultural logic* of an epoch—a constellation of 'aesthetics, knowl-

1 Tim Wu, 'The Tyranny of Convenience', *The New York Times*, 16 February 2018, https://www.nytimes.com/2018/02/16/opinion/sunday/tyranny-convenience.html.

2 Sarah Jones, 'Convenience Is Destroying Us', *Intelligencer*, 2 April 2021, https://nymag.com/intelligencer/2021/04/amazons-convenience-is-destroying-us.html. Emily West, *Buy Now: How Amazon Branded Convenience and Normalized Monopoly*, Cambridge: The MIT Press, 2022.

3 Amanda D. Lotz, *Portals: A Treatise on Internet-Distributed Television*, Ann Arbor: Michigan Publishing, 2017, p. 30.

4 Arjun Appadurai and Neta Alexander, *Failure*, Medford: Polity Press, 2020, p. 21.

5 Ronny Chieng, *Asian Comedian Destroys America!*, Netflix Comedy Special, 2019.

edge, and political economy'.[6] Paraphrasing Jameson, we might say: 'if [convenience] is a historical phenomenon, then the attempt to conceptualize it in terms of moral or moralizing judgements must finally be identified as a category mistake'.[7] Convenience is a condition we inhabit within contemporary capitalism, and must be submitted to rigorous analysis, historical and conceptual. That even proponents of radical politics assume that convenience will be part of a post-capitalist society, as exemplified by Aaron Bastani's promethean treatise on 'fully automated luxury communism', suggests the relational nature of what we term *in convenience* in this chapter and book.[8] In-convenience bears something of privilege and even boredom, something of the compulsory, and something of the 'predatory inclusion' Tressie McMillan Cottom finds at work in Internet-accelerated racial capitalism. Responding to this condition requires us to think beyond simply *not* clicking 'buy now'.[9]

To say that convenience is a condition is also to underscore its affective dimensions. Like Jameson's account of postmodern 'euphoria', Sianne Ngai's post-Fordist 'zany', or Anna Kornbluh's 'immediacy', convenience is a privileged form of experience under data capitalism, including its platformed iterations. At the economic level, writers such as Nick Srnicek describe platform capitalism as a moment when 'capitalism has turned to data as one way to maintain economic growth and vitality',[10] or where, as *The Economist* puts it, data is the new oil and platforms name 'a new business model, capable of extracting and controlling immense amounts' of it.[11] Convenience is an implied and under-examined user-side driver of this shift, even if it's ultimately folded back into production, creating new demands on workers. Such conveniences come in app-mediated services from food delivery and taxis to therapy and autopay. As commonly noted, these perks come with tradeoffs, such as one's data being tracked for a faster search result. Draper and Turow call our acquiescence to networked surveillance 'digital resignation';[12] we name this relationship to platforms *in convenience*. The state of living in convenience shapes the protocols that make everyday life 'smart', wherein 'each small moment of convenience—be it answering a question, turning on a light, or playing a song—requires a vast planetary network, fueled by the extraction of

6 Nico Baumbach, Damon R. Young, and Genevieve Yue, 'Introduction: For a Political Critique of Culture', *Social Text* 34.2 / 127 (2016): 2.

7 Fredric Jameson, *Postmodernism, or, The Cultural Logic of Late Capitalism*, Durham: Duke University Press, 1991, p. 46.

8 We render the relation 'in convenience' by the hyphenated 'in-convenience' when grammar requires it.

9 West, *Buy Now*, pp. 110-11. West offers an important consideration of this compulsory aspect of convenience, especially in relation to the model of subjectivity she calls the 'served self'. Yet, in our view, her return to consumer activism by way of conclusion, as a presumed counter to the passivity of the served self, assumes a model of the autonomous, consuming, liberal subject that we argue the compulsory nature of 'in convenience' makes untenable.

10 Nick Srnicek, *Platform Capitalism*, Malden: Polity Press, 2017, p. 6.

11 'The World's Most Valuable Resource is No Longer Oil, but Data', *The Economist*, 6 May 2017, https://www.economist.com/leaders/2017/05/06/the-worlds-most-valuable-resource-is-no-longer-oil-but-data. Given this close relation between data and platforms we use 'platform capitalism' interchangeably with 'data capitalism' in what follows, with the caveat that data capitalism is more capacious in describing a longer set of transformations.

12 Nora A. Draper and Joseph Turow, 'The Corporate Cultivation of Digital Resignation', *New Media and Society* 21.8 (2019): 1824-1839.

non-renewable materials, labor, and data'.[13] In today's platform capitalism, convenience is the often unstated explanation and material organization for why things are as they are; why user-citizens understand data tracking, express delivery, global supply chains, climate-warming energy consumption, rare mineral mining, waste, toxic working conditions, and much else, as a necessary evil, the infrastructure supporting everyday work, leisure, and self-fulfillment.

Our basic argument in this essay is that convenience's consequence stems from its perceived inconsequence—which is significant precisely because of the relationships to inconvenience that it consolidates. Convenience is boring (habitual, just the way things are), imperceptible (like infrastructure, and often *as* infrastructure, it is most noticeable when it fails), or downright embarrassing (we lie about subscriptions to Amazon Prime, for instance). It also exacerbates existing inequalities by further partitioning society. This includes the ways that our relationship to convenience shifts over the course of a day or week inasmuch as we are workers, consumers, or (non)citizens. Drawing out this tension, we approach convenience as a peculiar constellation of service, logistics, and affect that exceeds narrow approaches centered on either political economy or cultural practices and artifacts. Indeed, our aim is to bring discussions of data capitalism more squarely into conversation with everyday calculations and experience. We locate these shifts not in the glamorous industries of high-tech and finance, but instead in examples like home appliances, the convenience store, and the endless Netflix or Tik Tok scroll—examples that ground each of the following sections. With this focus on retail and the ordinary objects and spaces of convenience, we aim to add nuance to recent interventions that emphasize only the most conspicuous forces of networked life and industry.

Convenience has appeared as a chief value under many guises, in many eras; below we account for one such lineage. Contemporary platformed convenience, we suggest, participates in a broader shift to the service economy and its retrofitting by just-in-time manufacturing and distribution, such that all work is reconfigured as part of a service-logistics-affect logic.[14] In what follows, we trace a particular genealogy of the emergence and place of convenience in data capitalism today, focusing on three entangled axes and transitions: (1) timing and individuation via the home appliance during industrial modernity and especially the postwar period; (2) spacing and optimization via retail convenience and the service sector from the 1970s onwards; (3) feeling and logistical form via the platform as enclosure, since the 2000s. Finally, we conclude by observing how the relation of in-convenience is not simply a luxury we can choose to indulge or not; it is the normative condition of life and politics today.

13 Kate Crawford and Vladan Joler, 'Anatomy of an AI System: The Amazon Echo as an Anatomical Map of Human Labor, Data and Planetary Resources', *AI Now Institute and Share Lab* (2018): 3, https://anatomyof.ai.

14 For our approach in what follows, it matters that logistics is taken up by a wide range of fields, from business studies and operations research to geography and to Black studies. For some key texts informing our approach here, see Deborah Cowen, ***The Deadly Life of Logistics: Mapping Violence in Global Trade***, Minneapolis: University of Minnesota Press, 2014; Ned Rossiter, ***Software, Infrastructure, Labor: A Media Theory of Logistical Nightmares***, New York: Routledge, 2016; Stefano Harney and Fred Moten, ***The Undercommons: Fugitive Planning & Black Study***, Wivenhoe: Minor Compositions, 2013; Kee-hung Lai and T.C. Edwin Cheng, ***Just-in-Time Logistics***, London: Routledge, 2009.

Timing: Home and the Rise of 'Personal Logistics'

Why, we might ask, is convenience so often recognized as a basic value of modernity, associated at once with the fruits of hard work and self-actualization and, at the same time, tied to banality, guilt, cynicism or even desperation: 'the future we all chose, but that nobody seems to want'.[15] Before turning to more recent scholarship about convenience, it's worth remembering etymologies that precede its twentieth century associations with appliances and effortlessness. As Thomas Tierney describes in *The Value of Convenience: A Genealogy of Technical Culture*, prior to the 17th century, understandings of convenience in English remained linked to their Latin roots, indicating a sense of agreement, conformity or harmony; a coming together (as in: to convene). In modernity, this semantic link shifted, such that 'the value of technology in modernity is centered on technology's ability to provide convenience'.[16] What matters here is both the persistence and rupture between convenience as structures of agreement and proximity, on the one hand, and the contemporary provisioning of the individual self and population, on the other. Rather than social harmony, modern convenience is about 'personal comfort or ease'.[17] It is, for Tierney, a process that is always about making life easier; a configuration that spreads from the West to the Rest and assumes a neo-Heideggerian view of technology as inherently dominating nature.

Tellingly, Tierney begins his examination with the modern household: the sphere where 'convenience reigns'.[18] This insight, echoed by later scholarship, also relies on a conceptual shift from *production* to *consumption* as what matters for understanding the work of convenience in technical culture. More than the expansion of this realm, Tierney emphasizes how it 'becomes narrow and pointed', penetrating modern individuals and their values.[19] This narrowing, however, is tied to an entangled expansion of necessity that parallels concerns about modern trespasses into the private domain. Such problems are central to Hannah Arendt's critique of private and public realms in *The Human Condition*, especially her concern that their boundaries are blurred by capitalism and the rise of the social.[20] Two points about convenience and the household are worth emphasizing here. First, as many commentators have noted, that Arendt's distinction necessarily brackets how the overcoming of necessity relies on slavery and rigid gendered divisions, among other violences, is hardly inconsequential. Indeed, this elision remains central to how convenience organizes society. Further, the tension between classical and contemporary formulations suggests a related shift in the imagination of the human body. This distinction moves from understandings of 'ancient necessity [as] primarily concerned with satisfying

15 Colin Horgan, 'The Tyranny of Convenience', *OneZero*, 29 April 2019, https://onezero.medium.com/the-tyranny-of-convenience-2e7fa145ab4.

16 Thomas F. Tierney, *The Value of Convenience: A Genealogy of Technical Culture*, Albany: State University of New York Press, 1993, p. 6.

17 Tierney, *The Value of Convenience*, p. 39.

18 Tierney, *The Value of Convenience*, p. 11.

19 Tierney, *The Value of Convenience*, p. 4.

20 Hannah Arendt, *The Human Condition*, trans. Margaret Canovan, Chicago: University of Chicago Press, 1958.

the *demands* of the body', to a modern preoccupation with 'overcoming [its] *limits*'. If the former stresses basic needs like food, clothing and shelter, the latter seeks to command and reorder the body in order to minimize or eradicate 'inconveniences, obstacles or annoyances'.[21] In other words, convenience, by now, *convenes* us (and the more-than-human world) differently.

In the so-called developed world in the 20th century, the mitigation of inconveniences became the task of labor-saving domestic appliances such as washing machines and electric ranges, televisions and toasters, refrigerators and freezers, that promised convenience by reducing work, stretching time, and providing for new desires. The restructuring of daily rhythms and the reduction of time spent on ordinary tasks is essential to the promise of convenience.[22] In *Comfort, Cleanliness, and Convenience*, Elizabeth Shove shows how prior associations of convenience with ease and the saving of time are, in the latter half of the twentieth century, supplanted by the new 'capacity to shift, juggle and reorder episodes and events'.[23] Here, 'things that are "convenient" are those that enhance peoples' control over the scheduling of activity'.[24] In light of growing temporal pressures and the historical rise of the consumer society, Shove continues:

> contemporary usage relates convenience to the scheduling and co-ordination of people and objects in time and space. Understood in this way convenience is about timing, that is, the ability to shift and juggle obligations and to construct and determine personal schedules. From this point of view, the really important benefit of convenience food is not that it saves time but that it makes it possible to prepare and eat a meal at very short notice.[25]

Convenient devices allow for better management of time. They are not about saving time as such but rather about the ways modern conveniences allow for a *control over the timing of domestic activities*. Timing over time.

The rise of convenience as a value is also synchronous with shifts in labor and productivity over the course of the 20th and 21st centuries. Control over one's time or 'temporal sovereignty' is, as Melissa Gregg writes, 'a historically specific form of freedom'.[26] This freedom is deeply enmeshed with shifts in work time and place, aligning with the rise of the neoliberal subject who must manage themselves and take a new responsibility

21 Tierney, *The Value of Convenience*, p. 30.
22 This promise was often structured around women's work in the home. And yet these new conveniences, as Ruth Cowan points out, often resulted in 'more work for mother'. See Ruth Schwartz Cowan, *More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave*, New York: Basic Books, 1983.
23 Elizabeth Shove, *Comfort, Cleanliness and Convenience: The Social Organization of Normality*, Oxford: Berg, 2003, p. 170.
24 Shove, *Comfort, Cleanliness and Convenience*, p. 170.
25 Shove, *Comfort, Cleanliness and Convenience*, p. 171.
26 Melissa Gregg, *Counterproductive: A Brief History of Time Management*, Durham: Duke University Press, 2018, p. 7.

for their temporal resources. Gregg calls attention to two aspects of this shift that help draw out the implications of timing. First, she tracks how practices of time-management emerge not only from the default sites of workplace efficiency—the office and factory—but also, crucially, from the management of the home. This is suggestive of a longer history of 'women's role as managers and efficiency engineers' that remains vital to the ways that home economics feed into models of efficiency.[27] Convenience's facilitation of time management parallels, we note, the flexibilization of work that begins with the postwar restructuring of women's employment on a temporary or contingent basis (e.g. in the US and Japan), suggesting a prehistory of the gig economy's destructive flexibilization of labor, which is so often framed as convenient for workers. Second, these shifts drive an emergent sense of timing that Gregg calls a 'new kind of *personal logistics*'.[28] Amidst the rise of new forms of precarious work, the temporalities of convenience also shift from the household to become services and service jobs, including those now provided by companies like Amazon and UberEats. This is to link the gigification of labor and the flexibilization of work schedules to contemporary habits, aspirations, and bodily norms.

Convenience, in other words, is not equally available to all. The rise of timing and personal logistics relies on, indeed generates, peculiar forms of social untimeliness. Put simply, convenience is produced by inconvenience—a term that needs to be re-operationalized to capture its present purchase as much more than minor discomfort or frustrating inefficiency; signifying social inequity, exploitation, and oppression. Sarah Sharma makes this point sharply in *In the Meantime*. There she interrogates the myth of the culture of speed, pointing to how speed is unevenly distributed and inhabited by those who labor to create it, including taxi drivers who must wait in their cars at the airport for hours to produce the sense of timeliness and convenience for those who can afford it.[29]

To put it in Shove's terms, 'scheduling and co-ordination of people and objects in time and space' relies on complex inconveniences that extend far beyond appliances or current fears of automation. It also anticipates the increasing emphasis on scheduling associated with the shift to 'on-demand' services, hybrid work, and so on, wherein the on-demand is itself an iteration of the paradigm of convenience as a matter of scheduling and timing of activities.

Spacing: The Convenience Store

Beyond timing, platformed convenience relies on a logistical mastery of space and *spacing*. The convenience store, especially in its development in Japan from the 1970s to the present and subsequent re-exportation around the world from the 1980s onwards, is, in our view, an emblematic example of this spatialization of convenience.

27 Gregg, Counterproductive, p. 34.

28 Gregg, *Counterproductive*, p. 129 (emphasis ours). An important work that engages with QR codes and their facilitation of 'convenient efficiency', also engaging with the history of productivity, is Dang Nguyen, 'Convenient efficiency: A media genealogy of QR codes', *New Media & Society* (2022): 1-21.

29 Sarah Sharma, *In the Meantime: Temporality and Cultural Politics*, Durham: Duke University Press, 2014, p. 56.

While first established in the US South, in Texas, in the 1930s, what became 7-Eleven established the convenience store format that would have its heyday in the US in the 1960s. This attracted the interest of both large Japanese retailers and the Japanese government, both captivated by the idea of rationalizing retail and reorganizing under a single franchise banner the many small stores across Japan. Over the 1980s and into the 1990s, the Japanese convenience store chains overtook their US models to become the cutting edge of spatialized convenience. Hence, global chains like 7-Eleven offer a pre-history of logistically enabled forms of convenience that transform and intensify the time-centered approaches noted above. They continue to influence the present in significant ways, focusing our attention on ordinary sites and experiences of convenience that both condition and are often overlooked by digital and platform studies. 7-Eleven, among similar examples, also reminds us of the longer histories of both retail and automobile manufacture (a precursor to platform capitalism),[30] as well as the continued economic and social impact of service- and logistics-driven 'lean' management techniques that integrate retail 'store operations, product development, distribution and information systems'.[31] As such, the global-Japanese convenience store is our point of departure. To focus on the Japanese convenience store means emphasizing *franchises* as a crucial origin in the consolidation of convenience culture.[32]

The Japanese convenience store impacts retail convenience worldwide, from East and Southeast Asia to the North American 7-Eleven stores remodeled to resemble their Japanese counterparts (Figure 1). Its mundane amplification of convenience as a structure of experience serves as a model for understanding the emergence of platforms like Alibaba and Amazon, iQiyi and Netflix. A focus on retail allows us to emphasize the regular, repeat visits that have as much of a role in the transformation of habits and expectations of convenience as the more rarefied platforms and e-commerce sites that are touted as their replacements. The convenience store makes visible a shift from home appliances to neighborhood services as a locus of convenience, which is in turn part of a larger transformation of manufacture in the image of the service sector.[33] If approaches to timing in the previous section suggest a shift in attention from production to consumption, our interest here is the way that service industries fuel an emergent organizational sphere—and a production of distribution—that brings into view a new set of concerns. Notably, the place of convenience shifts from the domestic sphere to public and semi-private spaces, and with a corresponding shift of emphasis *from timing to spacing* as convenience's crucial offering.

30 Marc Steinberg, 'From Automobile Capitalism to Platform Capitalism: Toyotism as a Prehistory of Digital Platforms', *Organization Studies* 43.7 (2022): 1069-1090.

31 David Marutschke, *Continuous Improvement Strategies: Japanese Convenience Store Systems*, Basingstoke: Palgrave Macmillan, 2011, p. 23.

32 This, of course, is not to forget about the many informal corner stores (from the bodega to the dépanneur) or automobile-centric gas stations that are also part of this story but beyond the scope of this chapter.

33 Rutvica Andrijasevic, et al., *Media and Management*, Lüneburg: Meson Press, 2021.

Figure 1: Map of 7-Eleven stores worldwide as of January 2020. 7-Eleven Inc., '7-Eleven is 70,000 Stores Strong', PR Newswire, 23 January 2020, https://www.prnewswire.com/news-releases/7-eleven-is-70-000-stores-strong-300992154.html.

Consider the global career of 7-Eleven, which now operates 71,000 stores around the world, only 9300 of which are in the United States.[34] Founded in the United States in 1927, it was imported to Japan in 1973, with the first store launched in 1974. 7-Eleven played a key role in reinventing the convenience store in Japan alongside chains like Lawson and Family Mart. By the 1980s, the renovated Japanese convenience store model was re-exported around the world, particularly within East Asia, but also to the US and European markets. The chain's success led 7-Eleven Japan's parent company to purchase most of the Southland Corporation in 1991, making it a fully owned subsidiary of the Japanese firm in 2005. With this takeover of the original US company, the ascendancy of the Japanese convenience model was complete. At the heart of its success was a new mode of spatial organization that reaches far beyond the store itself.

This spatial organization starts with the ubiquity of convenience stores in Japan, with over 50,000 outlets nationwide that receive an estimated 16.7 billion visits per year.[35] Wherever they are located, they are hubs of daily life, providing fresh prepared foods and a variety of basic amenities, as well as array of services including, as Marutschke enumerates, 'bank, postal and delivery services, acting as ticket agents, accepting utility payments and even handling laundry, home cleaning services, printing services, garbage pick-up tickets and online shopping'.[36] Fresh foods account for both a large amount of sales and a large proportion of the chains' product devel-

34 Ron Chang, '7-Eleven Opens 71,100th Store in S. Korea', *TBS*, 9 July 2020, http://tbs.seoul.kr/eFm/newsView.do?typ_800=J&idx_800=3395420&seq_800=20387997. 7-Eleven is the largest convenience store operator in the world by far. Japanese FamilyMart, with a large footprint in Japan and elsewhere in Asia, comes in second place with around 24,000 stores, followed by Mexican OXXO. Of the top 10 chains worldwide, it is significant that Japanese-owned chains account for 3 of the top 5 and 4 of the top 10.

35 Mieko Shirai, Takeshi Kojima, and Masashi Oguri, 'Konbini Wo Kagaku Suru' (Doing the Science of Convenience Stores), *Shūkan Diamond (Diamond Weekly)*, 29 October 2016, 28.

36 Marutschke, *Continuous Improvement Strategies*, p. 5.

opment strategies.[37] Because of their small footprints and prepared fresh food sales, stores receive at least 7-10 deliveries per day,[38] and their model and margins require an immense circulation of goods and people into and out of the store. This distribution is known as logistics. Most discussions of logistics focus on the transformations in production they enable, with 'transportation conceptualized as a vital element of production systems rather than a separate domain or the residual act of distributing commodities after production'.[39] 7-Eleven stores, among others, give further texture to this perspective by focusing on how distribution not only transforms production but the very idea and experience of convenience.

A signal, if under-theorized, aspect of convenience today is hence the reorganization of space or spacing. Spacing calls attention to the positioning of a store in a neighborhood or city, its proximity to distribution hubs, the management of logistical networks supplying just-in-time delivery of fresh foods and inventory, as well as the layout and design of stores for ease of customer use. The aspects of convenience crucial to 7-Eleven all speak to a conjugation of timing with spacing: long opening hours; proximity of stores to consumers; the ability to 'buy all essential goods in just one place'; and 'quick shopping' wherein the 'layout of the store is ideal for customers to locate their required products easily'.[40] Convenience is treated as a logistical problem—a problem of optimizing distribution in real time.[41] Spacing is, then, always also about timing. Inspired by the Toyota Production System and its emphasis on just-in-time delivery (which has always been about the optimizing of space via as-needed delivery of auto parts),[42] 7-Eleven and other convenience stores in Japan elaborated the principles of auto production into retail empires. Dependent not upon a network model of infinite connectability, the convenience store's *convenience* is a kind of proto-platform premised upon proprietary logistical and information systems, point-to-point transportation services, total coordination of circulation of people and things, and the enclosure of the store space nested within the larger enclosure of the logistical system itself: the 7-Eleven franchise.

Like Amazon, Alibaba, or Walmart, 7-Eleven is a logistics company as much or more than a retail enterprise.[43] It focuses on the planning of stores, the development and procuring of mer-

37 Tai Negō and Kyōichi Hiraki, *Konbini Gyōkai No Dōkō to Karakuri Ga Yoku Wakaru Hon (A Book for Really Understanding the Trends and Mechanisms of the Convenience Store Industry)*, Tokyo: Shuwa Shisutemu, 2015, p. 122.

38 Akira Ishikawa and Tai Nejo, *The Success of 7-Eleven Japan: Discovering the Secrets of the World's Best-Run Convenience Chain Stores*, Singapore: World Scientific, 2002, p. 55.

39 Cowen, *The Deadly Life of Logistics*, p. 40.

40 Ishikawa and Nejo, *The Success of 7-Eleven Japan*, p. 14.

41 As Halpern and Mitchell's account of 'smartness' teaches us, optimization is a future-oriented, open-ended, never-ending process; one that, like convenience, relies on a particular epistemology of smartness. Orit Halpern and Robert Mitchell, *The Smartness Mandate*, Cambridge: The MIT Press, 2023.

42 Shinji Naruo and Sorin George Toma, 'From Toyota Production System to Lean Retailing. Lessons from Seven-Eleven Japan', in Jan Olhager and Fredrik Persson (eds) *Advances in Production Management Systems*, New York: Springer, 2007, pp. 387-395.

43 Jesse LeCavalier quotes a Walmart manager making a similar point: 'The misconception is that we're in the retail business, [but really] we're in the distribution business'. See Jesse LeCavalier, *The Rule of Logistics: Walmart and the Architecture of Fulfillment*, Minneapolis: University of Minnesota Press, 2016, p. 11. On Amazon and logistics, see Armin Beverungen, 'Remote Control. Algorithmic Management of

chandise, and most especially the delivery of this merchandise to its owner-operated stores. The emphasis on distribution affects the very organization of stores within city space, with store locations planned according to delivery routes to ensure savings on delivery costs and times. The centrality of logistics and optimization also determines the layout of stores. Like Walmart, convenience stores are designed to ensure that consumers circulate as easily as the daily deliveries that restock them. Store layout is itself optimized for legibility. All stores, even across chains, adopt a familiar inverted 'C' layout, with magazines at the entrance, drinks at the back, and fresh foods across from the entrance near the cash register. While store products change every year, the layout is constant over decades.[44] As a result, the average consumer spends less than three minutes in a convenience store. Convenience fades into the background as a vague feeling, with muscle memory and habit guiding users as they shop.

Convenience stores are themselves a response to both the expansion of work hours and the destructuring of work routines in recent decades. Consider that the name 7-Eleven, which clearly states the original store hours, is already anachronistic. Its hours have long since extended to meet the demands of a 24/7 lifestyle. The stores both rely on part time and temp workers for staffing and also cater to the irregularities of the increasingly precarious workforce that makes up its consumer base.[45] 'Starting in the latter half of the 1990s', Gavin Whitelaw notes, convenience stores 'have been referred to as "life infrastructure" (*seikatsu infura*), akin to critical public services such as water, gas, and electricity'.[46] 7-Eleven even brands itself as an infrastructure: 'Electricity, gas, water, and 7-Eleven', reads the company's landing page. This recognition of *convenience* as infrastructural to daily life is crucial to our understanding of the timing and spacing of the present, but also asks new questions about convenience as a cultural and logistical form.

Figure 2: Convenience stores are widely associated with immigrant labor in North America and Europe, as captured in the Toronto-based sitcom, Kim's Convenience. The production itself was marred by 'diversity issues, unfair pay and racist storylines'.[47] *Promotional material from the television show.*

Circulation at Amazon', in Marcus Burkhardt, Mary Shnayien, and Katja Grashöfer (eds) *Explorations in Digital Cultures*, Lüneburg: Meson Press, 2021, pp. 5-18.

44 Shirai, Kojima, and Oguri, 'Konbini Wo Kagaku Suru', 32.

45 Ishikawa and Nejo, *The Success of 7-Eleven Japan*, p. 5.

46 Gavin H. Whitelaw, 'Konbini-Nation', in Katarzyna J. Cwiertka and Ewa Machotka (eds) *Consuming Life in Post-Bubble Japan*, p. 79.

47 Chris Gardner, ''Kim's Convenience' Stars Simu Liu and Jean Yoon Open Up on "Painful" Lack

Feeling: Convenience as Logistical Form

If the prior section understands convenience as a fusing of timing and spacing—which together define logistics—our interest here is to examine convenience as a cultural and aesthetic form. That is, a mode of address, an affect, a feeling, and a judgment about our encounters with an accelerating techno-economic world. The convenience store offers one suggestive genealogy of this contemporary sensorium. A bright white cube with unchanging hours, recognizable design and reliable offerings, it is peculiarly antiseptic and homey. In Japan, it is the rare place where one can go in pajamas. And yet despite this, store space is also distinctly depersonalized. The habitual *irasshaimase* greeting called out to customers as they enter the store—a 'Welcome' that is decidedly not a 'Hello'—is distance-producing and unidirectional. Here the banality of convenience as a structure of feeling or experience begins to come into view. It is at once a social infrastructure and, at the same time, a kind of calculated un-care (like 'contactless' delivery) that drives immaterial and affective labor, or what we call *logistical form*. This phrase points to the ways cultural forms are themselves determined by logistical systems under platform capitalism, shifting the very place of analysis from the form of a content to the form of distributed experience.

Our discussion of logistical form draws inspiration from Sianne Ngai's crucial expansion and reformulation of aesthetic categories with particular attention to minor or compromised aesthetics. No longer limited to purified or sublime encounters, Ngai suggests that in late capitalism aesthetics become 'part of the texture of everyday social life'.[48] In particular, she focuses on a set of aesthetic categories or feelings like the zany, the cute, the interesting, and more recently, the gimmick. These categories, she argues, are two-sided and mediated, including 'the judgment we utter, a way of speaking; the form we perceive, a way of seeing' and are 'sutured by affect into a spontaneous experience'.[49] Put simply, an aesthetic category is composed of a felt sensation and a verbal response that elicits some agreement from one's interlocutor. At the same time, these minor aesthetics tend not to move observers much, and are instead characterized by a 'deficit of power'.[50] This last point is key to Ngai's intervention: aesthetic categories are *interested* and are deeply informed by economic processes; classical disinterest is displaced by ordinary attention and proximity.[51] In many respects, convenience foregrounds the weakness and banality described in Ngai's aesthetic categories, its very ordinariness shaped by the dulling effects of social standardization and expanded calculation. This includes conflicting senses of ease and exhaustion, comfort and cynicism, mundane habitation and righteous condemnation.

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of Diversity, "Overtly Racist" Storylines', *The Hollywood Reporter*, 6 June 2021, https://www.hollywoodreporter.com/tv/tv-news/kims-convenience-netflix-cancelation-1234963806/.

48 Sianne Ngai, *Our Aesthetic Categories: Zany, Cute, Interesting*, Cambridge: Harvard University Press, 2012, p. 29.

49 Sianne Ngai, *Theory of the Gimmick: Aesthetic Judgment and Capitalist Form*, Cambridge: Harvard University Press, 2020, p. 1.

50 Ngai, *Our Aesthetic Categories*, p. 18.

51 Ngai, *Our Aesthetic Categories*, p. 27.

Yet as we suggest in what follows, if convenience starts as an aesthetic category—a punctual, momentary experience that may be followed by the declaration: 'this is so convenient'—it also very often recedes into the calculative background. It becomes an ambient feeling. In this way convenience offers something like Brian Massumi's early account of fear as an affect: not an emotion but rather '*the objectivity of the subjective under late capitalism*'.[52] Convenience undergoes a phase shift from being a momentary experience ('this is convenient') to being an underlying, ongoing structure of feeling or a cultural logic. Here we are interested in both the punctuality of convenience as an aesthetic category and the way in which it becomes a cultural and economic background—feeling and form. Here we might recall Shove's point, above: that the production of conveniences is never finished. Once habituated to a convenience, lives become dependent on it, expectations are heighted, and new conveniences must be invented to allow us to cope with the increased temporal pressures put on all of us. In this sense, the convenient is also tied to Massumi's account of fear—the fear of falling behind, or of falling out of time in late capitalism.

Murata Sayaka's award-winning novel *Convenience Store Woman* (*Konbini ningen*) offers one point of departure for understanding convenience as an aesthetic or vernacular style in the sense Ngai describes. The novel opens:

> *A convenience store is a world of sound. From the tinkle of the door chime to the voices of TV celebrities advertising new products over the in-store cable network, to the calls of the store workers, the beeps of the bar code scanner, the rustle of customers picking up items and placing them in baskets, and the clacking of heels walking around the store. It all blends into the convenience store sound that ceaselessly caresses my eardrums.*[53]

Told from the first-person perspective of a shop employee, the framing description both illuminates the convenience store's sensorium as well as its dependable conventions and address. Working there is a bodily experience, a set of routines embedded and embodied as habits: 'Speed is of the essence, and I barely use my head as the rules ingrained in me issue instructions directly to my body'.[54] Tired of struggling with social cues and implied norms in the outside world, for example, the narrator is relieved to find a place where all behaviors and social interactions are prescribed by management—allowing her to 'transform into the homogeneous being known as the convenience store worker'.[55] She finds comfort in its peculiar repetitions: 'we had greeted the same morning 6,607 times'.[56] In this way, the novel is a strange ode to the standardization and social legibility that the convenience store as a life infrastructure provides. But it also suggests that convenience is produced through routine, even cold intimacy. This allows customers to experience each store as the same,

52 Brian Massumi, 'Everywhere You Want to Be: Introduction to Fear', in Brian Massumi (ed) *The Politics of Everyday Fear*, Minneapolis: University of Minnesota Press, 1993, p. 12.

53 Sayaka Murata, *Convenience Store Woman*, trans. Ginny Tapley Takemori, New York: Grove Atlantic, 2018, p. 1.

54 Murata, *Convenience Store Woman*, p. 2.

55 Murata, *Convenience Store Woman*, p. 16.

56 Murata, *Convenience Store Woman*, p. 73.

and to navigate them as efficiently as the store workers trained to recognize their most minute gestures, if not to learn their names. Like the soundscape, bright fluorescent lights, and familiar layout, the feeling of convenience suggests the inverse of anxiety or uncertainty: it is habitual, reliable, efficient.

While Murata's novel offers an important aperture, the focus on the convenience store as distribution network above and the platform in what follows necessitates a methodological expansion. Understanding logistical form requires that we look beyond interfaces of consumption and discrete modernist texts or works of art, like the novel, film, or video game.[57] Here we build on Patrick Jagoda's engagement with network aesthetics, which both provocatively theorizes the emergent 'sensibilities of distribution' tied to the rise of the internet, among other network imaginaries, and yet takes as its evidence 'artworks that experiment with network aesthetics' rather than everyday logistical space or affective relations.[58] At stake here are the very parameters for what constitutes the ordinary, including its spatial, temporal and sensory form or arrangement, and their relations to critique. The point is not that everyday sites or texts are somehow unmediated, or that we ignore novels or artworks, but rather, by focusing only on particular kinds of mediation—and the familiar or privileged objects of film and media studies—we fail to appreciate what is distinct about the feeling of convenience, and platform aesthetics more generally. More to the point: logistical form suggests that existing understandings of late capitalism and network cultures are out of sync with our present challenges and current configurations of logistically-informed platform capitalism in consequential ways that a grappling with convenience brings into view.

This is to underscore an alternate history of the platform—traced through service, logistics and retail, rather than histories of cybernetics, TV networks, net art and social networks—and calls into question media studies' continued fascination with particular network diagrams and aesthetics. What matters here is that while actual and imaginary networks may take many forms, received understandings have sedimented into inert images and interventions. This includes the persistent fascination with distributed networks, web 2.0, and the residual claims of cyberspace, as well as the influence of certain critical responses like Deleuze's 'control society' or Jameson's 'cognitive mapping', including the latter's claim that the complexity of the world system overwhelms our sensorium, making it difficult if not impossible to grasp its totality and prepare as political actors. Our aim is to hold onto these problems while shifting attention away from the infinite network, the rhizome, and the fetish of (dis)connectivity, and toward the platform's dominant logic of standardization, habituation, and enclosure. That these platform logics are deeply bound up with their modes of value creation and political economy, should also remain top of mind.

The idea that platforms standardize and enclose is hardly novel. Many scholars have noted this tendency and discussed its impact on existing understandings of the internet, its material

57 A break with this focus on discrete texts separates our consideration here from Ngai's otherwise generative approach to everyday aesthetics.

58 Patrick Jagoda, *Network Aesthetics*, Chicago: University of Chicago Press, 2016, pp. 18-19.

form and everyday practices.[59] The present emphasis includes Joss Hands' claim that '[t]he Internet is vanishing'. He continues, 'as its ubiquity increases, it has also become less and less visible in the production and experiences of network culture. Indeed, many of the operations that used to typify the Internet are now funneled through so-called "platforms"'.[60] Drawing on such typical accounts, our argument here is that, contrary to familiar assumptions, *platform enclosures operate by standardizing the experience or feeling of convenience.* They also do so to explicitly economic ends; enclosure is a means of value creation. Following on the 19th century standardization of time, and the 20th century standardization of space,[61] we argue that 21st century standardization takes feeling, experience, and affect as its object.[62] The implications of this for our aesthetic sensibilities and political orientations are manifold.

If the rise of the convenience store offers one example of how distribution, countability, and calculation transforms everyday experience—constituting a life infrastructure—the rise of Netflix, among other video platforms (from Showmax to Douying/Tik Tok), offers an instructive example of how they change culture. Growing out of a landscape of video shaped by brick-and-mortar VHS and DVD rental stores, Netflix, founded in 1997, initially distinguished itself with its online catalogue, flat rate subscriptions, and DVD-by-mail service, before launching its streaming services in 2007. The company can both be understood to emerge from the logistical space of the convenience store (being a distribution firm much like 7-Eleven), and to amplify its material and affective transformations. Despite its shift into streaming and its investment in producing or licensing so-called Netflix Originals, what remains constant from its days as a DVD distributor is both its interface and its concern with distribution. This very shift is itself narrated in terms of the augmented provision of convenience, wherein the 'collapse of Netflix's [DVD] browsing interface into a viewing interface removed even the trip from the computer to the mailbox'.[63] While too easily framed in terms of the laziness critics of convenience decry, this should be viewed as a persistent focus on distribution over content, and the prioritizing of convenience as a cultural form or structure of experience.

Consider the suggestion that people subscribe to Netflix for the convenience it offers rather than its small, and by some accounts, shrinking content catalog. This simple observation, familiar to users through the experience of endlessly scrolling or 'watching' the site's interface, only to find the same titles repeated in different categories, brings into focus a key change associated with logistical form. Logistics is the primary emphasis of Netflix from its mailed-DVD days to its 'Netflix Originals'. And while its programming remains important, we take Ed Finn's position that '[r]eading Netflix as a series of algorithms, interfaces, and discourses is

59 The enclosure of the internet is actually ongoing, growing out of 1990s 'walled gardens' like AOL and i-mode. Marc Steinberg, *The Platform Economy: How Japan Transformed the Commercial Internet*, Minneapolis: University of Minnesota Press, 2019.

60 Joss Hands, 'Introduction: Politics, Power and 'Platformativity'', *Culture Machine* 14 (2013): 1.

61 Nigel Thrift, *Knowing Capitalism*, London: Sage, 2005.

62 Joshua Neves, 'Social Media and the Social Question: Speculations on Risk Media Society', in Bhaskar Sarkar and Bishnupriya Ghosh (eds) *The Routledge Companion to Media and Risk*, New York: Routledge, 2020, pp. 347-361.

63 Colin Jon Mark Crawford, *Netflix's Speculative Fictions: Financializing Platform Television*, Lanham: Lexington Books, 2021, p. 48.

far more instructive for understanding its role as a culture machine than reading the cultural products produced by the system'.[64] To this we might add distribution systems. Netflix videos load instantaneously because of its proprietary content delivery network, 'which stores video and audio content in servers located close to end users'.[65] This network also transforms the very nature of content by gathering viewing data at a scale hitherto unimaginable in the network TV era, and customizing content based on viewing habits. Patterns of distribution hence work back into content. Standardization and calculability are here crystalized as a set of generic codes, including some '76,897 genres' identified by Netflix, many 'still waiting for content'.[66] This generic quality across categorical differences is captured in a statement by a former Vice President of product engineering: 'Netflix seeks the most efficient content. Efficient here meaning content that will achieve the maximum happiness per dollar spent'.[67] Here we come close to a definition of logistical form: calculation, standardization, and the primacy of distribution animate Netflix, among many other platforms, as a particular kind of culture machine. Companies like Netflix hence both expand the discourse and offerings of personal logistics, noted above, and transform this individuating tendency into a widely *shared* form of logistical experience.

Streaming platforms like Netflix now account for a large percentage of global internet bandwidth,[68] and signal an intensification of what Raymond Williams' called 'mobile privatization' to describe a new way of living in post-war industrial nations that was 'at-once mobile and home-centered'.[69] In subsequent years, Williams' observation was intensified by expanding capacities for flexible distribution, from the Walkman to the smartphone, now the center of on-demand cultures especially in the Global South. Platformed convenience now both permeates domestic life in new and old ways, and signals a diffusion of mediation. As one recent article puts it, 'Home is where your Netflix is'.[70] In this sense, global streaming services are neither domestic nor public technologies but rather organize and permeate sociality on a planetary scale. This is also to build on Thomas Lamarre's claim, itself drawing on Williams, that distribution, far from being neutral or simply secondary to production, is itself productive and creates new formal and sensorial relations. It 'entails a sense of affective possession' that emerges 'in conjunction with the mapping of the transmedial onto a geopolitical domain'.[71]

Beyond distribution capacities or infrastructures, in other words, the production of distribution demonstrates novel aspects of the platform economy, which, like Jameson's *cultural logic*, may help us to apprehend the work of form and feeling under data capitalism. Put simply,

64 Ed Finn, *What Algorithms Want: Imagination in the Age of Computing*, Cambridge: The MIT Press, 2017, p. 103.
65 Ramon Lobato, *Netflix Nations: The Geography of Digital Distribution*, New York: NYU Press, 2019, p. 94.
66 Finn, *What Algorithms Want*, p. 94.
67 Finn, *What Algorithms Want*, p. 108.
68 Lobato, *Netflix Nations*, p. 88.
69 Raymond Williams, *Television: Technology and Cultural Form*, London: Routledge, 2003, p. 18.
70 Barbara Maly-Bowie, ''Home is where your Netflix is' – From Mobile Privatization to Private Mobilization', *Literary Geographies* 5.2 (2019): 216-233.
71 Thomas Lamarre, 'Regional TV: Affective Media Geographies', *Asiascape: Digital Asia* 2.1-2 (2015): 94.

ordinary experience is reorganized and becomes newly logistical. Lamarre's emphasis is on the creation of affective media geographies—a pre-personal feeling of being-in-common that anchors experience into zones of affiliation that precede and exceed physical geography (like the fandoms of *Hana yori dango* or BTS). By contrast, the affective sense produced by the distributive systems of Netflix—not to mention WeChat, Grab, Doordash, etc.—is one of convenience. Like many platforms, this feeling starts as a conscious experience, or aesthetic judgment: the novelty of viewing at whim from the content library available *is convenient*.

But this immediate aesthetic experience quickly shifts to the background or default. Further, as video stores have long since disappeared in most cities, and pirate networks become increasingly specialized and difficult to access, the default of media experience becomes compulsorily convenient. Convenience moves from being a punctual, conscious feeling—that which is felt when one first clicks on a Netflix title and a video begins to load—to being infrastructural to experience in toto. As Anna Kornbluh summarizes the style of too late capitalism: 'immediacy swallows everything'.[72] For many there is no alternative to home streaming, just as one cannot request 10-day Amazon delivery rather than 2-day, 1-day, or 1-hour, or whatever the standard of convenience may now be. Convenience stops being a demand consumers place on platforms, a *content* of experience as many frame it,[73] and becomes instead a demand on consumers placed by platforms. The experience of this logistical sensorium is one of in-convenience. In-convenience names the very *form* or *atmosphere* of platformed experience, at least in an era when convenience is the default timing, spacing, and feeling of the world. If platforms enclose the web, *the subjective feeling of inhabiting this enclosure is one of in-convenience*. To paraphrase Massumi, it is the objectivity of the subjective in platform capitalism. This may lead us to ask not only *what* is convenient, but *when* is convenience perceived as such and when is it merely the infrastructure or the 'affective surround' of life today?[74]

Like the convenience store, whose experience of convenience is predicated on its becoming a social infrastructure or habitual encounter, platforms produce convenience as a technologized background. What we have called logistical form is generated by computational distribution and an emergent logic of standardization, ease, and reliability that constitutes the vague feeling of platform capitalism itself. It is a structuring of experience based on the potential for an endless accounting and reorganization of time, space, and sensation. It signals the porousness of *what* is home, *when* is public, and *where* the feeling of convenience mediates and shifts these categories. Acknowledging that distribution produces so much more than the movement of people and things—and instead *moves* the very capacities to sense or feel—means understanding that what logistical systems like convenience stores, Netflix, and Amazon create is a particular distribution of convenience. Indeed, if platform capitalism were to have an aesthetic category, it would be: *the convenient*. Convenience is part of the total

72 Anna Kornbluh, *Immediacy: or, the Style of Too Late Capitalism*, London: Verso, 2024, p. 9.

73 Robert M. Pallitto, *Bargaining with the Machine: Technology, Surveillance, and the Social Contract*, Lawrence: University Press of Kansas, 2020.

74 Brian Massumi, 'Fear (The Spectrum Said)', *Positions: East Asia Cultures Critique* 13.1 (Spring 2005): 41.

aestheticization of life in late capitalism, at once immediate and infrastructural. While such experiences no doubt differ across platforms—including home delivery (Amazon, Alibaba, Flipkart, Rakuten), personal mobility (Uber, Didi), video delivery (Netflix, Hotstar, Tudou), super apps (WeChat, LINE, Grab), and social media platforms (Facebook, Instagram, Tik Tok)—they produce and are produced by the experience of convenience. To take this argument one step further: *platforms sell convenience, not products*.

In Convenience: The Cultural Logic of Platforms

Convenience names the normative timing, spacing, and feeling of data capitalism. It is also a relational concept: what we term *in convenience* in our title. Our interest here is less to reiterate the claim that contemporary conveniences rely on and generate deep inconveniences, though that is certainly the case. Instead, in convenience describes a sensorium shored up by smartphones, logistics, and a swelling service sector that shapes the charm and demands of the present. It is how the world shows up, forms the boundaries of what is possible, and establishes new thresholds for living and working (recall that gig work was initially presented as convenient for the worker). In this context, we both want to take seriously the popular recognition of convenience's explanatory power—that we inhabit a convenience culture and economy; that convenience is killing us; etc.—and challenge the assumption that it can be explained away as mere laziness, or a problem of desire or ideology.[75] Convenience, we have begun to sketch in this essay, is not simply a consumer choice or an indulgence that can be shirked by putting down one's phone or by purchasing a new green product. It is experience, datafied. Building on this and by way of conclusion, we suggest three ways the above account of convenience requires us to reshape our approach to digital convenience and contemporary critique.

First, convenience is the ground of politics today. It is a lure to a kind of living, a call to life, and beyond this the background environment of what Peter Sloterdijk has called *pampering*, a form of living in a 'gigantic hothouse of relaxation' that he associates with the welfare state, a 'relieving process' that only becomes visible in 'the age of the radical de-scarcification of goods'.[76] Sloterdijk's reactionary politics and framing of the Global North as the norm of experience aside, his treatment of capitalism from the angle of consumption is helpful as it acknowledges the crucial place of convenience (as a kind of pampering; and a *living inside*). Further, it relies on the promise that 'comfort and convenience will never stop flowing and growing'.[77] Inhabiting convenience has also become part of the promise of platformization; in Kenya or India as much as the United States or Japan—perhaps more so as these are often the test beds for new kinds of digital convenience; what Orit Halpern and Robert Mitchell call the 'smartness mandate'.[78] Such presumptions have become the background to radical politics today, which are sometimes themselves informed by fantasies of *anti-capitalism without*

75 For an account of Amazon Go stores via ideology critique, see Jenny Huberman, 'Amazon Go, Surveillance Capitalism, and the Ideology of Convenience', *Economic Anthropology* 8 (2021): 337-349.

76 Peter Sloterdijk, *In the World Interior of Capital: For a Philosophical Theory of Globalization*, trans. Wieland Hoban, Cambridge: Polity Press, 2013, p. 171, p. 212.

77 Sloterdijk, *In the World Interior of Capital*, p. 171.

78 Orit Halpern and Robert Mitchell, *The Smartness Mandate*, Cambridge: The MIT Press, 2023.

inconveniences. Even: convenience communism. Such is the undertone of works like *Fully Automated Luxury Communism* among other visions of automated post-scarcity or post-work politics.[79] That critiques of these works underscore the simple fact that automation is powered by millions of laborers working as Mechanical Turks, 'human-as-a-service',[80] or a 'surrogate humanity',[81] among other forms of alienation, often in the Global South, speaks to the relation 'in convenience' we highlight here. What's required is a rethinking of how convenience transforms *work,* alongside leisure and consumption, and shapes emergent aspirational horizons. While we have focused on consumption and distribution here—and a genealogy linking the convenience store and streaming platforms—a more triangular approach to convenience requires bringing these observations to bear on the productivity softwares and work cultures that *also* presume convenient lifeworlds.

Second, this also means recognizing how convenience as we unfold it here pushes us to rethink the descriptions and models of politics we inherit from critical theory and media studies, among other fields. The network, the unrepresentability of transnational capital, cognitive mapping, surveillance capitalism, and the like, may reach certain limits as they jostle against supply chains, logistical form, and platformed affect. Enclosure as border displaces the network as utopia guiding our methods and politics. This is implicitly recognized in platform studies's tendency to undertake close analyses of a single platform, whether Instagram, Twitch, or Twitter. These studies recognize that there is no longer a network, there are only segregated platforms or homophilic worlds, each of which operate with their own sets of policies, politics, resistances, and technocultures.[82] If networks signaled open borders, global interconnection, and presumptions about the movement of goods, information, and people, platforms signal closure, national boundaries, geoblocking, redlining, the return of the locked-in model of the internet, and global delinking. To these, we hope to offer a productive counterpoint, suggesting that convenience allows us to think across platforms, across sectors (like retail and streaming), and, most crucially, across geographies.

Third, convenience operates through inclusion and exclusion; animating a particular distribution of in-convenience. Convenience is not only produced by exploited, abandoned and inconvenienced workers and groups, but constitutes a kind of threshold for legitimately inhabiting society and its benefits. This was devastatingly captured during the COVID-19 pandemic, when employees at firms like Amazon and Meituan were classified in many jurisdictions as essential workers. Ordering via online services was revalued from convenience to necessity, and indeed civic duty.[83] The racialization and economic marginalization of necessary workers—workers in inconvenience—reminds us of Tressie McMillan Cottom's call for a

79 Aaron Bastani, *Fully Automated Luxury Communism*, London: Verso, 2019.

80 Phil Jones, *Work without the Worker: Labour in the Age of Platform Capitalism*, London: Verso, 2021.

81 Neda Atanasoski and Kalindi Vora, *Surrogate Humanity: Race, Robotics, and the Politics of Technological Futures*, Durham: Duke University Press, 2019.

82 Wendy Hui Kyong Chun, *Discriminating Data: Correlation, Neighborhoods, and the New Politics of Recognition*, Cambridge: The MIT Press, 2021.

83 Joshua Neves and Marc Steinberg, 'Pandemic Platforms: How Convenience Shapes the Inequality of Crisis', in *Pandemic Media: Preliminary Notes Towards an Inventory*, Lüneburg: Meson Press, 2020, pp. 105-112; Andrijasevic et al., *Media and Management*.

bringing together of platform studies with racial capitalism as an analytic, this time applied to platform services globally.[84] Unequal distribution of convenience applies to racialized workers in the U.S. context and to the migrant workers in the Chinese context—both the backbone of the essential workforce. This brings to light the deeply unequal distribution of inconvenience, including how *in convenience* consolidates modes of predatory inclusion.[85] Inconvenience at once describes, and fails to register, the condition of those who labor to produce the conveniences of others. From fulfillment center workers who rush to complete orders to delivery personnel dragging large handtrucks through city streets, human workers are a crucial part of the infrastructure of convenience.

Turning our attention from appliances to services underlines the unequal distribution of convenience, including the complex ways it is generated and consumed. These positions are not mutually exclusive; a convenience store employee or Meituan food delivery worker is still a consumer at the end of their shift. The reformulation of labor and exploitation in terms of inconvenience also draws on a lineage of ideas that frame, if somewhat ironically, global climate change (*The Inconvenient Truth*) and settler colonialism (*The Inconvenient Indian*) as *inconvenient*.[86] What it means to adopt the language of inconvenience in doing so requires further exploration, but signals the political hold that convenience has on the imagination of counter-politics. We cannot think of convenience without its counterpart. Living today means inhabiting the hyphenated relation that we call *in-convenience*. To be outside of convenience is either an ephemeral privilege—the yuppie who abandons their smartphone—or an extreme form of precarity or abandonment. At an everyday level, convenience can no longer be limited to coziness, ease or comfort; it is quite simply the price of admission. Like the protagonist of *Convenience Store Woman*: embracing convenience is by now a survival strategy.

Acknowledgments

We wish to thank all the contributors in this volume for their valuable feedback on this chapter. We thank David Humphrey, Diane Wei Lewis, and Sarah Sharma for their suggestions. Finally we thank Jacqueline Ristola for her early research assistance on this project.

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84 Tressie McMillan Cottom, 'Where Platform Capitalism and Racial Capitalism Meet: The Sociology of Race and Racism in the Digital Society', *Sociology of Race and Ethnicity* 6.4 (2020): 441-449.

85 McMillan Cottom, 'Where Platform Capitalism and Racial Capitalism Meet'.

86 Al Gore, *An Inconvenient Truth: The Planetary Emergency of Global Warming and What We Can Do About It*, New York: Rodale Press, 2006; Thomas King, *The Inconvenient Indian: A Curious Account of Native People in North America*, Toronto: Doubleday Canada, 2012.

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CONVENIENT-FOR-THE-PEOPLE POLICING, PROTECTED CONSUMER-CITIZENS AND INFRASTRUCTURES OF DISPOSABILITY IN NORTHWEST CHINA

DARREN BYLER

Since 2014 authorities in the Xinjiang Uyghur Autonomous Region in Northwest China have introduced a 'seamless' 'people's convenience' (*bianmin*) checkpoint, passcard and face surveillance system that tracks and inhibits the movement of targeted minority citizens while providing 'green lanes' and greater feelings of security to system-approved Han settler citizens. The system draws in part on business management logistics in data capitalism, a Japanese and Singaporean model of policing infrastructure, and new developments in surveillance technology to produce a limit case in contemporary population management.

Since China's turn to a market-oriented economy in the 1990s, the Uyghur Region has become a domestic center of an extractivist oil, gas, coal and cotton economy driven by the settlement of millions of non-native people—figured as 'The People' in the convenience surveillance system—from other parts of the country. Over the 2010s, Uyghur resistance to land dispossession and the settler take-over of Uyghur institutions, reached a threshold moment resulting in the buildout and implementation of the 'people's convenience' system. While aspects of this resistance featured Uyghur violence toward Han civilians in the form of suicide attacks, the system was used as part of the People's War on Terror to assess the past 'terrorist and extremist' digital activities of not just the hundreds of Muslims connected to violent crime, but rather the entire population of 15 million Uyghurs, Kazakhs and other Muslims who were native to the region. This resulted in the removal of more than one million Muslims from urban and rural contexts into a system of high-tech internment camps.[1] Millions more were placed on finely graded watchlists, while their movements and digital behavior were monitored by automation-assisted surveillance and state workers. A significant portion of both former detainees and those on watchlists were assigned to years of labor in highly surveilled industrial parks in the region as underpaid workers in factories, plantations, and undesirable service sector jobs such as street sweeping.[2]

This chapter explores the valences of the people's convenience system to understand the way policing and policy discourses and technologies conflate citizenship with particular types of disciplined, racialized, convenient consumption. I argue that this mode of sociality, which

1 Darren Byler, *In the Camps: China's High Tech Penal Colony*, Columbia Global Reports, New York: Columbia University Press, 2021.

2 Darren Byler, *Terror Capitalism: Uyghur Dispossession and Masculinity in a Chinese City*, Durham: Duke University Press, 2022; '关于印发新疆维吾尔自治区"十四五"就业促进规划的通知 [Notice on Printing and Distributing the '14th Five-Year' Employment Promotion Plan of Xinjiang Uyghur Autonomous Region]', Xinjiang Government, 14 December 2021, https://web.archive.org/web/20230324214327/https://archive.ph/PFzsb.

Neves and Steinberg refer to as being 'in-convenience', is premised in part on spending the lifetimes of disposable others.[3] By tracing the origins of 'Convenient-for-the-People' thinking through the customer-to-customer business practices of information-centric capitalism, Maoist political practice, and contemporary global city models, the chapter shows how designs for efficiency in economic consumption coexist, or are 'stacked' on top of, digitized urban governance platforms and networked checkpoints. This application creates a form of state power that begins to normalize and automate differential forms of governance, producing a form of sociality that can be characterized as convenient disposability.

Discourses of Convenience

Variations on the term 'convenience' appears thousands of times in internal police reports from the capital of Xinjiang, Ürümchi—a city of more than 2 million mostly non-Muslim Han settlers in China's vast Muslim majority frontier. These reports from 2017 to 2019 were drawn from a mobile policing system that was built by a state-contractor Landasoft, which brands itself as 'China's Palantir'.[4] The files were part of the base data set that forms the People's Convenience system. This aspect of the system relied on a network of tens of thousands of formal and informal informants to file intelligence reports regarding the effects of policy and infrastructure implementation of the people's convenience system.[5]

The discussion of 'convenience' in the files centered around consumption and mobility. Initially, in early 2017 as the mass internment campaign was just beginning, the reports catalogued Uyghur complaints regarding how inconvenient it was for most Muslims in the city to find jobs, rent apartments, or stay in hotels anymore. The police reported that Han settlers were likewise complaining that nearly all the Uyghur bakers and butchers had been detained or expelled from the city, so Han urbanites could no longer buy bread fresh out of a clay oven. Over and over, the reports noted Han citizens' complaints about how inconvenient the mass internment of the Uyghurs was for the day-to-day business of their lives. But as the months documented in the reports wore on, discussion of inconvenience began to fade into a state manufactured 'digital resignation'.[6] By the end of 2017, both Muslim and Han citizens no longer complained. It appeared as though Uyghur citizens realized that the intensification of

3 See the introduction to this book, Joshua Neves and Marc Steinberg, 'In Convenience'.

4 The internal police files examined in this chapter were obtained by the news journal *The Intercept* through the investigative journalist Yael Grauer. See Yael Grauer, 'Millions of Leaked Police Files Detail Suffocating Surveillance of China's Uyghur Minority', *The Intercept,* 29 January 2021, https://theintercept.com/2021/01/29/china-uyghur-muslim-surveillance-police/. I assisted Grauer in assessing the millions of files included in the policing system and am now working with a team of researchers to make a subset of these documents publicly available through the Xinjiang Documentation Project, housed at Simon Fraser University and the University of British Columbia.

5 For a discussion of the history on internal information systems in China, see Martin K. Dimitrov, *Dictatorship and Information: Authoritarian Regime Resilience in Communist Europe and China*, London: Oxford University Press, 2023.

6 For a parallel discussion of the way corporations in Europe and North America cultivate a similar resignation among consumers, see Nora A. Draper and Joseph Turow, 'The Corporate Cultivation of Digital Resignation', *New Media and Society* 21.8 (2019): 1824-1839; and Neves and Steinberg, 'In Convenience', p. 3.

the People's Convenience policing system was intended to restrict or ban Uyghur movement and consumption. Han citizens likewise realized that bread should now be bought through app-based delivery services or in barcoded packages at convenience stores. The reports also note that Muslim run convenience stores that had catered before to the halal standards of Muslim customers now sold beer and cigarettes—making them spaces more convenient for settler consumption. Daily face scans were routinized and over time Han people learned that they could just walk or drive through 'green lanes' based on the way the phenotypes of their faces were recognized by the system and security workers. The region after all was understood by Han settlers to be a new frontier of the global economy. Many of them had been drawn there because of the lucrative resource sector and the promise of a convenient middle-class lifestyle. A new consistency of being 'in convenience' reemerged as they realized anew that they were 'the People' the governance system was designed to serve.

The police were observing these shifting dynamics as well. In a report from mid-2017 an officer surnamed Li notes:

> *Since they are facing such high-pressure from the system, we should really screen Uyghur-speaking beggars in the city. Many Uyghur-speaking people from Southern Xinjiang dare not enter and exit places that have ID check points, so they are likely to be in public spaces that offer shelter from the wind and rain such as ATM booths.*[7]

The People's Convenience surveillance system, it appeared, was pushing Uyghurs from their homes and jobs in the service and construction sectors of the city to repurpose an older platform on which the People's Convenience system was literally stacked (or positioned directly beside)—the distributed network of on-demand cash withdrawal banking booths built to shelter computerized banking equipment. The layers of the city—financial infrastructure meeting security infrastructure—formed a new segment in the enmeshed convenience city; a material and digital instantiation of what the theorist Benjamin Bratton might refer to as a megastructure of stacked digital and material platforms.[8] Uyghurs were pushed to reclaim spaces in the platform stack where they waited to be stumbled over by system-approved citizens and swept up by the police who followed.

However, as I observed when I visited the region in 2018, these spaces of temporary respite from life on the run would soon be fitted with surveillance equipment. Similarly, parks, underpasses, and construction sites were either boarded up, or outfitted with ID checkpoints or cameras. There were no spaces for Uyghurs to hide in this system. A temporary inconvenience for Han citizens—a logistical transformation to the process of buying bread or mutton—was met by a permanent position of disposability for Uyghurs. This framing, which I will return to in the final section of the chapter, is a way of thinking about a particular type of a racialized inconvenient other—a living form of human waste—that Neferti Tadiar and Melissa Wright identify as a feature of the contemporary global economy.[9]

7 Xinjiang Documentation Project, "Internal Police Files," Unpublished Manuscript, 2024.
8 Benjamin H. Bratton, *The Stack: On Software and Sovereignty*, Cambridge: The MIT Press, 2016.
9 Neferti X.M. Tadiar, *Remaindered Life*, Durham: Duke University Press, 2022; Melissa Wright, *Disposable Women and Other Myths of Global Capitalism*, New York: Routledge, 2013.

Scholarship on the affective politics of counter-terrorism and governance has shown that fear of the other as a structure or atmosphere that pervades popular discourse is a prime motivator of technological interventions in contemporary public life.[10] This chapter takes a similar approach to show that within this broader structure an *infrastructure of feeling*—to borrow a framing from Lauren Berlant—appears under the sign of being 'in convenience'.[11] That is to say, as fear is operationalized, it does more than produce a structure of feeling. It is more than an 'atmospherically felt but unexpressed class-based affect', rather it 'confirms and solidifies the sediment of many proximate kinds of sociality, including pasts and futures as they express themselves in the present'.[12] Berlant is thinking about the way the global pandemic and protests against police brutality toward Black Americans sanctioned corresponding types of social and material infrastructure—defined as technological and organizational systems of management and communication—intervening into American life in the late 2010s. These moments of heighted state intervention and intersubjective experience—mass protests in the streets, mass quarantines, corresponding police brutality, and systematic public health interventions—produced a kind of 'glitch' in life lived as normal, that allowed patterns, habits, and norms to be shown in sharper relief.[13] By focusing attention on infrastructural interventions and their norm-shaping effects in these moments, worldbuilding is shown in motion. *Inconvenience*, the friction that emerges from being in relation with others, challenges the sanctioned temporal and spatial sovereignty of privileged citizens. The disappearance of inconvenience in the discourse of the privileged—as shown in the police reports I described above—is thus an indicator of political and economic power being routinized. It marks the consistency-making that makes the disposability of the ethno-religious other common sense. Spending the lifetimes of Muslims, by using convenience stations to trap them, and in turn, locking them up and putting them to work, became normal.

This discourse and infrastructure of feeling was not entirely new. Over the course of 24 months of ethnographic fieldwork between 2011 and 2020 in the Xinjiang Uyghur Autonomous Region and in nearby Kazakhstan, and in reviewing thousands of police files, I came to understand the particular infrastructural valences of 'convenience' (*fangbian*) in relation to politically and economically sensitive topics in Northwest China. As in Euro-American etymologies of the term, in the Chinese context, perhaps influenced by Confucian conservatism, convenience often referred to speech and behaviors that would not destabilize the social order.[14] In my conversations with Han interlocutors and government workers, I often found conversations redirected. For instance, I was told that it was 'not convenient' (*bu fangbian*) to talk about the history of the independent East Turkistan Republic or the way Turkic Muslims such as Uyghurs and Kazakhs were prevented from practicing aspects of their faith. For my Muslim friends this political use of the term extended far beyond vague conversation, they were often told that their halal lifestyle itself was 'inconvenient' (*bu fangbian*).

10 Joseph Masco, *The Theater of Operations: National Security Affect from the Cold War to the War on Terror*, Durham: Duke University Press, 2014; Brian Massumi, *Ontopower: War, Powers, and the State of Perception*, Durham: Duke University Press, 2015.

11 Lauren Berlant, *On the Inconvenience of Other People*, Durham: Duke University Press, 2022.

12 Berlant, *On the Inconvenience of Other People*, p. 20.

13 Berlant, p. 95.

14 For an etymology of the term, see Neves and Steinberg, 'In Convenience', p. 5.

For instance, a young Kazakh woman told me how the term was used when she applied for a job at a newspaper soon after she graduated from college in the late 2000s. She said:

> *At first they were welcoming and interested, but then they called and rejected me. When I asked why (the Han manager) provided a bunch of excuses, but the main reason was that 'it will be "inconvenient" (bu fangbian) for you due to your diet restrictions'. I said that shouldn't be a problem and I was still interested in the job. I pressed and pressed him, but he kept talking about 'inconvenience' over and over. Even when I said I was not that religious, he still said no.*

The young woman said that it 'felt terrible' to be rejected like that simply because of her ethnicity and presumed religious values. It would have been easier to accept if the manager would have admitted that it just was 'not "convenient" for *them*'. It was the fact that 'they made it about me, "it's not convenient for *you*"' that made her most angry. She said that the paternalism in this language game of 'fake politeness', where Han authority figures 'pretend to care' about minorities, but actually just want to put inconvenient Muslims out of sight and mind, is a common feature of daily life for Uyghurs and Kazakhs in China's internal colonial project. As a result, she saw her lifepath rerouted into work environments where the inconvenience of Muslimness did not interfere as deeply with Han convenience. The theater of inconvenience that confronted the Kazakh woman demanded a price from her—a life lived as an inconvenient object, but a life nonetheless. However, when the social friction of inconvenience intensified as a result of the People's War on Terror in the mid-2010s, producing a 'glitch' in the normal Muslim inconvenience, the inconvenient Muslim demanded a more durable infrastructural fix.

Convenience and State and Economic Power

When it comes to state power, as in data capitalism itself, the concept of convenience in service provisioning aligns closely with efficiency in production. Building on Neves and Steinberg's framing of being 'in convenience' as a form of contemporary life,[15] it can be said that when it comes to governance and development of states, convenience and efficiency are focused on controlling the timing and spacing of power reproduction. As the anthropologist Akhil Gupta has argued in his study of bureaucratic power and social welfare in contemporary India, power cannot be understood as merely 'distributed' from a centralized reserve.[16] Rather it requires a disaggregated theory of the state which focuses on the mundane everyday practices and infrastructures of governance and market development. Power, characterized by the ability to impact others and be impacted, is enacted not by a unitary state or corporate class but through discrete acts within the infrastructure of a state and economy. Identification of groups of individuals and their property with different degrees of protection, and the convenience of mobility and power, fundamentally constitutes the modern state form; this is *the* central daily business of policing, its infrastructure and being 'in-convenience'. As the intensification of such a system in contemporary Northwest China demonstrates, the material experience of

15 Neves and Steinberg, 'In Convenience'.

16 Akhil Gupta, *Red Tape: Bureaucracy, Structural Violence, and Poverty in India*, Durham: Duke University Press, 2012.

the state form and its economy gains structure and significance at locations such as 'Convenient-for-the-People' banking access points, call centers, and surveillance hubs. These locales regulate intra-urban movement and control the social environment. The structures and infrastructures of convenience both facilitate and restrict certain forms of movement, acting as both visible and invisible walls that categorize populations and permitted actions.

Convenience architectures, symbolic of and supporting policing and economic systems, draw citizens into 'scripts of action' based on gendered and ethno-racial guidelines.[17] They observe and constrain their targets while extending the power of those who design and control these technologies. Collectively, infrastructures of convenience shape dispositions and patterns of propensity that influence life itself. Despite attempts to provide technologists and urban managers with an omniscient view of the city, the complexity of these systems results in power being enacted in small doses at discrete locations—checkpoints, surveillance cameras, traffic meters—often overseen by city workers or police with limited perspectives on the entire system. This complexity mirrors the distribution of information in a platform economy, dominating global production since the late twentieth century.[18]

As Marc Steinberg has shown, platform economies emerge out of Taylorist modes of production management in the form of Toyotism: a mode of production that focuses on just-in-time manufacturing utilizing data analytics, supply chain and delivery logistics, standardization, and temporary workers. China's adoption of platform economy principles and infrastructure borrowed largely from Japan, and spaces with significant Japanese influence, like Taiwan and Hong Kong, in the 1990s, began to organize social life. Housing, infrastructure, and logistics came to be centered around standardization, just-in-time efficiency, and hundreds of millions of temporary migrant workers.[19] By the 2000s, much of China's social life revolved around platform-like systems, evolving further with the integration of digital platforms, automated inventory systems, and logistics interfaces in the 2010s.

In a platform economy, workers engage in simplified, highly specialized tasks, promoting efficiency but reducing individual knowledge of overall productive activity. Similarly, a 'Convenient-for-the-People' city in a platform economy isolates state workers, preventing them from comprehending the full effects of their actions. From the perspective of low-level workers and the governed, these systems appear as black boxes generating statistics, taxation, and regulation. For city workers, it translates into banal, bureaucratic work, maintaining system equilibrium by ticking boxes. Over the 2000s, as China moved rapidly into a market-driven data capitalist system, the policing of political speech and action was given a different gloss through the term *bianmin* or 'Convenient-for-the-People'. That is to say, the discourse of convenience

17 Bryan Pfaffenberger, 'Social anthropology of technology', *Annual review of Anthropology* 21.1 (1992): 491-516.

18 Marc Steinberg, 'From automobile capitalism to platform capitalism: Toyotism as a prehistory of digital platforms', *Organization Studies* 43, no. 7 (2022): 1069-1090; Marc Steinberg, *The Platform Economy: How Japan Transformed the Consumer Internet*, Minneapolis: University of Minnesota Press, 2019.

19 Jacky FL Hong, Robin Stanley Snell, and Mark Easterby-Smith, 'Cross-cultural influences on organizational learning in MNCS: The case of Japanese companies in China', *Journal of International Management* 12.4 (2006): 408-429.

was not limited to discussions of 'sensitive' historical and life practice concerns, it was also a major part of the development of contemporary, logistics-driven capitalism.

In its most general sense, the term *bianmin* is linked to on-demand 24-hour service. Drawing on Singaporean models of urban design and governance, which were in turn modeled on Japanese infrastructural systems, the term began to appear in China first in the 2000s in the banking system.[20] This was one of the first spaces to be digitized with 'Convenient-for-the-People' ATM services that could be accessed any time of day at convenient locations aggregated throughout urban space.[21] This convenience-as-a-public-utility then moved from the financial sector and spread throughout the service economy with on-demand call centers and on-line message boards providing instant service to their customer base. In the 2010s it also began to cross over into the public sector in the naming of hospital payment processing centers and postal service centers. At the same time, it became synonymous with the national level 120, 119 and 110 emergency phone line system—which linked citizens with emergency health care, fire fighters and the police.[22]

At its core, the logic of the 'Convenient-for-the-People' infrastructure systems appeared to provide ordinary people with a full range of autonomous action, to provide self-service to citizens framed as consumers of goods and services. In the policing literature, this is framed as good for the consumer and the producer since direct access helps both to meet each other's needs.[23] And while 'Convenient-for-the-People' services do indeed make banking and health emergency services easier to access, what is missing here, in the context of data-driven capitalism and governance, is the way information flows are typically asymmetrical. The service provider actually gains a great deal more knowledge about the consumer's behavior than the reverse, particularly when the relationship is digitized, lurking in the background in apps and surveillance tools. While being 'in convenience' is often framed around economic production or consumption, it is also, in step with and independent of these, a form of governance, standardization, or world configuration. The producer-consumer relation is not only about market optimization, it is also about the optimization of power.

The Power of Convenience Stations in a Colonial Context

In 2014 the People's War on Terror positioned the Uyghur region at the forefront of both 'smart cities' and 'preventative policing' that were articulated to nationwide 'people's convenience'

20 Lu Peng and Bi Wenni, 'Comparative study of smart city security governance: Taking Singapore and Shanghai as examples', *Journal of Sinology* 17.1 (2023): 128-144. For a discussion of Singapore as a model for urban planning in China, see also Ananya Roy and Aihwa Ong (eds) *Worlding Cities: Asian Experiments and the Art of Being Global*. Studies in Urban and Social Change. Malden: Wiley-Blackwell, 2011.

21 Li Yuhua, 'Atm**防护便民亭**(Automatic teller machine (ATM) protective convenience-for-people booth)', PRC Patent Announcement Number CN 201891278 U, filed 13 December 2010, and issued 6 July 2011, https://patentimages.storage.googleapis.com/17/66/43/5a1adfff9b2071/CN201891278U.pdf.

22 'Convenient Police Service in the Internet Age', *Modern World Police* 3 (2016): 12-14. [**现代世界警察** 2016, (03),12-14**互联网时代的便民警务 吴尚 初福善 王晓燕 顾庆忠 谢红 郭广生 陈川**]

23 'Convenient Police Service in the Internet Age'.

services. This frontier intensification was shaped by the construction of more than 9,000 surveillance hubs known as People's Convenience Police Stations and the recruitment of 10,000s of assistant data police (*xiejing*) as policing 'grid workers' (*wangge renyuan*) that implement the hubs and associated checkpoints.[24] These stations, like the design and logistics of Chinese cities themselves, were modeled on police booths used in Singapore and Japan. Both emerge out of imperial legacies, from the expansionist Meiji era in Japan and the British police booth model in Singapore. Similarly, in those national contexts, both were folded into platform economies that transformed their respective economies in the 1980s. In both places, police booths are frequently positioned next to convenience stores as a parallel form of provisioning. But while the material infrastructure of Chinese police booths may be borrowed from the platformization of other Asian cities, the function of the police booths in Northwest China—the site of their most intensive use in China, focused on a racialized colonial project of policing inconvenient Muslim bodies. The remainder of this chapter will focus on the functions and shape-shifting effects of these convenience stations.

The stations, which were built every 200-300 meters, function as surveillance hubs in the segmented 'grid' of the policing logistics system that strove to achieve knowledge of any abnormalities in the lives of residents and non-residents of the grid as they moved between checkpoints. By breaking down the population of the city into quantifiable numbers they made the task of tracking the behavior of individuals feasible. For many in the protected population of residents, the convenience stations appear to be a silent presence, perhaps even a welcome presence, since their ubiquity means that state workers are always nearby. According to an interview with a Ürümchi police chief named Lu Wenlong, the People's Convenience Police Stations provide 'The People' with 24-7 access to public toilets, wireless Wi-Fi, first aid kits, mobile phone charging stations, escort services for the elderly and children, and legal publicity work. That is, they facilitate a relationship of being 'in convenience' with on-demand data and care services. The convenience stations attempt to increase the efficient circulation of the things and people that are wanted by local authorities, while decreasing the circulation of things and people that are unwanted. Local authorities refer to this as an important aspect of 'stability work' in fighting the 'three evil forces' of religious extremism, ethnic separatism, and violent terrorism. Put simply, the convenience stations are there to make settlers feel safe from violence in a space where they are in fact the violent presence.

As part of an infrastructure of feeling, the convenience stations interpellate both the 'consumers' of policing services, and the Muslims that they target, pulling them into an ongoing relationship with the aesthetics and gaze of the state. The blocky concrete stations often occupy sections of previously open sidewalk or parking lots near the checkpoints at the entrances of institutions. They are often two stories high and feature a tower or pole topped with red and blue flashing lights. No matter where a pedestrian is in the city, they are often able to spot the lights of a convenience station down the street. If there is none within sight, one can rest assured that there isone right around the corner. The stations often have a horizontal red

24 Vicky Xiuzhong Xu, James Leibold, and Daria Impiombato, *Architecture of Repression: Unpacking Xinjiang's Governance*, Australian Strategic Policy Institute, 2021, https://www.aspi.org.au/report/architecture-repression.

LED sign that scroll slogans from the most recent national Party congress, or, failing that, a red banner with similar phrases about social stability and fighting terrorism. The stations are built with pedestrians in mind. The convenience stations are meant to be seen as a positive sign that the state, like a benevolent bank distributing ATMs throughout the topography of its customer base, was there to provide services to the protected majority. They remind the protected population of the care of the state, and to stay vigilant, while at the same time they send a message to Muslims that they are always being watched. It was clear to everyone I spoke with, when I conducted field research in the region in 2018, who exactly the 'Convenient-for-the-People' stations were convenient for. Convenience is far from a neutral descriptor. It naturalizes the consumer-citizen as carriers of value and simultaneously produces Muslims as separatists, extremists, terrorists as carriers of threat.

To understand the arrival of convenience stations, checkpoints and other tools of sorting and atomization in the 'doing' or 'producing' of infrastructural power in the city, I want to return here to the plan and function of the platform economy and its intersection with the smart city.[25] The notion of the 'smart city' can be theorized as an analogous construct to a stack of platforms whose primary objective is the enclosure of docile yet productive citizens. In this context, convenience stations are analogous to workstations or platform distribution hubs wherein state workers actively engage in the sorting and shaping of citizen behaviors in the most efficient way possible. The five zeroes of the Toyotist model can be thought of in this context as: zero delay in detection, zero unaccounted-for bodies, zero unneeded information, zero crime, and zero breakdowns in the system.[26] The stations strategically positioned within the city and at its perimeters function as pivotal nodes within a vast surveillance apparatus. These checkpoints sort the population: matching biometrics to official identification documents at turnstiles. Additionally, the multiple checkpoints associated with the stations are equipped with datadoors and metal detectors, developed by the China Electronics Technology Corporation: a military contractor and parent company to HikVision, the world's largest camera manufacturer. These devices were specifically designed to detect and register the MAC addresses of smartphones, further contributing to the surveillance regime.[27]

This process, particularly in its initial implementation phase, was time-intensive and indiscriminate, affecting all citizens. However, as narrated by a Han interviewee, a noticeable shift occurred over time, matching the changes in discourses of convenience discussed at the beginning of this chapter. Initially, all passengers, regardless of ethnicity, were subjected to these checks, resulting in significant delays. However, a subsequent modification in the operational protocol led to the exclusion of Uyghurs from public transportation services, as

25 For a further exploration of this analogy see Darren Byler, "Producing 'Enemy Intelligence': Information Infrastructure and the Smart City in Northwest China," *Information & Culture* 57.2 (2022): 197-216.

26 The five zeros of Toyotism are famously: Zero delay: products are manufactured in just-in-time; Zero stock: no overproduction is tolerated; Zero paper: paper consumption is reduced to a minimum; Zero defects : no product must be defective; and Zero breakdowns: no machine defects are tolerated. See Ricardo Silva et al., 'Active Learning 'Factory of Boxes' in the Teaching-Learning Processes in Engineering and Entrepreneurship', *Journal of Technical Education and Training* 13.3 (2021): 1-14.

27 'China: Big Data Fuels Crackdown in Minority Region', *Human Rights Watch*, 26 February 2018, https://www.hrw.org/news/2018/02/27/china-big-data-fuels-crackdown-minority-region.

buses began to depart checkpoints, leaving Uyghur individuals behind while transporting Han passengers directly to urban centers. This change was perceived by the Han interviewee's relatives as an improvement, indicating a societal adaptation to, and acceptance of, the ethnoracially biased operational mechanisms of the convenience stations.

The stations and checkpoints formed what the Ürümchi police chief purported to be a 'seamless' system[28]—a response to Xi Jinping's 2014 call to build 'walls of steel' and a 'net over the sky' to defend against Muslim terrorism.[29] The tasks of the data police on the production line consisted of 'fixed duty, video patrol, car patrol, foot patrol, and plainclothes patrol'.[30] Based on prior research, it is clear that much of the work of police assistants focused on the first two tasks, sorting populations at fixed checkpoints and watching banks of video monitors.[31] In some areas such as mosques and train stations, face recognition-enabled cameras would issue alarms if someone identified by a watchlist walked in front of them or scanned their ID at a turnstile.[32] A Kazakh woman I interviewed in Kazakhstan in January 2020, soon after she fled across the border, said that it 'became normal' to have her face and ID scanned 10 times during an average work day.[33] Her phone was also scanned with a plug-in device on a regular basis.

The city itself effectively became what might be thought of as platform stack for producing protected citizens and enemy 'terrorists'—with automated dataveillance scans and biometric surveillance grids fitted on top of material checkpoints run by neighborhood level informants, all of which were constantly feeding data into an integrated region wide system. The form and function of the convenience stations and checkpoints separated movement and assessment of individuals into discrete procedures which were replicated across the entire population of city blocks in sequence. That is, the arrangement of the stations and checkpoints—the aggregation of blocky gray concrete buildings at traffic intersections and the chrome-barred, camera-studded turnstiles in entrances to public buildings, housing complexes and jurisdictional boundaries—amplified the inconvenient presence of some people and behaviors, justifying their removal, and thus smoothing out the space for the convenience of the protected majority. The police records I have reviewed show that the default, non-Muslim body who moves through the checkpoints and automated surveillance systems without targeted assessment is unnoted even as their movements are also recorded.

Much of this work of producing disposable others and protected citizens was done using the parameters of smartphone apps and digital forensics tools. For instance, on a weekly basis

28 Zhang Xinde, 'Wulumuqi shi dajie xiao xiang jiang jian 949 ge bianmin jingwuzhan [949 People's Convenience Police Stations have been built in the streets of Ürümchi]', *Yaxin Net*, 2016, https://kknews.cc/society/2a4mrng.html.

29 'Xi urges anti-terrorism 'nets' for Xinjiang', *Xinhua News*, May 29 2014, http://www.chinadaily.com.cn/china/2014-05/29/content_17552457.htm

30 Zhang Xinde, 'Wulumuqi shi dajie xiao xiang jiang jian 949 ge bianmin jingwuzhan'.

31 Byler, *In the Camps*.

32 Chinese Government Procurement Network, 'Xinjiang Shawan County Smart (Safe) Project Feasibility Study', *ChinaFile*, 2017, https://www.chinafile.com/library/reports/xinjiang-shawan-county-smart-safe-project-feasibility-study.

33 Byler, *In the Camps*.

at half a dozen convenience stations and assorted checkpoints, around 40 officers scanned the phones of more than 2000 people using a digital forensics tool called an 'Anti-Terrorism Sword'. These devices made by a range of companies used software from the company Meiya Pico and the Urumchi Public Security Bureau. The tools were themselves adapted from devices developed by the Israeli company Cellebrite and were used to search for more than 53,000 unique identifiers of religious and violent activity. In addition to scanning phones, the convenience station workers also manually scanned the faces of more than 900 people using face recognition software installed on their smartphones. Throughout 2018 the weekly reports present slight fluctuations in these numbers, some weeks the station workers scanned slightly more, some weeks slightly less. In an average week it is likely that close to half of the adult Muslim population in the jurisdiction was subjected to phone scans. My interviewees told me that they began to anticipate that their phone could be scanned at any time.[34] The consistent aggregation and repetition of these digital and the biometric scans train the Muslim population in how to use their phones and stay within their allotted place. Information that should have been disregarded as noise was instead detected via the parameters of assessment as signals of being too Muslim. Ethnic and religious difference was detached from the lifeworld of the surveilled, becoming a technology—a multi-step algorithmic assessment scored on a smart phone interface—in the hands of a convenience station employee.[35]

Disposability

'Convenient-for-the-People' policing stations begs the question: convenient for who? By examining the material and political effects of convenience stations themselves, this chapter has explored the intimate relationship between market-driven logics and governance infrastructures. But what ultimately is the goal of this marriage? This system is of course not only a product of lessons learned from Japanese and Singaporean models of global capitalism, since the political will to hire 10,000s grid workers to work in the surveillance stations comes from a socialist legacy of mass mobilization and Maoist neighborhood committees that policed counterrevolutionary thought.[36] But the goal of the current system is not to reform the thoughts of Muslims by teaching them socialist critiques of class privilege. The goal now is to smooth out space, making it consistent, predictable. Seamless. It is attempting to manage and, ultimately, eliminate the inconvenience of Muslim bodies out of place. Muslim communities that remain rooted in their native land and traditions need to be standardized, enclosed, reformed *and spent* in service to the convenience of the settler population. To put this simply, Muslim lives are made disposable.

In her framing of disposability, Neferti Tadiar highlights the way Latina, Chinese and Filipina migrant women, and the settler colonized, such as Palestinians, are pushed into a spectrum of 'used up' life forms as a feature of the contemporary global economy. The lives of these inconvenient others are spent serving or waiting according to the convenience of protected

34 Byler, *In the Camps*.

35 For a parallel discussion of 'race-as-algorithm', see Sareeta Amrute, 'Bored techies being casually racist: race as algorithm', *Science, Technology, & Human Values* 45.5 (2020): 903-933.

36 Byler, *Terror Capitalism*.

citizens in such a way that the intrinsic value of their lives decline irreversibly over time.[37] The Uyghurs and other Muslims who are made the object of the 'Convenient-for-the-People' system I have described in this chapter are also forced into such conditions of disposability. Like Palestinians they are forced by a carceral settler state to wait for a life worth living that will never come. Like guest worker populations they are forced to spend their socially reproductive lifetimes to reproduce the convenience of lives that are not their own. That is to say, the spent lives of colonized Others, like guest workers and other precarious or temporary workers, is crucial to the global economy of convenience. In the Uyghur case, this spending of life appears in fortified factories and plantations—where their time and labor are stolen from them in service to the production of cheap fast fashion products for the domestic and global market. In still other instances their unfree labor is spent in the reproduction of people's convenience as an urban infrastructure of feeling itself.

In a video obtained by the *New York Times* in 2019, Uyghur workers are shown wearing orange sanitation uniforms in a locked dormitory.[38] By day they are forced to sweep the streets of a Chinese majority city in Northern Xinjiang, at night they are forced to study Chinese language. One of the workers furtively interviewed in the video says that he is being paid a third of what he made before he was swept up by the system. The compound where they have been for over a year is guarded by a People's Convenience Police Station. It is what stands between them and their families. The system it represents is what monitors them during the day as they sweep the streets, creating the convenient consistency that settlers around them desire. On the wall of the dormitory a sign instructs the workers on how to maintain the convenient neutrality that the system is designed to produce when they are outside of the compound. It says:

> *Treat people with politeness, be neither servile nor overbearing.*
>
> *When receiving help, say 'Thank You'.*
>
> *When being misunderstood, say 'Sorry'.*

As human infrastructure in the affective system of being 'in-convenience', Muslim workers it appeared were to strive to be unnoticed, 'neither servile nor overbearing', when interacting with 'the People'. That is, they were to pretend that they had not been placed in servile positions. Instead, they were to take on an affect of on-demand customer service in deference to the People's Convenience brand. Their job was to reproduce the enjoyment of non-Muslim convenient life.

When asked if he can ever return home to see his family, the Uyghur man interviewed in the video responds, 'return home? No, no, no'. In the refrain of the 'no, no, no' of Uyghur-accented Mandarin there is a feeling that even thinking about this out loud might be read as a violation

37 Tadiar, *Remaindered Life*, p. 91.

38 Chris Buckley and Austin Ramzy, 'Inside China's Push to Turn Muslim Minorities Into an Army of Workers', *New York Times,* 30 December 2019, https://www.nytimes.com/2019/12/30/world/asia/china-xinjiang-muslims-labor.html.

of the role he has been forced to play. The infrastructure of feeling produced by 'convenience for the people' is everywhere. It appears that playing his role, cleaning the streets of a convenience-oriented platform city, working everyday to make up for his inconvenience, is the only way the Uyghur man can spend his lifetime.

Over the 2010s the people's convenience system transformed life in Northwest China. Ordinary experience was reorganized. For Han people, buying bread became newly logistical. For Uyghurs, this transformation placed them in service to the promise that Han convenience would continue to grow. The streets would always be clean. The products would always be cheap. The temporal and spatial sovereignty of Han citizens would always be enforced by the People's Convenience police stations. The convenience infrastructure of feeling routinized the disposal of Uyghurs and legitimated Han citizenship. Even in China's internal settler colony—the site of a People's War on Terror, life was once again reassuringly convenient. Being 'in-convenience' was guaranteed.

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THE RESILIENT SITUATION: ADAPTIVE MANAGEMENT, FINANCE, AND ENVIRONMENT

ORIT HALPERN

Convenience appears to be a memory of the past. Climate crisis, geo-political instability, economic volatility, and technical change all make the ideals of labor, lifestyle, and comfort that originally defined the term 'convenience' seemingly no longer achievable. According to the admittedly limited google n-gram, convenience has fluctuated, but in the United States the 1950s appeared to herald the most recent height of its use. Convenience store interestingly peaks in 2002. The relationship thus with convenience as an aspiration, and convenience as a logistical reality are apparently separated; but both appear closely linked to economy and technology. The decline of convenience stores in n-gram results might be understood as related to the rise of the internet and other forms of consumption.

The original rise of convenience in the post-war period occurred within a context of rapid suburbanization, the rise of a popular consumer society. By deduction, one might assume that convenience would be tied to American imaginaries of nuclear families, unlimited economic growth, prosperity, and technological advancement. The convenience of consumption and the ideals of comfort in lifestyle reflected and refracted social values concerning accessible consumption, the demand for new infrastructures of mobility, and the clear spatial organization of gendered labor, and racial apartheid, that is often related to the ideals of Cold War America.[1]

Today, however, we appear to be in a *new situation*. One that is replacing the ideals and logics of Keynesian Cold War America and even the globalized consumer with a new logic. Terms such as 'new normal' and even 'next normal' are appearing in the discourses of major policy making, corporate, and governmental institutions.[2] In turn, policy makers, psychologists, ecologists, and business strategists all urge making systems, institutions, and even human subjects, resilient; capable of enduring *and even profiting* from change and crisis. A new expectation has emerged that disruption and volatility are to be expected. Moreover, this new situation appears to have an immanent relationship to smartness, AI, and digital technologies. Ever smarter and data-driven systems are imagined to be the technical managers of these new levels and scales (temporal, geological, spatial) of volatility.[3]

Whereas convenience implies comfort, stability, even stasis, in its most popular uses, resilience thus defines radically different ideas of life, economy, technology, and futurity. Emerging from both recognition of anthropogenic changes to the environment and the concept of the information economy, resilience, I argue, may be the dominant logic of contemporary digital

1 Melinda Cooper, *Family Values: Between Neoliberalism and the New Social Conservatism*, New York: Zone Books, 2017.

2 Aongus Hegarty, 'Digital Resilience: Building the Economies of Tomorrow on a Foundation of Cybersecurity', *World Economic Forum*, 20 May 2022, https://www.weforum.org/agenda/2022/05/digital-resilience-building-the-economies-of-tomorrow-on-a-foundation-of-cybersecurity/.

3 Orit Halpern and Robert Mitchell, *The Smartness Mandate*, Cambridge: The MIT Press, 2023.

media systems. This article posits that many of us (of course not all and not everywhere) live in a *resilient condition.*

Resilience and convenience have, however, critical genealogical interactions. Resilience is in many ways a logic arriving from the infrastructures and attention economies first produced for the fantasy of globalization and convenience. Marc Steinberg and Joshua Neves argue that convenience is about the management of time and space. They map convenience to certain infrastructures of both logistics and attention (immediate gratification, on-demand fulfillment, and immediacy) seemingly necessary for economic survival and impossible to contest. Perhaps, one might deem this convenient condition 'natural'.[4]

This naturalization involves also the obfuscation of the extreme violence of the logistical labor arrangements necessary for delivering so many products and streaming so much content 'just in time'.[5] The strained and overworked warehouse employees, the toxic labor conditions of mineral and energy extraction, the securitization of borders and migration, and the precarity of gig-laborers all exemplify the costs of 'convenience'.[6] Understanding what might be at stake in this emerging reformulation of convenience into resilience is important for thinking how we might intervene in, but also re-imagine, our relations through and to contemporary digital media infrastructures.

The Resilient Situation

For example, at the last Davos Conference held in May 2022, the World Economic Forum (WEF) announced that resilience would become one of the central concepts organizing global response to the war in the Ukraine, climate change, and the aftereffects of the COVID pandemic. The Forum identified a series of central challenges or 'frontier risks' that accompanied these events. Rapid technological change, climate disturbances, economic volatility and disparity, and balkanization rose to the top. These risks, if not managed correctly or even capitalized upon, would pose dangers to globalization and plural democracy. Institutions therefore need to become 'resilient'. As the President of International Markets at Dell Technologies, Aongus Hegarty put it at the Davos conference in 2022, we need 'digital resilience'. This digital resilience emerges from the unprecedented acceleration of 'innovation' in the sector from the COVID-19 pandemic, and 'positions an enterprise to pivot fast, adapt to fluid conditions, maintain seamless business continuity, and capitalize on opportunities'.[7] Such agility and fluidity will be accomplished, Hegarty argued, by centering cybersecurity accompanied with ubiquitous computing (we may presume that this is a central concern for the Dell corporation).

4 Joshua Neves and Marc Steinberg, 'In Convenience', in this volume.

5 Emily West, *Buy Now: How Amazon Branded Convenience and Normalized Monopoly*, Cambridge: The MIT Press, 2022.

6 Deborah Cowen, *The Deadly Life of Logistics: Mapping Violence in Global Trade*, Minneapolis: University of Minnesota Press, 2014; Ned Rossiter, *Software, Infrastructure, Labor: A Media Theory of Logistical Nightmares*, New York: Routledge, 2016.

7 Hegarty, 'Digital Resilience'.

While resilience might commonly be thought of as a psychological or environmental attribute, the WEF highlights the new centrality of this term to organizing political economy. As discourses of resilience imply, the idea that we now live in a world of both constant technical innovation and regular trauma appears natural. What is at stake in this discussion is fundamentally how we understand social, natural, and technical change and how corporations, governments, and other institutions plan and respond to change. While the management of supply chains, finance, and natural sciences are not always thought together, this essay intends to preliminarily map out notions of this 'new normal' and the changing models of both nature and economy that underpin it.

Replacing notions of comfort, convenience, and control, 'resilience' has become a valued quality in both supply chains and human psychologies. It might then appear un-intuitive that this article is in an issue dedicated to 'in/convenience'. Hardly. This new condition is not autonomous from the history of convenience and logistics; in fact it is grounded in the infrastructures and even cannibalization of earlier ideals of immediate access to consumer items, and speed of global delivery of goods. In fact, as I will show, most of the ideas and management tactics that are now labelled 'adaptive' or 'resilient' initially emerged under the conditions that Neves and Steinberg articulate as critical to convenience. However, it has critical divergences as well that I would like to put forward for political reasons. I insist on the separation from the language of convenience and even in/convenience because those conditions still maintain fantasies of comfort as an aspiration and ideal, and still focus on individual consumption as the key site of governmentality.

Resilience, on the other hand, is a language resolutely entrenched in biological concepts of species survival, not in individual and liberal ideals of choice and consumerism. This is a central transformation that is embedded in new geo-political realities where the smooth imagined space of globalization and its supply chains has been transformed into new ideas of planetarity, fragmentation, borders, and constant precarity for many people and more-than-human forms of life.

Resilience, I will argue, consumes the infrastructures of convenience, but now reformulates the systems dedicated to ease, leisure and comfort in terms of survival. There are both positive and negative features to this move. Fundamentally, discourses of resilience recognize the imbrication of human systems with earth systems (therefore the switch from globalization to planetarity). Resilience comes attached to new forms of 'adaptive management' that articulate and co-produce geopolitical and environmental bordering and disruptions. Finally, resilience has different ideals of future making, and new reactionary political-economic imaginaries of a lost 'stable' past. Yet resilience is not a discourse only adopted by corporations and management discourses, it also appears in other places. For example, in the concept of 'after comfort' in architecture, articulating a demand to construct housing beyond mechanized forms of climate control; or in re-imagining spatial relations by engaging the impossibility of eliminating toxicity in our environment and assuming that we need new relations to atmosphere and environment that accept the impossibility of "purity" and demand learning to live,

or perhaps one progressive form of resilience for existence.[8] The Black Lives Matter organization too adopts resilience in its mission statements, implying the ongoing violence of racism, as well as the ability to withstand and overcome such structural and infrastructural politics.[9]

We witnessed the supersession of resilience discourses throughout the COVID pandemic, when convenience was recast as necessity. Disease, but also increased stresses and temporalities of labor, were re-articulated as demanding at-home delivery and streaming services. It was no longer convenience, it was survival. People could *not* go to stores, theaters, or restaurants; yet this was not framed as a question of merely choice, but an environmental and economic necessity. Health risks, time constraints, excesses of workload, and transformations in the work environment all demanded home delivery and online services. Such survivalist and biological, even racial arguments can of course also be negative, re-affirming and solidifying essentialist and bio-deterministic conceptions of identity, politics, and society. [10] This is a survivalism affirmed by the fact that resilience, as I will show, has a history related to ecology, modelling extinction and population change over time, and concepts of how to model nature.

Becoming Resilient

Concepts of resilience emerged precisely at the moment when Fordist production and Keynesian economics were being supplanted by new attitudes to both nature and economy. Resilience emerged first as an idea in ecology mirroring the very rise of the convenience economy and platforms of just-in-time production and globalization that has been documented by many authors.[11] In 1973, the Canadian ecologist C.S. Holling introduced this new concept of resilience to the discourse on nature, evolution, and extinction:

> *Individuals die, populations disappear, and species become extinct. That is one view of the world. But another view of the world concentrates not so much on presence or absence as upon the numbers of organisms and the degree of constancy of their numbers. These are two very different ways of viewing the behavior of systems and the usefulness of the view depends very much on the properties of the system concerned.*[12]

Holling posits a world where change, even catastrophic change, is the norm and heralds not the end of systems but evolution. Extinctions happen but systems, 'degrees' and evolu-

8 Daniel A. Barber, *Modern Architecture and Climate: Design before Air Conditioning* (Princeton: Princeton University Press, 2020); Daniel A. Barber et al., 'Editorial', *E-flux Architecture*: 'After Comfort: A User's Guide' (October 2023), https://www.e-flux.com/architecture/after-comfort/568230/editorial/; Nerea Calvillo, *Aeropolis: Queering Air in Toxicpolluted World*s, New York: Columbia University Press, 2023.

9 Black Lives Matter, 'About', https://blacklivesmatter.com/about/.

10 Lydia Polgreen, 'Restoring the Past Won't Liberate Palestine', *The New York Times*, 18 February 2024, https://www.nytimes.com/2024/02/18/opinion/israel-gaza-palestine-decolonization.html.

11 Marc Steinberg, *The Platform Economy: How Japan Transformed the Consumer Internet*, Minneapolis: University of Minnesota Press, 2019; Anna Tsing, *Friction: An Ethnography of Global Connection*, Princeton: Princeton University Press, 2004.

12 C.S. Holling, 'Resilience and Stability of Ecological Systems', []{#_Hlk165292233 .anchor}*Annual Review of Ecological Systems* 4 (1973): 1.

tion continue. Rather than focusing on the event of extinction, or the numbers of animals or humans in an ecosystem, Holling argued that ecologists should instead think about the *relationships* in a system. The environment itself had to become a system which had 'properties' that, like programs, could be maintained irrespective of the life or death of individuals. This new concept of resilience thus posited a new idea of both change and event.

Ecology and economy have of course long been linked both in etiology and in ideology. Statements emerging from ecology were anticipated in economics. In 1971 Chicago School neoliberal economist Milton Friedman made a seemingly similar pronouncement, this time in relationship to currency markets. He announced a 'major need for a broad, widely based, active, and *resilient* futures market'.[13] Counter to standard understandings of the economy at the time he projected a positive valence for active, volatile markets. For Friedman, the collapse of the Bretton Woods system was not a calamity, but an opportunity for creating a new, what he labelled 'resilient' system of international currency exchange. In an article titled 'The Need for Futures Markets in Currencies', Friedman acknowledged that, in the absence of an international system of currency controls, exchange rates would shift constantly in relationship to one another. The architects of Bretton Woods had seen such volatility as a problem, since it meant that those engaged in foreign trade would have to take significant risks that the currency in which a trade was negotiated would depreciate by the time payments were to be made. Bretton Woods thus sought to institute a 'system of rigidly fixed [exchange] rates that do not change'. However, as Friedman noted, they ended up with a 'system of rigidly fixed rates subject to large jumps from time to time', and these large jumps eventually broke what was designed to be a rigid system of control.[14] Friedman argued that the solution could not be another rigid centrally-controlled system, but instead a resilient futures market for currencies: that is a system that might allow those engaged in foreign trade to hedge the risks associated with currency exchange changes.

For Friedman, 'resilience' was to be understood as the opposite of 'rigidity', and would mean, in practice, something like the oxymoronic notion of 'stable change'. More specifically, curren-

13 Milton Friedman, 'The Need for Futures Markets in Currencies', *Cato Journal* 31.3 (2011): 637. Friedman stressed that this market 'cannot depend solely on hedging transactions by persons involved in foreign trade and investment'; in addition, the 'market needs speculators who are willing to take open positions as well as hedges. The larger the volume of speculative activity, the better the market and the easier it will be for persons involved in foreign trade and investment to hedge at low costs and at market prices that move only gradually and are not significantly affected by even large commercial transactions' (638). The terminology of 'resilience' seems not to have been Friedman's innovation, as other economists had also used this term in the late 1960s when discussing the need for Bretton Woods reform.

14 Friedman, 'The Need for Futures Markets in Currencies', 636. This article is a reprint of a December 20, 1971 report to the Chicago Mercantile Exchange, and as Donald MacKenzie notes, this was an 'article for hire', as Friedman was paid by the head of the Chicago Mercantile Exchange to write the article, which was intended to (and did) pave the way for federal approval of precisely such a market. Hence, the article advocates not only for a futures currency market, but for its location in the United States. Friedman contended, '[a]s Britain has demonstrated in the nineteenth century, financial services of all kinds can be a highly profitable export commodity', and proposed that a U.S.-based futures market would strengthen the American position while also maintaining the stability and expansion of global trade.

cy markets would change in response to global events, but nevertheless continue to protect international trade, the international global political order of the West, and the primacy of the United States within that order.

These new ideas of nature came then within a context where older models of political economy were also in flux. The end of Bretton Woods, decolonization, post-Fordism, and the OPEC oil crisis, to name a few of the transformations at the time, induced extreme volatility in politics, currency, and commodity markets. New financial technologies and institutions, such as derivative pricing equations and hedge funds, emerged in order to hedge bets. These technologies literally produced ways to insure that risks were reallocated, decentralized and networked. Dangerous bets would be combined with safer ones and dispersed across multiple territories and temporalities (consider short bets, credit swaps, and futures markets). Corporations, governments, and financiers flocked to these techniques of uncertainty management in the face of unnamable, and unquantifiable, risks.[15] Epistemologically ecology and finance would then come to share a model of a world of ceaseless volatility and uncertainty.

Cybernetic Systems

Volatility and uncertainty were not always considered the norms of nature. Since the Second World War, cybernetically informed ecologists had built models that understood the world in terms of homeostatically organized networked systems.

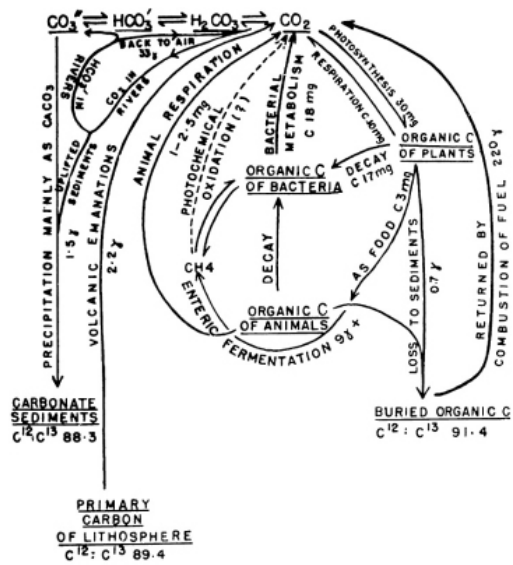

Fig. 1: Schema of biogeochemical processes from G. Evelyn Hutchinson, 'Circular Causal Systems in Ecology', Annals of the New York Academy of Science 50 (1948): 223.

15 It is worth noting that the Black Scholes Derivative pricing equation inaugurating the financialization of the global economy was introduced in 1973. For an excellent summary of these links and of the insurance and urban planning fields, please see Kevin Grove, *Resilience*, New York: Routledge, 2018.

Initial models grounded in communication sciences and tested on the landscape of nuclear blast sites, valorized stability. Ecosystems were supposed to be made of feedback loops that aspired to balance, much like the early models of a homeostat coming from the sciences of communication and control.

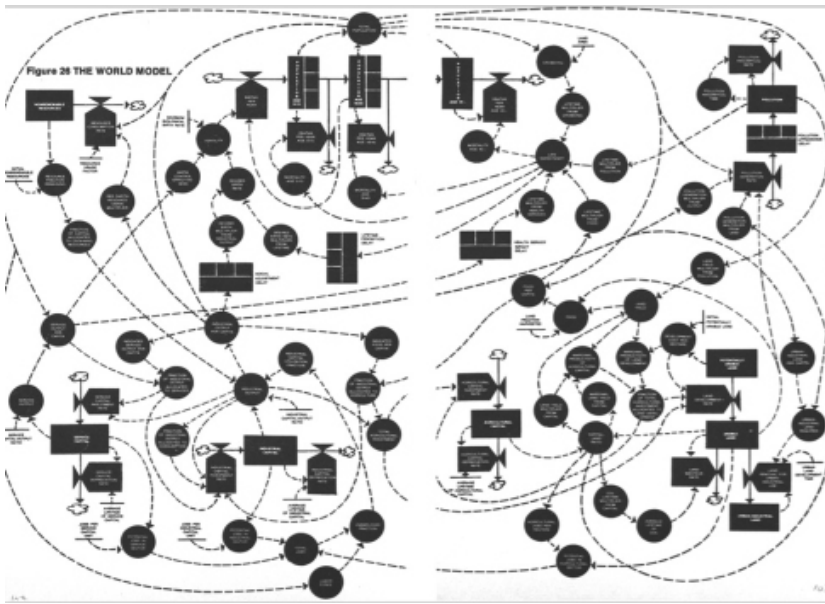

Fig.2: The World Model, from Donella H. Meadows et al., The Limits to Growth, New York: Universe Books, 1972, p. 102.

Imbalance was to be avoided, and systems would have to be managed for stability. The most extensive efforts at computing the future of the planet and its populations, *The Limits to Growth* report of 1972, modelled, to cite Paul Edwards, such a 'closed' world with limited resources that had to be kept in balance.[16] The clarion call to an emergent environmental movement, this computerized report saw a world in need of balance, one where change was an anomaly not a norm. Computer scientists modelled human behavior and populations as aberrations producing terminal traumas on the environment that would lead to catastrophe. The answer was to restore the balance of the planet through the careful management of feedback loops and return it to a sustainable state.

Such notions of cybernetically informed balanced systems were also readily found in business manuals and management approaches. While this article is too short to outline the centrality of ideals of operations research, cybernetics, and game theory on economics and logistics, a wealth of research has done so.[17]

16 Paul N. Edwards, *The Closed World: Computers and the Politics of Discourse in Cold War America*, Cambridge: The MIT Press, 1997.

17 Cowen, *The Deadly Life of Logistics*; Jesse LeCavalier, *The Rule of Logistics: Walmart and the*

Volatility and Adaptation

But many ecologists, environmentalists, and economists did not agree with the report. Ecosystems, they argued, did not appear to stabilize after suffering disruption. There could be no going back historically to a less "damaged" planet. DDT had demonstrated destructive results impacting systems far outside the immediate locus of intended insect elimination in agriculture and for purposes of public health. Agent Orange, heavily used in the Vietnam War as a defoliant, and related dioxins were demonstrated to produce long ranging impacts on humans and ecosystems. And the list goes on. Just ceasing the use of a toxin or attempting to reseed an environment did not return systems to their pasts. Even seemingly environmentally friendly actions, such as lowering fishing quotas or replanting trees would be found to return little result once certain levels of disruption to the ecosystem were surpassed.[18] Nature appeared to constantly be evolving.

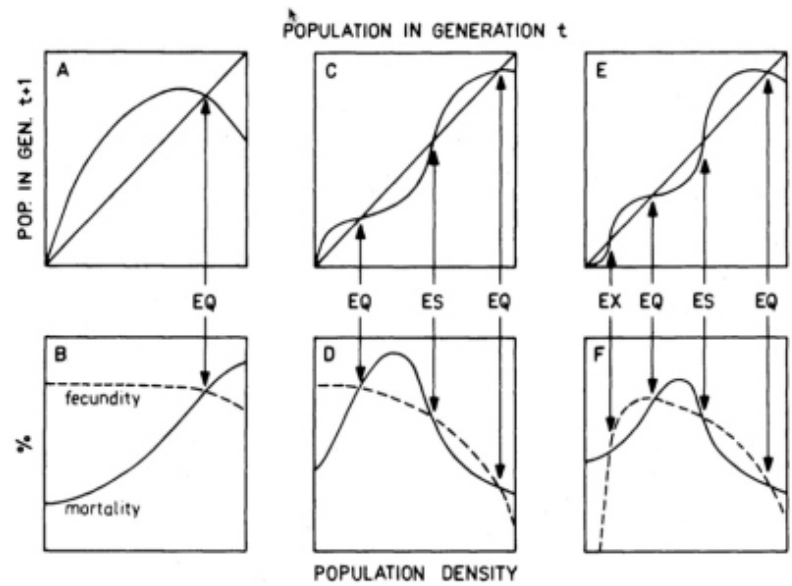

Diagram from C.S. Holling, "Resilience and Stability of Ecological Systems," demonstrating theoretical examples of various reproduction curves (a, c, and e) and their derivation from the contributions of fecundity and mortality (b, d, and f).

Fig 3: Future Population Projections from C.S. Holling, 'Resilience and Stability in Ecological Systems', Annual Review of Ecological Systems 4 (1973): 10.

Architecture of Fulfillment, Minneapolis: University of Minnesota Press, 2016; Steinberg, *The Platform Economy*.

18 'Agent Orange', *History.Com*, 2 August 2011, updated 16 May 2019, https://www.history.com/topics/vietnam-war/agent-orange-1; Jacob Darwin Hamblin, *Arming Mother Nature: The Birth of Catastrophic Environmentalism*, Oxford: Oxford University Press, 2013.

Resilience

In response, a new discourse began to emerge in ecology—resilience. Countering the discourse of *Limits to Growth,* C.S. Holling developed the concept of resilience to *contest the premise* that ecosystems were most healthy when they returned quickly to an equilibrium state after being disturbed. His argument, first cited at the beginning of this article, was that over-emphasis on predator-prey relationships often ignored more complex interactions, and over-valued equilibrium. Nitrogen, carbon, and other cycles, interactions of mutual aid, collaboration, or competition between many species not structured as predator-prey relations, and myriad other such factors might permit ecosystems to persevere in their functions even if in mutated or varied forms. Extinction might not be the limit to the growth or change of a system, unless it fundamentally transforms a complex web of interactions that sustains life. The seeming absolute limit to life—extinction—could therefore be extended by factoring in complexity and a new value for biodiversity.

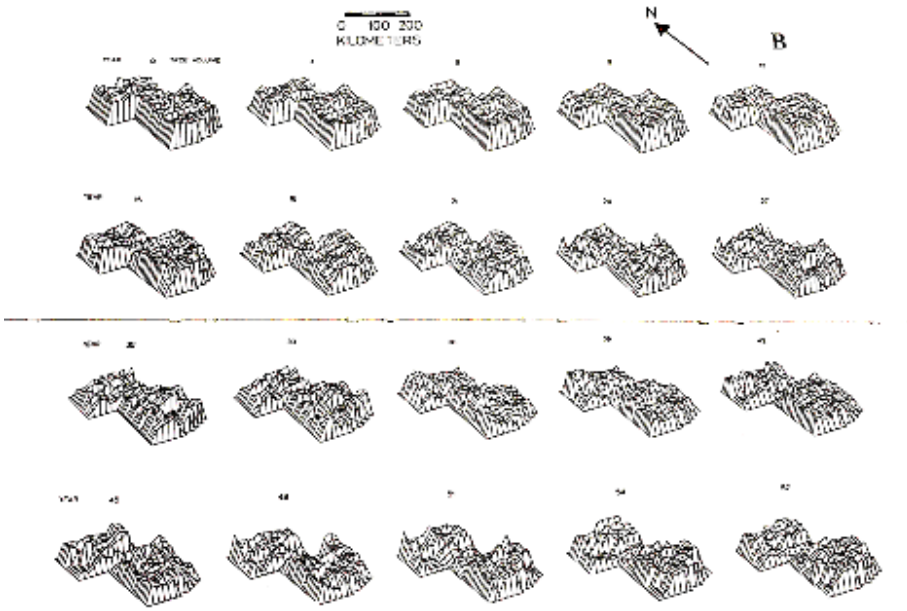

FIGURE 11.8 Spatial behavior of the budworm–forest model under historical harvest and spraying rules. The coordinates are as defined for Figure 11.7. The orientation and scale of Figure 11.8A are the same as in Figure 11.8B. Figures 11.8A and 11.8B show patterns of egg density and tree volume, respectively, beginning with conditions known to exist in 1953. Compared to Figure 11.7, the management policies can be seen to preserve trees, but at the expense of creating permanent semioutbreak conditions, highly sensitive to policy failure.

Fig 4: Topological models generated from historical data since 1951 of budworm population densities in space. It is also worth noting that these new forms of dynamic maps and capacities to compare data sets came with the introduction of digital computation and new platforms such as the Canadian Geographic System (CGIS) considered the root of contemporary GIS systems in the early 1970s.[19]

19 C.S. Holling (ed) *Adaptive Environmental Assessment and Management*, New York: John Wiley and Sons, 1978, pp. 164-165.

If sustainability was the language of stable systems in a cyclical economy, resilience is the language of volatility. In an early critique of industrial fishery and forestry management, Holling argued that the focus on using insecticides, re-seeding lakes with fish, or attempting to simply replant one type of tree would not work over extended periods of time. *Managing ecosystems with a focus on stability was an error.* Managers, he suggested, had to cease counting and taxonomically placing populations in boxes and flow charts, and needed to realize that *positive* feedback is dynamic and produces change. Populations are not static numbers but ongoing processes. The important thing is to maintain the process, not the steady state of the system.

For example, in the case of the boreal forest the absolute number of spruces is not important, what is important is the ability of the forest to rejuvenate and continue growing trees, which depends on fluctuating numbers of populations and constant variations between spruce, fir, birch and budworms. The system regularly changes. In general, this allows the forest as a forest to continue existing. Better ecological management might also apprehend the fact that systems ultimately change. For example, since forests in Ontario are increasingly used for leisure and vacationing, then forestry management must change accordingly. For other systems, one might identify different processes defining them. Today we deploy the term 'ecosystem services' to describe this process of identifying and managing processes rather than discrete numbers.

Resilience, by contrast with sustainability, denoted for Holling the capacity of a system *itself* to change in periods of intense external perturbation, as a mode of persistence. The concept of resilience enabled a management approach to ecosystems that 'would emphasize the need to keep options open, the need to view events in a regional rather than a local context, and the need to emphasize heterogeneity'.[20] Managers had to create multiple strategies for future actions, think 'regionally' which is to say in terms of networks and connections across different territories and times, and emphasize heterogeneity or biodiversity in order to secure more possible routes for adaptation in case of unanticipated shocks. Holling would later label this from of management 'adaptive management', arguing that it necessitated the constant feedback of data to respond to constant changes.[21]

Holling also underscored that the movement from valuing stability to valuing resilience depended upon an epistemological shift: 'Flowing from this would be not the presumption of sufficient knowledge, but the recognition of our ignorance: not the assumption that future events are expected, but that they will be unexpected'.[22] In short, *expect the unexpected*. Plan for extreme events without any conception of absolute prediction.

There are three summary points I want to underscore. The first is that resilience within this genealogy assumed uncertainty and volatility as common, perhaps even 'normal', conditions. Stability and resilience are not correlated. As a corollary, the life and death of individuals or

20 Holling, 'Resilience and Stability of Ecological Systems'.
21 For a summary of strategies in adaptive management see: C.S. Holling (ed), *Adaptive Environmental Assessment and Management*.
22 Holling, 'Resilience and Stability of Ecological Systems'.

even populations became secondary to the ongoing evolution of systems. Second, resilience was a new way to model systems and therefore measure them. Instead of taxonomizing and organizing populations into stable categories, one must define systems in terms of *processes*, and measure the relationships *between* populations and potentially other factors (nitrates, carbon, energy, etc.). A corollary of this new approach is that past data can be used to build concepts but can never actually predict the future. Probabilities *have to* intervene. Finally, ecologists emphasized 'heterogeneity' and diversity as important to facilitating resilience. Systems without a surplus of functions and populations could not adapt. Perfectly optimized systems would collapse when change happened.

Resilience thus possesses some curious features. On one hand, the focus on processes and what are today labelled 'ecosystem services' means that some lives and populations are acceptably sacrificed as long as the system continues to operate; and trauma is a regularized and normalized event. On the other hand, environmental managers recognize that only systems with robust diversity, redundancy, and supplemental capacities might survive abrupt and catastrophic events. Resilience fluctuates between the two poles of Darwinian evolutionary theory—survival of the fittest, and the need for variety and diversity within and between populations to allow for adaptability. Perfect optimization might come at the cost of adaptation.

Resilient Speculation

Markets have also long been modelled on ideas of nature, adaptation, fitness, and evolution. In his 1974 Nobel Memorial Prize in Economic Science speech, the economist Friedrich Hayek disparaged *The Limits of Growth* report as part of a more general plea, addressed to both mainstream economists and their leftist critics, for a more modest epistemology that would give up on the dream of complete control over the future. Hayek noted drily that the recent creation of the Nobel Memorial Prize in Economic Science was itself testimony to the 'propensity [of economists] to imitate as closely as possible the procedures of the brilliantly successful physical sciences', but stressed that, in economics, this often 'led to outright error'. Hayek stressed that economies were *not* equivalent to the isolated systems of physics. This was in part because a social science such as economics focused on the behavior of large populations of different agents, with the result that:

> *like much of biology but unlike most fields of the physical sciences, [economics has] to deal with structures of essential complexity, i.e. with structures whose characteristic properties can be exhibited only by models made up of relatively large numbers of variables. Competition, for instance, is a process which will produce certain results only if it proceeds among a fairly large number of acting persons.*[23]

Rather than pretending to be able to replicate the kinds of discoveries about the natural world available to physicists, economists should instead accept a biology-like world of uncertainty,

23 Friedrich August von Hayek, 'The Pretence of Knowledge', *The Nobel Prize*, Lecture delivered for The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel, 11 December 1974, www.nobelprize.org/prizes/economic-sciences/1974/hayek/lecture/.

chance, and large populations of different individuals. This would in turn mean relinquishing the goal of *planning* and turning instead to the more modest goal of *managing*. For Hayek, societies emerge from decentralized networks of information coordinated through markets, which meant that seeking to plan or regulate the economy—by, for example, limiting or eliminating growth—could only end in disaster.

Hayek suggested that mainstream economists, by seeking to emulate the physical sciences, had in fact given encouragement to precisely that fantasy of control that he saw as central to *The Limits of Growth*. He suggested that:

> *It is often difficult enough for the expert, and certainly in many instances impossible for the layman, to distinguish between legitimate and illegitimate claims advanced in the name of science. The enormous publicity recently given by the media to a report pronouncing in the name of science on The Limits to Growth, and the silence of the same media about the devastating criticism this report has received from the competent experts, must make one feel somewhat apprehensive about the use to which the prestige of science can be put. But it is by no means only in the field of economics that far-reaching claims are made on behalf of a more scientific direction of all human activities and the desirability of replacing spontaneous processes by "conscious human control."*[24]

For Hayek, systems self-organize from the 'free efforts of millions of individuals', and not the conscious decision-making power of the few. As a consequence, control—understood as the prediction of future events, whether by mainstream economists or the Club of Rome—was impossible. For Hayek, though, this was not cause for despair. Rather, it was grounds for hope, provided that those populations of millions were allowed to engage new and unanticipated problems flexibly by means of unrestricted market activity. Hayek's speech reflects the epistemic 'modesty' or ignorance that resilience managers also espoused. Uncertainty was the only certainty in this worldview.

This reminds us of Friedman's observations at the start of this essay. Though Friedman was one of those economists chastised by Hayek in his lecture as overly committed to 'scientific' models of economics, Friedman's proposal for a resilient futures markets nevertheless exemplified Hayek's image of markets that flexibly managed, rather than rigidly controlled or planned, an always uncertain future. These conceptions of not only managing, but actually arbitraging uncertainty would find actualization in technology. While risk has always perhaps been necessary for profit, never before had it been so clearly demarcated as a site of technological innovation and intervention.

Hayek's lecture focused primarily on the rather abstract realm of epistemology, and provided relatively little guidance as to what this approach might look like in practice. However, in the 1970s, several economists and ecologists turned to concepts of flexibility and 'resilience' to explain how the epistemological modesty valorized by Hayek could generate

24 Hayek, 'The Pretence of Knowledge'.

solutions to specific new and unanticipated problems while at the same time avoiding system collapse.

At the center of these approaches was the introduction of algorithmic trading and derivative instruments to the market. Such technologies might permit the 'hedging' of risks that were increasingly difficult to calculate with certainty, while also permitting management of volatile currency changes resulting from the end of Bretton Woods and geo-political conflicts impacting energy and commodity markets. The computer scientist turned financial guru, Fischer Black, one of the creators of the automated derivatives market, wrote an important essay on noise that summarizes this new resilient view of market technologies. At the center of his new vision of options markets and futures was the idea of entropy and noise borrowed from cybernetics:[25]

> *The effects of noise on the world, and on our views of the world, are profound. Noise in the sense of a large number of small events is often a causal factor much more powerful than a small number of large events can be. Noise makes trading in financial markets possible, and thus allows us to observe prices for financial assets.*[26]

Fischer Black's famous article 'Noise Trading' formalized a new discourse in finance and posited that we trade and profit from misinformation and information overload. In this new embrace of automated financial trading, what no longer existed was the problem of equilibrium or a concern for entropic disorganization. If 19th and earlier 20th century economists, even Hayek, worried about the maintenance of the market itself, and of the stability of value, i.e. about entropy and the tendency of systems (whether political or economic) to degrade, now that concern had been deferred, and even capitalized upon. Noise in communication theory is directly correlated with increases in entropy. Options trading makes volatility and speculation—an excess of information in the market—a site of extracting value. Arbitrage.[27]

The significance of this turn towards embracing entropy and noise as a site of value cannot be overstated. Black embraced the concept, central to resilience, that markets are always unstable and volatile. Moreover, he recognized that, as a result of this seemingly natural condition, full prediction is impossible, and therefore new technologies of preemption are necessary. Hedge funds, and their central technology of derivative pricing, thereby became key vehicles to monetize this uncertainty and manage the operations of the market while enduring constant evolutionary stresses.

The question ecologists and economists turned to asking, then, was: if prediction of the future was impossible, how were the models of ecology failing? More importantly, how can these seemingly un-anticipatable events be dealt with? How does one manage for radical uncer-

25 Fischer Black studied at MIT and finished a degree at Harvard, initially under the guidance of Marvin Minsky, and read cybernetic texts by Norbert Wiener throughout his high school and early college education. See Perry Mehrling, *Fischer Black and the Revolutionary Idea of Finance*, New York: John Wiley and Sons, 2005, p. 30.

26 Fischer Black, 'Noise', *The Journal of Finance* 41.3 (1986): 529.

27 Mehrling, *Fischer Black and the Revolutionary Idea of Finance*.

tainty and change? The response was to create a new class of technologies including adaptive management techniques, increasingly data driven and automated management of supply chains, and computerized systems for logistics, to regularly command and manage this future without ever having to predict it. These instruments were the automated analogues to resilient management strategies that reflected similar attitudes to uncertainty and the management of systems in both economy and ecology.

It is very important to note that financial instruments like derivatives are the computational mirrors to the general transformation at the time in logistics. As scholars have noted, in the 1960s falling corporate profit rates and the rise of total cost analysis increased focus on distribution decisions and supply chain management as sites of value production to offset falling returns. Business management became increasingly professionalized. The MBA degree and the computer simultaneously arose, and managers could now handle processes previously viewed as separate—purchasing, manufacturing, transportation, warehousing, returns, and so forth—as part of one system. These management techniques borrowed from the same systems and cybernetic sciences underpinning ecology and finance.[28]

These models offered a concept of systems as capable of purposeful evolution without direction, and created a language by which to imagine systems whose capacity for change and adaptation would come through internal mechanisms of feedback and reflexivity rather than political oversight and the state.[29] It is no accident, of course, that the concept of eternally evolving and unpredictable, and therefore unplannable, systems emerged directly as a response to both demands for civil rights by disenfranchised and racialized groups and global decolonization. Derivative pricing markets naturalized and automated crisis while assuming that planning was counter-evolutionary and forestalled adaptation, and by extension, survival.

In fact, both the transformation in logistics and management and financialization were co-produced to manage geo-political crisis. The Black-Scholes and other financial instruments emerged from the end of Bretton Woods and monetization, and became central techniques for managing events such as the OPEC oil crisis, along with other decolonial events that resulted in commodity price fluctuation that demanded new ways of distributing risk globally. While the space to elaborate here is not possible, the key take away, is that resilience was co-produced with financial and logistic risk management technologies in the 1970's and 1980's, within a particular context of global transformations in political-economy, race relations, and governmental orders.[30]

28 Charmaine Chua et al., 'Introduction: Turbulent Circulation: Building a Critical Engagement with Logistics', *Environment and Planning D: Society and Space* 36.4 (2018): 617-629.

29 Paul Lewis, 'The Emergence of "Emergence" in the Work of F.A. Hayek: A Historical Analysis', *History of Political Economy* 48.1 (2016): 111-150.

30 Ryan C. Smith, *The Real Oil Shock: How Oil Transformed Money, Debt, and Finance*, Cham: Palgrave Macmillan, 2022, pp. 73-76.

Conclusion

By the early 2000s following 9/11, the 2008 financial crisis, and climate change, resilience has taken a central discursive place in fields ranging from business management and logistics to psychology. 'Adaptive management', 'business continuity management', and 'climate resiliency planning' and many related terms are all the direct outgrowths from ecological resilience and largely shape our understanding of how changing climactic and security conditions are to be dealt with.

A search online for resilience in the aftermath of COVID-19, and in the wake of the war in the Ukraine, reveals a massive number of articles, websites, and consulting services dedicated to logistics, psychology, and community activism. For managers of supply chains and corporations such as SAP and IBM, resilience is what corporations must do to ensure business continuity. 'Just in case' has become the new mantra, and corporations are urged to increase their options, to diversify supply chains geographically, and begin thinking about plasticity in manufacturing infrastructure (being able to make alternative products), and to identify vital services and processes ahead of time. For many neo-liberal and right-leaning politicians, resilience is a call to expend populations they do not value—the elderly, people with underlying health conditions, people of color—through the ongoing annihilation of environmental protections, civil rights, and social benefits in the name of saving the economy. Resilience thus becomes a mode of naturalizing violence for the Right.

Here we must contend with how we understand evolution and genealogy. Financial and logistical comprehensions of resilience largely assume a world of scenario plans and un-anticipatable futures divorced from historical legacy or context. Resilience suggests that the contemporary derivatives economy is one of infinite calculation without termination. There is no final prediction, just constant adjustments, grounded in the calculation of differences. The racism and injustice of such an economy, we might extrapolate, emerges from the fact that, as technologies, derivatives but also data driven supply chains consume differences, whether via correlations between the value of homes in different places, the comparative poverty or wealth of different populations, the differing cost of labor in different locales, the differentials in resource landscapes, or differences in the speed by which between investors can buy and sell options. These differentials become the site of a new form of automated and algorithmic speculation. Betting on differences in this way has the effect of making the future homogenous with the present, as it perpetuates contemporary class, racial, and sexual inequities.

More critically, resilience re-invents or returns biological and survivalist discourses. The focus increasingly is about management of populations. Populations as a resource for machine learning, AI, and smartification, but also sometimes, as a return to older ideals of nation and race, as embodied in the alt-right, and in contemporary re-bordering, immigration policy, and re-nationalization of resources and production.

But there are other options. In turn, some activist movements are also turning to finance as the centerpiece of environmental activism. Greenpeace has recently refocused its efforts on financial entities, targeting groups such as BlackRock (the largest investment manager in the

world) and the financial systems behind oil pipelines, by shifting protests to the headquarters of the financial firm, rather than focusing efforts solely at the pipeline.[31] While in retrospect this may seem like common sense, in fact, until recently, the financialization of the energy sector was not a focus of activism in the way that the actual corporate perpetrators of environmental damage were.

Similar evidence can be found in bond markets, where financial instruments can serve as sources of political action. For example, developing climate preparedness mechanisms for large American cities is very expensive. While finance is usually depicted in urban history as an attempt by neoliberalism to bankrupt the public, numerous recent examples suggest other possibilities. In Houston's reconstruction after Hurricane Harvey, for example, a unique bill structuring the bond instruments was passed in 2018. This plan used the money from bonds to assist poor and minority neighborhoods that were at highest risk for flooding. The bond was structured so that different forms of risk were assessed differently, rather than merely evaluating risk through property value and property loss, which would have benefited rich neighborhoods. While there are many ongoing battles, its success is not yet clear, and Federal funding was slowed under President Donald Trump, the bond structure and financing became a site of political action.[32] Such efforts demonstrate that new models of what is urban and what is natural extend the terrain of action. No longer only focused on hard infrastructure such as roads or sea walls, increasingly urban activists understand many 'soft infrastructures' such as wetlands as part of climate defense. Environmental justice (as in the case of Houston) becomes integral to understanding what makes a city resilient.

Resilience, therefore, despite all odds and the intellectual genealogy outlined above, might have positive connotations, or faint messianic capacities to invoke Walter Benjamin. Resilience can be a discourse recognizing the historical situatedness of our ecological relations to others, the necessity for diversity, and the possibility that the future of a system will never be its past. Resilience, we might recall from ecology, demands change and diversity.

We must begin to understand resilience for its historically situated reworking of the relationship between nature, ecology, and economy. Such historical consciousness might facilitate different forms of imagining future institutions, economies, and environments? The future does not need to replicate the past. Resilience can be a call for multiplicity, and for futures not yet known, it could yet offer a model of ecological thinking that might defeat the optimizing demands of capital or conservatism. It might offer the possibility of not a new normal but a new nature. If resilience has replaced convenience as an imaginary, our project is to imagine the lives, social structures, and infrastructures that accompany or contest this new logic.

31 Greenpeace, *It's the Finance Sector, Stupid*, 21 December 2020, https://media.greenpeace.org/Detail/27MZIFJ8ZCWOC.

32 Catrin Einhorn and Christopher Flavelle, 'A Race against Time to Rescue a Reef from Climate Change', *The New York Times*, 10 December 2020, https://www.nytimes.com/2020/12/05/climate/Mexico-reef-climate-change.html; Stephen J. Collier, James Christopher Mizes, and Antina von Scnitzler, 'Preface: Public Infrastructures / Infrastructural Publics', *Limn* 7 (2016), https://limn.it/issues/public-infrastructuresinfrastructural-publics/.

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COLLECTIVIZING CONVENIENCE? FROM DELIVERY TO LOGISTICALITY

ARMIN BEVERUNGEN

Introduction

Amazon's convenience enchants. In 2019, 68% of US Americans were already Amazon Prime members. For Germany, Amazon's second largest market, that figure was 63%.[1] In these countries and many others, as Amazon expands globally and intensifies its grip on delivery and inroads into streaming, figures have risen and are expected to rise further. Amazon Prime provides the convenience of streaming media content and of home delivery of items from its web shop. Amazon has branded convenience, as Emily West suggests, with customers affectively and intimately enchanted by its brown boxes that seemingly magically appear at our doorsteps.[2] Convenience is thus key to understanding Amazon, and an account of convenience today requires making sense of how Amazon has shaped it.

At the same time, a significant part of scholars concerned with socialist or democratic planning are in thrall of Amazon and its promise of luxury and plenty. Framing Amazon alongside other companies such as Walmart as a 'master planner', which through its 'logistical and algorithmic innovations' provides the kinds of convenience desired by its customers, Leigh Phillips and Michal Rozworski suggest that 'Amazon offers techniques of production and distribution that are just waiting to be seized and repurposed'.[3] In putting this concern for the appropriation of Amazon's logistical prowess in the context of a debate on convenience, this contribution asks a simple question: can Amazon's convenience be collectivized? By characterizing Amazon's convenience as logistical, as *convenience delivered*, the contribution points to the entanglement between logistics, planning and convenience at Amazon. Where critical commentary has established the costs of convenience in terms of labor exploitation and consumer surveillance, the contribution contends that Amazon's convenience furthermore implies a logistification of life, which largely evacuates collectivity.

1 L. Lohmeier, 'Umfrage zur Amazon Prime - Mitgliedschaft in den USA 2019', *Statista*, 2 January 2024, https://de.statista.com/statistik/daten/studie/1029566/umfrage/amazon-prime-mitgliedschaft-in-den-usa/; L. Lohmeier, 'Amazon Prime - Mitgliedschaft in Deutschland 2019', *Statista*, 2 January 2024, https://de.statista.com/statistik/daten/studie/1029563/umfrage/amazon-prime-mitgliedschaft-in-deutschland/.

2 Emily West, *Buy Now: How Amazon Branded Convenience and Normalized Monopoly*. Distribution Matters. Cambridge, MA: The MIT Press, 2022.

3 Leigh Phillips and Michal Rozworski, *The People's Republic of Walmart: How the World's Biggest Corporations Are Laying the Foundation for Socialism*, London: Verso, 2019, p. 77. Amazon is, besides Walmart and Project Cybersyn, perhaps the most important point of reference for recent debates around democratic planning and socialist calculation, also e.g. in Evgeny Morozov, 'Digital Socialism?', *New Left Review* 116/117 (2019): 33-67.

The contribution subsequently challenges celebrations of Amazon's logistical convenience, and suggests that a potential collectivization of convenience demands a more specific reckoning with convenience delivered. If Amazon's convenience is logistics in disguise, and if the techniques and operations of Amazon's logistics are fundamentally counter-collective, then Amazon's convenience cannot simply be collectivized. Instead, it must be confronted with logisticality, that is, the collective capacity to organize life without logistical planning. Logisticality defies logistical convenience, and may bring forth a different kind of convenience.

Logistical Convenience, Convenience Delivered

How Amazon redefines convenience can be situated in a long history of technologies promising convenience. Thomas F. Tierney traces the emergence of a modern notion of convenience to the 17th century, where convenience is 'is no longer a matter of the suitability of something to the facts, nature, or a moral code' but instead necessarily refers to a person's body, so that something is considered convenient 'in the modern sense of these words if it is suitable to personal comfort or ease'.[4] This coincides, according to Tierney, with a changed understanding of the body as imposing limits, and modern technology offering to overcome these: 'something is a convenience if it is suitable to the modern task of overcoming the limits which are imposed by the body'.[5] This value of convenience—'the value of the masses [. . .] who consume the products of technical culture'—comes to dominate technological development, according to Tierney.[6] Tierney's subsequently rather static notion of convenience lends itself to a quite determinist history of technology. In contrast, recognizing the plasticity and historicity of the notion of convenience puts into focus how convenience develops alongside technologies and their associated socialites and cultures.

How convenience changes in the 20th century has been shown by Elizabeth Shove in her account of consumption cultures, highlighting in particular 'illuminating developments in the sociotemporal order'.[7] Where previously 'conveniences' were situated somewhere between necessity and luxury, at the end of the 20th century 'hypermodern' conveniences such as 'microwave cookers, freezers, answerphones and text messaging facilities' promise the ability to affect timing: 'that is, the ability to shift and juggle obligations and to construct and determine personal schedules'.[8] A broad understanding of convenience as overcoming bodily limits here gives way to a socially and culturally coded capacity to order life temporally and spatially. The provision of this capacity is unevenly distributed and highly gendered and racialized, since many of the conveniences in question center around the household and therefore feminized and racialized labor, with convenience also always involving a reorganization of such labor.[9]

4 Thomas F. Tierney, *The Value of Convenience: A Genealogy of Technical Culture*, Albany: State University of New York Press, 1993, pp. 39, 91-93. See also: Rahul Oka, 'Introducing an Anthropology of Convenience', *Economic Anthropology* 8.2 (2021): 188-207.

5 Tierney, *The Value of Convenience*, p. 40.

6 Tierney, *The Value of Convenience*, p. 8.

7 Elizabeth Shove, *Comfort, Cleanliness and Convenience: The Social Organization of Normality*, Oxford: Berg, 2003, p. 185.

8 Shove, *Comfort, Cleanliness and Convenience*, p. 186.

9 See, for example, Neda Atanasoski and Kalindi Vora, *Surrogate Humanity: Race, Robots, and the Politics*

At least since the middle of the 20th century, convenience has also become an explicit subject of marketing, and therefore shaped by the ways in which organizations seek to construct, promote and sell it, particular in relation to an emerging service sector.[10] That is not to suggest that convenience can be reduced to an attribute of a product or service, but to trace how its social and cultural dominance has been formed also by practices of marketing.[11] Amazon perhaps stands at the pinnacle of this development in marketing convenience: as West convincingly portrays, Amazon has branded convenience. Amazon offers a wide set of convenient services, such as media streaming and Alexa as personal assistant, which overall revolve around Amazon's image as a distribution brand which delivers convenience. As West puts it: 'The box encapsulates Amazon's brand promise to deliver smiles to our doorsteps – something the company rarely says with words, but communicates on every branded box and envelope'.[12] The 'everything store' literally promises—with its swoosh from A to Z—to make anything available for fast delivery.

Amazon is inscribed in broader shifts in convenience, which impact the spatio-temporal orderings explored by Shove. The juxtaposition with debates about convenient devices for the home, the convenience store or convenience food of the late 20th century makes clear what kinds of shifts have taken place in the meaning of convenience. Convenience stores respond to time-sensitivities of customer by providing easy ways to shop while on the road,[13] and convenience food both offers a reduction in the labour involved in its preparation and what Alan Warde calls 'time-shifting', in this case the ability to quickly and spontaneously prepare a meal.[14] Amazon is also in the business of convenience stores, providing a supposedly new level of convenience in enabling customers to skip queues at checkouts through its just-walk-out technology deployed in its Amazon Go stores, in North America and the UK.[15] And through Amazon Fresh and its takeover of Whole Foods in the USA, Amazon is also in the business of convenience food. However, Amazon's convenience pivots around delivery, and epitomizes the shift from retail to delivery in recent decades.

Focusing on convenience as convenience delivered, as well as on its concomitant spatio-temporal orderings, manifests its logistical character. It also indexes Amazon as a key player in logistics: according to Clare Lyster, Amazon represents 'the epitome of contemporary logistical intelligence'.[16] Last mile delivery is key to Amazon's promise and branding of convenience, since it is the brown box arriving on our doorsteps which fulfils this promise. In this, Amazon partakes in broader shifts towards 'logistical urbanism', wherein developments particularly

of Technological Futures, Durham: Duke University Press, 2019; Sarah Sharma, *In the Meantime: Temporality and Cultural Politics*, Durham: Duke University Press, 2014.

10 Jillian Dawes Farquhar and Jennifer Rowley, 'Convenience: A Services Perspective', *Marketing Theory* 9.4 (2009): 425-438.

11 Oka, 'Introducing an Anthropology of Convenience', 204.

12 West, *Buy Now,* p. 66.

13 Steven M. Graves, 'Convenience Stores: A Landscape Perspective', *Yearbook of the Association of Pacific Coast Geographers* 79.1 (2017): 134-152.

14 Alan Warde, 'Convenience Food: Space and Timing', *British Food Journal* 101.7 (1999): 518.

15 Jenny Huberman, 'Amazon Go, Surveillance Capitalism, and the Ideology of Convenience', *Economic Anthropology* 8.2 (2021): 337-49.

16 Clare Lyster, *Learning from Logistics: How Networks Change Our Cities*, Basel: Birkhäuser, 2016, p. 119.

in last-mile logistics have shifted the terrain of how the temporalities and spatialities of cities are reproduced and repurposed around delivery.[17] It is not that convenience stores or convenience foods weren't logistical achievements—they merely followed a different logic oriented around the visit to the store rather than towards delivery.[18] Where a general focus on logistics makes cities appear in many ways always already ordered through the flows of communication and commerce, bringing forth their own topologies,[19] a specific focus on Amazon's logistics highlights how it produces particular notions of convenience and coincident spatio-temporal orderings.

Of note in particular is how Amazon has over the last years extensively developed not only its network of fulfillment centers, but also its capacities for last mile delivery, principally in North America and Europe, but also elsewhere such as the UAE.[20] This has allowed it to continuously improve on the speed and flexibility of last-mile delivery, moving from two-day to next-day to same-day delivery for popular items and customers in select urban areas mostly in the Global North, and even two-hour delivery for food in particular vicinities of Amazon Fresh stores in the USA. The urban landscape of fast delivery is crowded with other providers, such as DoorDash or UberEats for delivery of fresh meals, or Getyr, Zepto or Ola for 10-minute delivery of a limited basket of everyday goods. However, what qualifies Amazon's convenience is that Amazon's everything store offers a much wider range of goods than 10-minute-delivery companies, and its development of last-mile delivery infrastructure is matched only by postal services in its depth within individual countries. Its delivery is also thoroughly integrated with a broader technological stack, such as its '1-click-technology', easy payment facilities, or the voice assistant Alexa, framed as the easiest gateway to ordering.[21]

In sum, Amazon's convenience combines the breadth of products on offer in the everything store, ease of ordering and payment through specific technologies provided by or allowing access to Amazon's store, and speed of delivery to one's home. Variations and extensions of these elements are part of Amazon's promise of convenience, for example when it expands into retail or allows other providers to adapt its technologies—such as Amazon Pay or Amazon One for checkout with one's palm. Yet the key premise remains that customers are invited to stay at home, and to have goods delivered to their doorstep. The 'Amazonification' of logistics, building on earlier logistical imaginations like those associated with the Sears mail order catalogue,[22] can be understood as concerned with the consumer home as the end-point of logistics and the effort to dominate last touch logistics.[23] Amazon's convenience is logistical convenience, *convenience delivered*.

17 Moritz Altenried, 'On the Last Mile: Logistical Urbanism and the Transformation of Labour', *Work Organisation, Labour & Globalisation* 13.1 (2019): 114-29.

18 See Joshua Neves and Marc Steinberg, 'In Convenience', this volume, for a useful discussion of the relation between the logistics of convenience stores and of platform capitalism today.

19 Lyster, *Learning from Logistics*.

20 Martin Kenney, Dafna Bearson, and John Zysman, 'The Platform Economy Matures: Measuring Pervasiveness and Exploring Power', *Socio-Economic Review* 19.4 (October 2021): 1467; Altenried, 'On the Last Mile', 124.

21 West, *Buy Now*, pp. 45-46.

22 Matthew Hockenberry, Nicole Starosielski, and Susan Zieger (eds) *Assembly Codes: The Logistics of Media*, Durham, NC: Duke University Press, 2021, p. 7.

23 Jake Alimahomed-Wilson, 'The Amazonification of Logistics: E-Commerce, Labor, and Exploitation in

Inconveniences of Logistical Life

A concern with the collectivization of convenience builds on the malleability of technology, and therefore the possibility of appropriating the technologies at work in Amazon's logistical operations. It articulates a critique of how technology operates within Amazon today, yet presumes that this technology can operate differently in the context of socialist or democratic economic planning. For example, Srnicek and Williams argue that logistics will be essential for postcapitalism, that despite its association with the exploitation of labour, logistics is at the forefront of automation and struggles towards postwork.[24] These debates much less challenge Amazon's notion of convenience, which promises something close to an imaginary of luxury, of a kind of plenty or post-scarcity associated with the 'everything store' that makes goods available at home the next day; a resilient convenience that even promises to deliver when disaster looms, as Amazon did during the COVID-19 pandemic.[25] The 'actually existing automation' at Amazon also serves as forerunner to post-scarcity in labour, which is a key element of visions of 'fully automated luxury communism'.[26]

Celebrations of Amazon's logistical operations to be repurposed for mostly centralized planning presume that the convenience of logistics can be disentangled from its inconveniences. Phillips and Rozworski, for example, note that, alongside Walmart, Amazon's story 'is another tale of getting the logistics right—in other words, getting things from point A to point B as cheaply as possible'.[27]

> *In simplest terms, Amazon is a giant planned machine for distributing goods. It is a mechanism for forecasting, managing and meeting demand for an incredibly wide array of things we need and want. It is a collection of thousands of interlocking optimization systems that work together to carry out the deceptively simple task of moving objects from producers to consumers.*[28]

The authors qualify this adoration, noting how its planning technologies 'are a way of meeting a skewed set of social needs—one that ends up enriching a few, misusing substantial free social labor, and degrading workers'.[29] They also list some challenges in appropriating and collectivizing Amazon, in particular with regards to large-scale techni-

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the Last Mile', in Jake Alimahomed-Wilson and Ellen Reese (eds) *The Cost of Free Shipping: Amazon in the Global Economy*, London: Pluto Press, 2021, pp. 69-70.

24 Nick Srnicek and Alex Williams, *Inventing the Future: Postcapitalism and a World without Work*, Revised and updated edition, London: Verso, 2016, pp. 150-154.

25 Dave Lee and Patricia Nilsson, 'Amazon Auditions to Be "the New Red Cross" in Covid-19 Crisis', *Financial Times*, 31 March 2020, https://www.ft.com/content/220bf850-726c-11ea-ad98-044200cb277f. Amazon has also recently opened disaster relief hubs at various fulfilment centers in North America and Europe. On the relationship between convenience and resilience, see Orit Halpern's contribution in this volume.

26 Aaron Bastani, *Fully Automated Luxury Communism: A Manifesto*, London: Verso, 2019, p. 88.

27 Phillips and Rozworski, *People's Republic of Walmart*, pp. 78, 80.

28 Phillips and Rozworski, *People's Republic of Walmart*, p. 92.

29 Phillips and Rozworski, *People's Republic of Walmart*, p. 93.

cal feasibility, its continuing reliance on the price mechanism of markets, and the dangers of surveillance.[30]

Yet their basic utopian premise is that some of these negative aspects of Amazon's logistical operations can be disentangled from the planning techniques to be appropriated and collectivized for centralized, democratic planning.[31] In contrast, focusing on the specificities of Amazon's logistical convenience as convenience delivered emphasizes how closely related it is to the inconveniences of Amazon's logistical operations, and how impossible it may be to recode technologies when they are precisely geared towards logistically managing workers and consumers. It suggests that Amazon's innovations may be found less in advanced planning techniques as in particular forms of automation which tie both workers and consumers to specific spatio-temporal regimes of control and speed, which exhibit what Neves and Steinberg characterize as the compulsory aspects of convenience.

The inconvenience of logistical labor at Amazon and elsewhere have been widely documented.[32] Fulfilment centers are spaces carefully designed and technologically equipped to organize logistical labor whose discrete grammars of action are meticulously captured.[33] Alessandro Delfanti describes the kinds of technologically enhanced forms of management in Amazon's fulfilment centres as 'machinic dispossession', wherein techniques of 'chaotic storage' deprive labour of the knowledge of the whereabouts of things in the warehouse, and 'augmented despotism', where machinic control is complemented with autocratic cultural-managerial techniques.[34] Beyond the warehouse, in the last-mile labor organized through the Amazon Flex app, a highly flexible and scalable workforce is algorithmically managed and directed.[35] Labor here is thoroughly coded and grammatized in logistical terms. For example, Matthew Hockenberry explores the role of the cell phone in constructing what he terms 'cellular labor': cellularity 'enables not just a multiplicity of mobility but a multiplication of management'.[36] As logistical media technologies, the cell phone and the Flex app allow cellular labor to be geolocated and directed, and they also allow the scanning of barcodes as the quintessential operation of tracking both logistical goods and the operations of logistical labor.

30 Phillips and Rozworski, *People's Republic of Walmart*, pp. 93-95.

31 Current planning debates extend beyond rejuvenated proposals for centrally planned economies since William Paul Cockshott and Allin Cottrell, *Towards a New Socialism*, Nottingham: Spokesman, 1993. For an overview, see Christoph Sorg and Jan Groos (eds) *Competition and Change*: special issue on 'Rethinking Economic Planning' (2024, forthcoming); and Campbell Jones, 'Introduction: The Return of Economic Planning', *South Atlantic Quarterly* 119.1 (2020): 1-10.

32 Jake Alimahomed-Wilson and Ellen Reese (eds), *The Cost of Free Shipping: Amazon in the Global Economy*, London: Pluto Press, 2021; Alessandro Delfanti, *The Warehouse: Workers and Robots at Amazon*, London: Pluto Press, 2021.

33 Armin Beverungen, 'The Invisualities of Capture in Amazon's Logistical Operations', *Digital Culture & Society* 7.2 (2022): 185-202.

34 Alessandro Delfanti, 'Machinic Dispossession and Augmented Despotism: Digital Work in an Amazon Warehouse', *New Media & Society* 23.1 (2021): 39-55.

35 Altenried, 'On the Last Mile', 123-126.

36 Matthew Hockenberry, 'Cellular Capitalism: Life and Labor at the End of the Digital Supply Chain', in Mark Graham and Fabian Ferrari (eds) *Digital Work in the Planetary Market*, Cambridge, MA: The MIT Press, 2022, p. 265.

The inconveniences of consumption at Amazon are usually discussed in terms of surveillance and capture. Jennifer Huberman, considering the case of Amazon Go stores, argues that convenience functions as an ideology justifying extraction and control in the register of surveillance capitalism.[37] Yet rather than obscure it, Amazon provides surveillance as a service: its attraction lies in 'the brand's knowledge of the consumers' and therefore 'the intimacy of the relationship and the quality of its services'.[38] This observation already points to how surveillance is more than an ideology at Amazon: the data gathered on consumer behavior constitutes an essential input for Amazon's predictive algorithms, which tie its technologies for anticipatory shipping to the optimization of its logistical operations.[39] Despite being sold explicitly as a service, Amazon's technologies of surveillance seek 'to capture forms of behavior that are unaffected by self-conscious awareness of surveillance',[40] with the Echo and Ring devices enticing us to unconscious consumption, in a process that David Hill calls 'the disappearing from consciousness of "habitual media"'.[41]

The automation of behaviour and the attendant reduction of liberties are recurring themes in these critiques of Amazon, whether in the register of a critique of alienation, of ideology, or otherwise. These critiques, essential as they are, do not suffice to direct a collectivization of convenience which requires the disentangling of logistical planning from surveillance and control. On the one hand, operating in what Jean Burgess and her co-authors have called 'big critique', they partly overstate the efficacy of Amazon's technologies, for example with regards to the automation of behaviour through an address of the unconscious.[42] In doing so, they potentially reproduce a technological sublime which also misleadingly fuels the infatuation with Amazon's planning techniques. On the other hand, the critiques don't fully articulate the consequences of convenience in terms of collectivity. West, Huberman, and more famously Shoshana Zuboff, lament the loss of the sovereign subject of consumption in the surveilled, served self of convenience.[43] Their analysis implies a politics which seeks a return to the sovereign subject of consumption. Yet as a political horizon for a collectivization of convenience this seems insufficient, considering the marketing of convenience is certainly not the starting point of an under-

37 Huberman, 'Amazon Go, Surveillance Capitalism, and the Ideology of Convenience', 338, 346. The media scholar Lauren Bridges in a complementary way recounts how Amazon Ring devices, through what she calls 'infrastructural obfuscation', partakes in broader kinds of surveillance, where Amazon's infrastructures of surveillance connect to carceral regimes. Lauren Bridges, 'Infrastructural Obfuscation: Unpacking the Carceral Logics of the Ring Surveillant Assemblage', *Information, Communication & Society* 24.6 (2021): 830-49.

38 West, *Buy Now*, p. 118.

39 Eva-Maria Nyckel, 'Ahead of Time: The Infrastructure of Amazon's Anticipatory Shipping Method', in Axel Volmar and Kyle Stine (eds) *Media Infrastructures and the Politics of Digital Time: Essays on Hardwired Temporalities*, Amsterdam: Amsterdam University Press, 2021, pp. 263-78.

40 Mark Andrejevic, *Automated Media*, New York: Routledge, 2020, p. 40.

41 David W. Hill, 'The Injuries of Platform Logistics', *Media, Culture & Society* 42.4 (2020): 524-525.

42 Jean Burgess, 'Everyday Data Cultures: Beyond Big Critique and the Technological Sublime', *AI & Society* 38.3 (2023): 1243-1244.

43 Huberman, 'Amazon Go, Surveillance Capitalism, and the Ideology of Convenience'; West, *Buy Now*, p. 133-137; Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*, 1st edition, New York: PublicAffairs, 2019.

mining of individual sovereignty, not to mention collectivity. The history of marketing, not only of convenience, is one traversed by attempts to undermine the sovereign subject.[44]

These inconveniences are not merely a negative flipside of convenience, to be separated from it or easily critiqued away. More fundamentally, they demonstrate how logistical convenience, as convenience delivered, imposes what I would call the logistification of life. Convenience as logistics in disguise requires the logistification of life, producing what Julian Reid has called 'logistical life': 'a life lived under the duress of the command to be efficient, to communicate one's purposes transparently in relation to others, to be positioned where one is required, to use time economically, to be able to move when and where one is told to'.[45] Here the inconveniences of labour and consumption become visible as related. For example, in having to make oneself available for the blocks of delivery offered by Amazon Flex or the changes in shift work in the fulfilment center, the logistification of labor extends to life. And Amazon's logistical convenience invites a personal logistics as much as the calculation of desires to be fulfilled becomes an essential part of planning and prediction.

The compulsory aspects of convenience that Neves and Steinberg describe are a key aspect of this logistification, here in the form of logistical convenience, convenience delivered. The compulsory aspects of logistical convenience become apparent, for example, in the 'personal logistics' described by Melissa Gregg as imposing 'the labor of synchronizing schedules and commitments' onto everyone, also with regards to the power differential between those who schedule and those who are scheduled.[46] They can also can be recognized in what Stefano Harney and Fred Moten call 'synaptic labor', which logistics demands and which they characterize as a 'capacity for composition given in having been entered, as it were, into the flow of assembly upon command': 'Synaptic labor plugs in anywhere, translates anything, and one must devise one's own forms of "queue theory" for the flow of lines that run in every direction, like a sea'.[47] These demands to be available for synchronization and for composition, essential for logistics, extend from the logistical labor of the warehouse and delivery to the consumer and citizen in their organization of daily, logistified life.

I want to suggest that the debates around economic planning and the collectivization of convenience would benefit from understanding Amazon's logistical convenience in terms of the

44 The economic historian Philip Mirowski has called 'murketing' those practices which play on both a promise of sovereignty while at the same time undermining it, producing a murky space of decision and choice. Philip Mirowski, *Never Let a Serious Crisis Go to Waste: How Neoliberalism Survived the Financial Meltdown*, London: Verso, 2013, pp. 138-148; also see Stephen Dunne, ''Murketing' and the Rhetoric of the New Sincerity', *Journal of Marketing Management* 34.15-16 (2018): 1296-1318.

45 Julian Reid, *The Biopolitics of the War on Terror: Life Struggles, Liberal Modernity, and the Defence of Logistical Societies*, Manchester: Manchester University Press, 2006, p. 17. The quote continues: 'and crucially, to be able to extol these capacities as the values which one would willingly, if called upon, kill and die for'. To assess Reid's analysis of logistics in the context of a biopolitics of war would here sidestep the more immediate task of asking how Amazon contributes to the logistification of life.

46 Melissa Gregg, *Counterproductive: Time Management in the Knowledge Economy*, Durham, NC: Duke University Press, 2018, pp. 129-130.

47 Stefano Harney and Fred Moten, *All Incomplete*. Wivenhoe New York Port Watson: Minor Compositions, 2021, p. 109.

logistification of life. The term highlights how closely Amazon's planning techniques are necessarily tied to automation, surveillance and capture as essential elements of its logistical operations; how the inconveniences of labor and consumption must not be tackled separately but rather be understood in the context of how logistical convenience structures life; and how this logistification is marked by an evacuation of collectivity. It complements interventions such as those by Brett Neilson who warns against a mere reverse engineering, and instead calls for a 'reverse of engineering', which formulates a critique of predictive techniques as extractivist and reliant on 'merely evidential and measurable' data, and instead wants to articulate planning with effective modes of political organization.[48] It also complements interventions such as Max Grünberg's, which challenges Amazon's characterization of its predictive analytics and machine learning capabilities as 'the state of the art in capitalist demand-forecasting' by exploring demand-forecasting not as a technique to be appropriated, but instead one which involves the modulation of behavior and the logistification of life.[49]

Logistification as Collectivity Evacuated

The task of collectivizing convenience already seems formidable, considering how Amazon's convenience relies on the logistification of life. Amazon's logistical convenience also implies a fundamental evacuation of collectivity, which would need to be recuperated in democratic planning, if planning is not to mean the neutralization of the political.[50] First and foremost, the experience of labor at Amazon is highly individualized, as Amazon deploys standard managerial techniques derived from Taylorism, cybernetics and behavioral economics which are geared towards the individual worker, and ties these to algorithmic forms of management where workers mostly interact with algorithms measuring individual performance.[51] Amazon is also notorious for union busting; recent successes in unionization, such as the establishment of the Amazon Labor Union or increasing strike activities in various countries in Europe such as Italy, the UK and Germany, point to the discrepancy between the requirements of Amazon's logistical operations and the political desires of labor.[52] While this may be a price to pay for socialist planning, it certainly doesn't bolster the political composition of labour.

There are also specific ways in which Amazon seeks to foreclose a sense of collectivity or solidarity between its consumers and workers. Amazon, West argues, cultivates what she calls 'distribution fetishism', which means to 'encourage a personalized, affective relationship between consumer and brand, while discouraging attention to the labor and materiali-

48 Brett Neilson, 'The Reverse of Engineering', *South Atlantic Quarterly* 119.1 (2020): 75-93.

49 Max Grünberg, 'The Planning Daemon: Future Desire and Communal Production', *Historical Materialism* 31.4 (2023): 115.

50 Matteo Mandarini and Alberto Toscano, 'Planning for Conflict', *South Atlantic Quarterly* 119.1 (2020): 11-30.

51 Armin Beverungen, 'Automatisiertes Verhalten: Regierungskünste Bei Amazon', in Georg Toepfer and Sophia Gräfe (eds) *Wissensgeschichte Des Verhaltens. Interdisziplinäre Perspektiven*, Berlin: DeGruyter, 2025, forthcoming.

52 Jodi Kantor and Karen Weise, 'How Christian Smalls and Derrick Palmer Beat Amazon', *The New York Times*, 2 April 2022, https://www.nytimes.com/2022/04/02/business/amazon-union-christian-smalls.html.

ties that underlie heretofore unprecedented short delivery times'.[53] Hill similarly argues that 'unthinking' consumption conceals 'the labour that brings our purchases to the doorstep'.[54] One particular, and once again essential, technique which optimizes delivery is that of leaving parcels on the porch—a practice which was easily justified and became widespread during the COVID-19 pandemic, and has become standard for Amazon. The point is that the relationship between customer and delivery driver becomes mediated through operational images, as drivers take pictures of parcels on the porch as proof of delivery: 'As the system does not intend for the consumer to see the worker, the worker need not see the consumer. It is the camera—the system—that sees'.[55] While making labour invisible doesn't preclude solidarity, and the design of unthinking consumption doesn't preclude thinking about social relations, this is yet another example of how Amazon's operational techniques discourage collectivization.

Consumption at Amazon is also fundamentally personalized. The personalization of the consumer experience mentioned above relies on algorithmic and data operations that are framed as collective, such as the 'collaborative filtering' that is pivotal to Amazon's recommender system,[56] yet whose purpose is precisely to identify patterns in consumer habits which allow further personalization. While some other platform enterprises such as Alibaba, Shein or Pinduoduo have experimented with collective shopping, where the sharing and discussion of consumer choices is central to the shopping experience, Amazon has largely refrained from doing so. As the architect Jesse LeCavalier notes, the fulfilment industries 'foreground the capacity for individual impulsive choice' and in doing so 'claim to free us from confronting either the abstract but shared responsibilities related to, for example, the "slow violence" of global warming or the collective immediate action required by contemporary crises of government, economy, or environment'.[57] A democratic planning that builds on these personalized modes of consumption associated with logistical convenience would need to step back from the admittedly limited politics of consumption widespread today,[58] as much as it would eschew the possibility for political composition in this realm.

The evacuation of collectivity also becomes apparent in what the architectural theorist Matthew Stewart has termed 'Amazon urbanism'.[59] The kinds of spatio-temporal orderings of the city that the patents Stewart explores, speculating as they do on drone delivery and flying warehouses, foresee automated logistical cities largely bereft of sociality.[60] The actuality of this

53 West, *Buy Now*, pp. 62-63.
54 Hill, 'The Injuries of Platform Logistics', 5.
55 Hockenberry, 'Cellular Capitalism', 273.
56 Brent Smith and Greg Linden, 'Two Decades of Recommender Systems at Amazon.Com', *IEEE Internet Computing* 21.3 (May 2017): 12-18.
57 Jesse LeCavalier, 'New Interfaces in the Automated Landscapes of Logistics', *FOOTPRINT* 23: The Architecture of Logistics (Autumn / Winter 2018): 108.
58 Alan Bradshaw, Norah Campbell, and Stephen Dunne, 'The Politics of Consumption', *Ephemera: Theory & Politics in Organization* 13.2 (2013): 203-16.
59 Matthew Stewart, 'Amazon Urbanism: Patents and The Totalizing World of Big Tech Futures', *Failed Architecture*, 23 May 2018, https://failedarchitecture.com/amazon-urbanism-patents-and-the-totalizing-world-of-big-tech-futures/.
60 Amazon's speculative experiments with drone delivery and robots are far from successful. Cf. Jeff

Amazon urbanism manifests itself in the parcels left on porches without human interaction, and the Amazon Go stores which are meant to require no interaction with a cashier. Amazon's logistical convenience is also more broadly reflected in the way Amazon is remaking the city, in the way its automated delivery builds on an existing 'urban stack' for last-mile delivery and introduces new elements such as Amazon lockers, producing new logistical topologies of the city largely bereft of human encounter and exchange.[61] In scenarios of what Lyster calls the 'post-human city', visions of automation perpetuate spatio-temporal arrangements in which a mix of architectures of convenience enable personalized consumption experiences. Lyster contends that cities are potentially rescripted today in more equitable ways, since automated landscapes 'open up the design of the city to a range of creative stakeholders'.[62] Again, though, most visions of automated logistical cities, and certainly those of Amazon urbanism, largely discourage collective experience.

Focusing on Amazon's logistical convenience, as *convenience delivered*, and on how this convenience requires the logistification of life, therefore highlights how in the realms of labour and consumption, as much as in the city, collectivity is eschewed. It also emphasises how convenience becomes a demand for a logistified life, which is not only captured and surveilled, but also thoroughly individualized and personalised. Not only do the inconveniences associated with Amazon's convenience appear as essential to it, but Amazon's operational techniques push against the collective at every juncture. A recuperation of Amazon's planning techniques is faced with the formidable challenge of fundamentally reorienting Amazon's technologies, given their articulation with these logics of personalization.

After Logistical Convenience: Counter-Logistics and Logisticalty

Debates on economic planning have somewhat moved on since Phillips and Rozworski's intervention, distancing themselves from the distribution fetishism that characterized some of the earlier debates. For example, recent contributions recognize the need to develop 'alternative socio-technical infrastructures' and take account of aspects such as care work and the climate crisis,[63] and have explored ideas for distributed planned economies that do not commence with an infatuation with logistical convenience.[64] Jasper Bernes has already earlier proposed a 'counter-logistics' as 'a proletarian art of war to match capital's own *ars belli*'.[65] Instead of appropriating logistical techniques they would be turned against logistical capital-

Link, 'Amazon's Drone Delivery Dream Is Crashing', *Wired*, 4 April 2023, https://www.wired.com/story/crashes-and-layoffs-plague-amazons-drone-delivery-pilot/; James Vincent, 'Amazon Stops Field Tests of Its Delivery Robot Scout', *The Verge*, 7 October 2022, https://www.theverge.com/2022/10/7/23392360/amazon-disbands-delivery-robot-scout-development.

61 Armin Beverungen, 'Automated Delivery: Amazon's Urban Stack', *Navigationen: Zeitschrift für Medien- und Kulturwissenschaft* 24.2 (forthcoming).

62 Clare Lyster, 'Disciplinary Hybrids: Retail Landscapes of the Post-Human City', *Architectural Design* 89.1 (January 2019): 105.

63 Christoph Sorg, 'Failing to Plan Is Planning to Fail: Toward an Expanded Notion of Democratically Planned Postcapitalism', *Critical Sociology* 49.3 (2023): 478.

64 Jan Groos, 'Distributed Planned Economies in the Age of Their Technical Feasibility', *BEHEMOTH: A Journal on Social Dis/Order* 14.2 (2021): 75-87.

65 Jasper Bernes, 'Logistics, Counterlogistics and the Communist Prospect', *Endnotes* 3 (2013): 187.

ism. More recently, Bernes has rephrased his critique of central planning, noting—in a similar vein to the analysis above—that the efficacy of central planning requires 'both surveillance and automatic coercion' and thereby 'reproduces much of what we find intolerable about capitalism'.[66] His contention is that a 'truly emancipatory revolution' requires 'the distribution of power throughout society';[67] implying that Amazon's logistical convenience cannot be part of this politics.

Where counter-logistics is largely conceived as a resistive practice which opposes capitalist logistics, more recently it has been redefined as an affirmative project to recover the collective capacities that logistical convenience annihilates, particularly in the context of urbanism. Moving beyond conceiving of counter-logistics as disruption, Leandro Minuchin and Julieta Main identify a 'popular logistics' developed during the COVID-19 pandemic, which differentially assembles the circulation of resources, solidarities and territorial scales.[68] These in their view could provide 'a different territorial organisation structured around open and democratic supply chains that value environmental resources, cooperative economies and the sustainment of life'.[69] In a similar vein, Matthew Thompson and Yousaf Nishat-Botero contend that postcapitalist planning requires an urban revolution, which will transform the abstract space of logistical urbanism into a differential space, wherein planning must be 'grounded in the actually existing material struggles and experiments of the "urban everyday"'.[70] These interventions open up a terrain of counter-logistics and alternatives for economic planning no longer derived from Amazon's logistical convenience and focused instead on producing different spatio-temporal orderings of the urban. The analysis of logistical convenience as convenience delivered shares a concern for the urban while contributing an account of how Amazon's logistical convenience relies on an urban stack for last-mile delivery and, more broadly, the automation of logistical cities.

These affirmative projects of counter-logistics, which do not embrace Amazon's planning techniques but may merely appropriate particular elements, such as parts of its technological stack,[71] also align with a politics of what Harney and Moten have called 'logisticality'. They define logisticality as 'the resident capacity to live on earth', opposed to logistics as 'the regulation of that capacity in the service of making the work, the zero-one, one-two world that pursues the general antagonism of life on earth'.[72] This notion of logisticality surfaces from a more radical critique of logistics as a 'science of whiteness' emerging from the slave trade,[73]

66 Jasper Bernes, 'Planning and Anarchy', *South Atlantic Quarterly* 119.1 (2020): 68.
67 Bernes, 'Planning and Anarchy', 69.
68 Leandro Minuchin and Julieta Maino, 'Counter-Logistics and Municipalism: Popular Infrastructures during the Pandemic in Rosario', *Urban Studies* 60.11 (2023): 2073.
69 Minuchin and Maino, 'Counter-Logistics and Municipalism', 2092.
70 Matthew Thompson and Yousaf Nishat-Botero, 'Postcapitalist Planning and Urban Revolution', *Competition & Change* (2023, online first version): 16.
71 The artist collective knowbotiq, for example, has repurposed Amazon's Dash buttons for an artistic project in which conversations with bots around laziness and work refusal are meant to produce solidarities. See knowbotiq, 'Amazonian Flesh – how to hang in trees during strike?', *knowbotiq + krcf*, 27 April 2019, https://archive.knowbotiq.net/amazonian-flesh/.
72 Harney and Moten, *All Incomplete*, p. 64.
73 See also Susan Zieger, ''Shipped': Paper, Print, and the Atlantic Slave Trade', in Matthew Hockenberry,

and one which represents the degradation of means, where 'the body is to become a means only for the smooth flow of transactions [. . .] for the interoperability of all things'.[74] Logisticality for Moten and Harney materializes alongside logistics in 'the hold, the middle passage', by the captured and the fugitive, as 'the ability to find each other, to move together, to break the rule of Newtonian time and space, disorder it, and legislate new time and space to disorder, to gather, stranded into refuge together'.[75] This logisticality may seem distant today considering how logistical convenience or *convenience delivered* so thoroughly conditions life today. And yet, it may equally be perceptible in the multiple ways in which life is organized collectively despite or against logistics.

Logisticality, elusive as the term certainly is, here indexes a more radical politics against logistical convenience, one which refuses both the spatio-temporal orderings of logistics and the solutionism of convenience delivered offered by Amazon and others. Instead of collectivizing convenience, it suggests a move away from delivery to logisticality, a refusal of distribution fetishism and a recognition of the compulsory as much as antagonistic character of logistical convenience. It also indexes, against the evacuation of collectivity which characterizes the logistification of life underwriting Amazon's logistical convenience, a concern for collective capacities which are not tied to centralized planning techniques, but rather rely on an assembly of a different stack of technologies, capacities and socialities situated in urban space. Consequently, it also demands an analysis more attuned to antagonism, to the ways in which the logistical capacities developed by Amazon may imply a denigration of collective capacities for logisticality. And how logisticality may in turn provide a ground for a different kind of convenience. What convenience could possibly denote in this context, other than logistical convenience as convenience delivered, and whether logisticality could point away from a broader condition of convenience that is compulsory and antagonistic, remains to be enumerated—not in writing but in the speculative practices associated with logisticality in urban spaces and beyond.

Acknowledgements

This writing emerges from a research project on 'Automating the Logistical City: Space, Algorithms, Exploration', generously funded by the Lower Saxony Ministry for Science and Culture and the Volkswagen Foundation as part of the *zukunft.niedersachsen* program. Many thanks to my collaborators on the project – Ilia Antenucci, Maja-Lee Voigt and Klara Friese – for the collective research and insights on which I draw here, as well as to Marc Steinberg and Maja-Lee Voigt for very helpful comments on an earlier version of this paper.

Nicole Starosielski, and Susan Zieger (eds) *Assembly Codes: The Logistics of Media*, Durham, NC: Duke University Press, 2021, pp. 34-51.

74 Harney and Moten, *All Incomplete*, pp. 14, 71.

75 Stefano Harney in Niccolò Cuppini and Mattia Frapporti, 'Logistics Genealogies: A Dialogue with Stefano Harney', *Social Text* 36.3 (2018): 98.

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CLOUDED CONVENIENCES

MÉL HOGAN AND STEVEN GONZALEZ MONSERRATE

'The data center pretty much runs itself', Noah, a fifty-something-year-old facility manager tells us, indicating the three monitors where he spends most of his twelve-hour shifts troubleshooting servers and resolving issues through a virtual interface. 'If things are set up right, there is little you have to do out there on the floor.'

'And if they aren't?', we ask. Noah frowns. By now he is used to our endless questions and fathomless curiosity about every minute detail of life in the Cloud's windowless halls. He still doesn't get what ethnography is, why anthropologists and social researchers might find him fascinating, instead of 'bones and apes', as he put it, but he plays along now, no longer threatened by our spy-like presence.

'Then you have problems', Noah says. He grabs a bundle of ethernet cables as we set out into the 'out there' of glittering servers, neatly arrayed on alternating metallic racks like library books on shelves. We stride through a meshwork of locked metal cages, sections of the data center securely partitioned for clients, their servers and cables off-limits to ensure that the traders or business owners that rely on them don't experience costly interruptions to their connectivity. To us, they look like chicken coops, though strangely odorless and without any trace of life. In fact, it is difficult to imagine anything thriving in this frigid, mechanical labyrinth, where fans whir so loudly that we can barely hear Noah explaining how the cooling system works. Cold and hot are quarantined in opposing glass gable structures that prevent hot exhaust from mixing with the refrigerated air that is drawn into the blinking faceplates of servers in the racks. Butcher slats and blanking panels fill in any gaps where air might leak and impact cooling efficiency. 'It starts with cooling. This is foundational. It's our biggest expense and priority, because if the servers overheat, it's game over for us.'

Noah explains that the seamless user experience of internet access and cloud services relies on technicians like him ensuring constant, meticulous, thermal regulation. Were it not for the unseen hands of people like Noah, the Cloud would melt away in a cataclysmic heat death. For us, this sobering detail feels like a total contradiction of his earlier remark that the Cloud essentially 'runs itself'.

'How do you know how much to cool?', we ask, wondering if the troubling statistics we've encountered about data centers' carbon footprint had anything to do with this practice, which sometimes seemed almost like an art as Noah described it.

'It depends on what resources you have, your experience, and well. . .math', Noah answers, explaining some basic electrical engineering principles to us, something about matching kilowatt hours (kwH) to British thermal units (BTUs).

'So there is more to it than the math?'

Noah brings us to a white machine attached to the ceiling's ventilation ducts and a pressurized underfloor plenum beneath our feet. 'Some techs have a CRAC addiction.'

We stare at each other in puzzled amusement.

'Don't get excited, it's shorthand for Computer Room Air Conditioner. C-R-A-C.'

'What do you mean by addiction?'

Noah sighs, hands rifling through the greying wisps of his receding hairline.

'They think that adding more cooling solves the problem. But it's not that simple. Adding more traps doesn't catch a wily mouse. Sometimes it's about using the right kind of trap.'

'So there's more to it than that BTU to KwH equation?'

Noah gestures for us to feel the faceplate of the CRAC unit; a subtle film of condensation has slicked its metallic surface.

'Cooling is also about managing humidity.' Noah peers into a handheld environmental sensor. 'Too little of it, and a flash of static electricity from your ugly Christmas sweater could wipe out a drive.'

'And if there's too much?'

Noah adjusts one of the dials on the CRAC unit. 'Pop!' We chuckle awkwardly at his stilted onomatopoeia.

'You know what happens when electronics are submerged in water?', he asks, not expecting us to answer. We're grateful he doesn't add any more dramatic popping sounds as he explains the adversely conductive properties of water. 'That's why Hurricane Sandy was so catastrophic. The flooding destroyed the equipment.'

If flooding is a threat from below, humidity, we learn, is a threat from above. As water molecules thicken the air and temperatures rise or fall, condensation occurs. Clouds can form in the Cloud, and if they go unchecked, rain will fall in the server halls. This is the paradox of the data center as both a fortress and a crossroads. Too much permeability allows the outside element of chaos to seep in, as it did for a Meta data center in the cold, wet biome of Oregon.1 Data centers have a tricky relationship with water. In some facilities we toured, we knew that water, not air, was the primary cooling agent. A hydraulic 'irony'.2

Our tour of the cooling system closes on the rooftop, where Noah is eager to introduce us to the ventilation units jutting up from the ceiling to exchange air. To Noah's dismay, our attention is drawn instead to the decaying carcasses and wiry skeletons of pigeons littered across the roof. We peer at the grisly remnants of these avian pests, wondering if Noah had anything to do with this archaeology of violence.

'It's like a giant pigeon barbeque!', Noah exclaims, lighting a cigarette.

From this vantage point, we can see the rooftops of other buildings nearby. We notice that only this one has a crown of ductwork poking up toward the sky, a tell that this nondescript building is a data center, a vital node of cloud infrastructure built on the bones of an old factory. It has been 'slotted in' to existing urban circuits of electricity, coaxial cabling, and sewers, structurally robust enough to hold hundreds of server racks, each of which weighs more than two thousand pounds, as Noah revealed on a previous visit.

'The falcons are eating good these days', Noah chuckles, peering at the cranium of a pigeon, picked clean by the offending osprey. 'Maybe the ventilation units are affecting the bird ecosystem.'

Or perhaps pigeons enjoy the computational warmth these units vent out. Life always finds niches. The Cloud is no different. Despite their attempts to keep living things out—the spikes poking out from the edges of the roof to dissuade these pigeons from roosting, or the mouse traps we noticed in the underfloor plenum protecting vulnerable cables from gnawing vermin, or the hand sanitizer dispensers that target invisible invaders like bacteria and the COVID-19 virus—the Cloud is not impenetrable.

We are reminded of this permeability on a return visit, led by a younger tech named Tony. Tony's second life as a bassist has so calloused his fingers that he has to 'borrow' a fingerprint from a colleague to get us through the biometric checkpoint guarding the 'core cage' where the servers are. We find this breach of the center's otherwise spy-film-level security apparatus amusing, given the extraordinary screening and vetting measures we underwent to get here: no parking in the primary lot, to mitigate the risk of vehicular explosives; surrendering personal electronics into locked bins at the reception; emptying pockets and walking through a metal detector to ensure that we don't have hidden USB

1 Everest Pipkin, *It was Raining in the Data Center*, PhD diss., Carnegie Mellon University, Pittsburgh, 2018.
2 Jeffrey Moro, *Atmospheric media: Computation and the environmental imagination*, PhD diss., University of Maryland, College Park, 2022.

drives to introduce bugs into their network, or worse, weapons; proof of our credentials and identification submitted well in advance of our visit; non-disclosure agreements to prevent us from leaking sensitive 'proprietary business advantage' details after our visit; the prohibition of photography or recording of any sort while on the premises. All of these features and more, including the use of fobs and biometric scans for ingress and egress through the series of double-locking rooms or 'mantraps' between the facility entrance and the server halls, are deterrents for would-be saboteurs. But, as Tony's flagrant violation of protocol reveals, they are also performative. A carefully orchestrated security theater designed to attract prospective clients or assure existing ones that their 'mission-critical' data is 'safe'.

Tony leads us past a series of recently emptied cages, where scraps of cabling still coil around racks without servers. Maybe those former clients found out about Tony's habit of 'borrowing' fingerprints. Maybe they left because they felt their data was unsafe. We find this hard to believe, as we notice the spherical cameras installed at every intersection, a thousand glass eyes capturing and storing every moment at every rack on a hard drive somewhere. With this level of constant surveillance, it's hard to believe that security was their motive for leaving. The Cloud is embedded in capitalism; it is not merely infrastructure, but a service and a 'product' that is marketized like anything else.

'Noah said you might be interested in checking out the generators.'

We shout our assent over the din of ventilation and computation. Soon we are outdoors, relieved by the relative quiet of the cityscape and the gentle, warming presence of the morning sun on a clear spring day. Tony directs us to a fleet of diesel generators, one of them flashing in a state of hot-standby.

'This is our *security*.'

We frown, wondering why *this* and not the fingerprint scanner and the rest of the gauntlet of screenings is considered 'security.'

Tony reads the confusion in our faces.

'Security is more than just "security". We have so many threats to deal with. Yeah, the human threat is real. But there are worse things. Overheating. Flooding. And, the worst of the worst, a power outage.'

'So, these generators keep you running if the power goes out.'

'They're our lifeline', Tony says, as the sun creeps towards the horizon behind him. 'Even if the city goes dark, we'll still be in business.'

We imagine the fleet of generators sputtering to life, their choking stench and toxic plumes rising up to blot the sun from view. The Cloud emits carbon directly as well as indirectly. We know from Tony that this single, 80,000 square foot facility draws as much electricity as a big town or small city (the equivalent of 50,000 homes or more). If the grid goes down, these generators will keep it chugging along, a special 'uninterruptible power supply' routed throughout the data center to support its most crucial systems. This process occurs automatically. A pre-programmed fail-safe. A chain of redundancies that prevent *downtime*, a hiccup in digital capitalism, those remarkably rare moments when users encounter a 'server error' or 'server unavailable' message. Disruptions cost companies thousands of dollars per minute. If only they could harness the sun.

'We follow strict EPA guidelines when we use the generators. Of course, we'd rather not use them, but this is why data centers are so resilient. Come hurricanes or wildfires or grid disruptions, we can keep this place going with these generators.'

'And why can't you use renewables like solar or wind to power the data center?'

Tony scoffs, and his response sounds more like a direct quote from a marketing brochure than an off-the-cuff answer from the human being we were speaking to just seconds earlier.

'We invest in green energy. We care about that, for sure. But you can't run the Cloud on renewables.'

'Why not?'

A cloud passes over the sun, momentarily dimming it.

'It's not reliable. Wind fluctuates. The sun's brightness is variable. You can't control for those things. Data centers have to be ultra reliable. This is like a space station; a single crack, a single breach can mean catastrophe. We have to avoid every risk, every opportunity for failure.'

Later, over coffee, we learn how the employees internalize this risk-averse attitude. Tony tells us about the 'reality' of human error – the fallibility of techs like him or Noah who are, after all, human beings with limited capacities – and their constant fear of those mistakes.

'It's a stressful job', Tony admits, 'but the challenge is exhilarating. It keeps you on your feet. Every day is different. There are days when I want to strangle myself with one of these cables and other days where I feel like I'm a conductor, orchestrating a beautiful symphony. On those days, it feels like the Cloud is just running itself, and we're along for the ride.'

Tony repeats Noah's claim that the data center is nearly automated, but we are skeptical. We see the cascading redundancies, control measures always on the brink of failure, nested complexities that require constant care and finessing. The constancy and convenience of our online experiences are anything but given, we realize. Contrary to Tony and Noah's unshakable optimism, the Cloud's 'reliability' is the outcome of myriad convergences, an ever-hungering beast devouring precious resources: water, electricity, land.

We thank Tony as we set off into the 'out there', the world beyond the data center, the false fortress built atop the bones of a factory from a long-vanished era of Midwestern industrial splendor. We look back as we make our way to the exit, at the marble sprawl of the lobby and its vaulted-stone ceilings. The building is strong – made to survive industry turnover through decades, possibly centuries, with steel-reinforced columns, thick flat slab construction, and floors built as plates. The engineers ensured that the floors could withstand 250 pounds per square foot, withstanding the weight of heavy industrial equipment. Only now, this structural robustness supports server racks (2000 lbs each) rather than the printing presses and other equipment that populated old space.

The main entrance's two-story arched doorway depicts, in relief, an indigenous prairie person in stereotypical 'traditional' garb and a white frontiersman. It reminds us that the Cloud, too, is an accomplice to the theft of indigenous land. Rather than a twenty-first century novelty, this node of Cloud, wrought from the same red brick of the factories that preceded it, speaks to continuity rather than representing something radical, or even something new. We stroll past the terracotta shields of past industrial workers that adorn the limestone-trimmed walls. We see, in their severe expressions, echoes of Tony and Noah's faces as they rummage through cables or pry open floor tiles to feed more air to hungry servers. Are they so different, we wonder, from these turn-of-the-century factory workers from Chicago's industrial heyday?

Is the Cloud, as Nathan Ensmenger suggests, nothing more than an informatic 'factory'?3

These thoughts fade behind us as we make our way back to the train, returning to the universities where we work, borne up by an infrastructure as old as the factories that have become data centers. Maybe the Cloud isn't a factory. Maybe it's more like a train station, a node in a network of connections that enable the rapid movement of people, things, and stowaways like the rats and pigeons we found in the data center, the 'vermin' that have for centuries hijacked human infrastructures like ships to propagate themselves. Like a train, the Cloud breaks down. Though far less visible, weather-related

3 Nathan Ensmenger, 'The Cloud is a Factory', in Thomas Mullaney et al. (eds) *Your Computer is on Fire*, Boston: MIT Press, 2021, pp. 29-50.

delays or service disruptions, the expansion of connections to new nodes or networks, still impact these centers. Like train workers, the Cloud's technicians must overcome a thousand catastrophes, but unlike displaced travelers who cannot reach their destination in a timely fashion, most of the Cloud's users are never alerted to its everyday breaks and ruptures. The Russian doll of redundancies that Tony and Noah described assure that our everyday experiences online are insulated from the behind-the-scenes ruptures and catastrophes that constantly threaten the Cloud.

Susan Leigh Starr famously observed that when working properly, infrastructure is seldom visible.4 Like the air we breathe, it retreats into the background, bursting into the foreground of our awareness only when it fails us. Has the Cloud proved to be so elusive because its visible failures are so infrequent? As we type up field notes on our laptops hours later in a shared cloud doc, we wonder about the failures that might occur behind the scenes, and all the nested measures enlisted to ensure that we never experience the failures that are endemic to data centers. We think of Tony and Noah as we comment and copy and paste and spell check. Far from automated, far from futuristic and science fictional, the Cloud is more of the same, albeit obscured from view, by the metaphor of its name as much as the security apparatus designed to prevent most of us from ever getting a glimpse of its inner workings.

As ethnographers largely focused on the internet as a site of inquiry about society and culture, we're compelled to think about the stories told through promises made manifest in technological and infrastructural forms. Specifically, on this tour, we wondered—and uncovered—what the materiality of a promise like 'convenience' might look like. We could be at once impressed with The Cloud as a feat of engineering, and highly skeptical of it as anything more than a vehicle for scaled-up, ambiguated capitalist exploits. Our takeaway is that the data center—and all it encompasses—is an illusion that is hard to uphold, an infrastructure requiring immense human energy and labor to maintain. All of this becomes exponentially more difficult, and more problematic, on a struggling planet, drained by the promises of The Cloud.

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4 Susan Leigh Starr, 'The ethnography of infrastructure', *American behavioral scientist* 43.3 (1999): 377-391.

WAITING FOR 'DAY ZERO'

TUNG-HUI HU

In January and February 2018, during a third year of severe drought, I was living in Cape Town, one of the largest modern cities to come close to running out of water.[1] They called it 'Day Zero', the day that taps would stop, although technically it referred to the date when dams would drop below a crucial threshold of 13.5% full. If Day Zero occurred, the plan was to ration water to 200 water collection points in the city. Farmers half-volunteered their water reserves and were half-forced to surrender them. Stores quickly sold out of bottled water. The rich, as I saw in my walks up Signal Hill, predictably filled their rooftop pools, sometimes by paying water to be trucked in from elsewhere. Others queued at springs with as many plastic containers as they could carry, sometimes for hours at a time. We were limited to 50 liters a person per day from the taps, but that was luxurious compared to the threat of 25 liters if Day Zero occurred. (By comparison, the average American consumes 372 liters per person per day.) The TV blared with tips on how to flush as rarely as possible, and how to shower within 90 seconds; I remember a playlist of songs that lasted precisely 90 seconds. Paper plates and cups replaced ceramic at chic restaurants; sanitizer was provided instead of soap. The flies settled into our bathroom, and the city would cut water pressure at random times, as if the tap had a mind of its own.

In the time leading up to Day Zero, Cape Town's water infrastructure had become hypervisible. Websites for tracking dam levels and expected Day Zero dates were popular, as were google searches for water tanks. Hedley Twidle noted that 'reservoirs… have been photographed from every available angle, surveyed by drones and helicopters, snapped by passing motorists who pulled onto the verge to watch the uncanny spectacle of dust clouds roiling across Theewaterskloof, the city's main water reserve'.[2]

Day Zero is a textbook case for Susan Leigh Star's much-cited idea that we know infrastructure only when it breaks.[3] And knowledge of infrastructural failure assuredly changed some of the population's relationship with water. Indeed, with a dramatic drop in water consumption, Day Zero was postponed, at first by a week or two, then a month, then, finally, to the rainy season. Cape Town had made it through, and this success is often described as a triumph: case studies laud the high dam levels now, the determination and grit of its citizens, and new sources of water, suggesting that Day Zero is in the rearview mirror. The word most often applied is resilience: both climate resilience and the behavioral adaptations that city planners spurred in the population.

1 When São Paulo was down to 40 days of water in 2015, it still had sufficient water in the dams, just not the pipes to deliver it.

2 Hedley Twidle, 'Shadow of a Drought: Notes from Cape Town's Water Crisis', *Interventions* 24.3 (2022): 371.

3 Susan Leigh Star, 'The Ethnography of Infrastructure', *American Behavioral Scientist* 43.3 (November/December 1999): 377-391.

But I am left with questions: what did we really learn from this sudden rupture, from a year of those people with the privilege of having good plumbing suddenly thinking about their plumbing? Did the threat of sending middle-class inhabitants to communal access points, like those access points used by the other half of the population—the two million living in informal settlements, for whom Day Zero water rationing was simply an everyday reality—bring the city closer together? Did the sight of queueing at springs like Newlands, which, when I went by, seemed racially and ethnically mixed, cause a slight shift in the sense of the commons, in the sense of an affective ground between people? Or did it—given that fights also occurred in those queues, and the fact that police quickly shut down those informal systems—simply lay bare the divisions that were already there and were already known? What more can we say about infrastructure in a city that is a textbook example of the infrastructural splitting and fracturing of apartheid? Some people I spoke with were often fiercely proud of the infrastructure in Cape Town—to be sure, it was often better than where I live—echoing the political line of some Afrikaner-first parties which suggested that good roads were the positive legacy of Afrikaner rule in the postwar era.

The hyper-attention to tap water and dam levels also pushed many other problems to the side. The Day Zero crisis and the years following, Suraya Scheba and Nate Millington write, may have produced new possibilities but 'these new possibilities serve to entrench existing unequal socio-natural conditions. While we are witnessing an apparently radical reconfiguration in the deployment of techno-managerial instrumentation in crisis conditions, these in turn serve an existing path dependency predicated on inequality and uneven access'.[4] As evidence, they point out that South Africa has guaranteed a Basic Water Right in its constitution since 2001. However, under the new changes Cape Town instituted post-crisis, an indigent household had to now '"prove its poverty" through extensive documentation' to receive this water. What's worse, that guaranteed supply initially came through 'smart' water management devices, which cut off water flow after their free Basic Water Right ration of 350 liters/day. These water management devices were often used to tie households to regimes of debt and failed to account for multiple households in the same plot. As one resident told a researcher, 'Daily water supply is re-started at 0500 each morning, and on plots with multiple households residents queue to fill buckets from the external tap until the water expires (often before 0530)'.[5] The city eventually withdrew the devices after a firestorm of protest.

These poor connections to city sewer and water in the settlements, and the distrust those residents have with the city government, have led residents to tap sewer lines and vandalize water connections. Steel pipes and taps are sold to junkyards, and so are the power supply generators that power the pumps. There is often open conflict between the utility and its

4 Nate Millington and Suraya Scheba, 'Crisis Temporalities: Intersections Between Infrastructure and Inequality in the Cape Town Water Crisis', *International Journal of Urban and Regional Research*, Spotlight on: 'Parched Cities, Parched Citizens' (December 2018), https://www.ijurr.org/spotlight-on/parched-cities-parched-citizens/crisis-temporalities-intersections-between-infrastructure-and-inequality-in-the-cape-town-water-crisis/.

5 Charlotte Lemanski, 'Infrastructural citizenship: The everyday citizenships of adapting and/or destroying public infrastructure in Cape Town, South Africa', *Transactions of the Institute of British Geographers* 45 (2020): 599.

customers: 'from hijackings, armed robberies, to the stoning of water and sanitation vehicles'.[6] Charlotte Lemanski writes that 'citizens essentially "see" the state in infrastructure, and therefore interpret their everyday encounters with infrastructure as a representation of their relationship with the state'.[7] Is the state transparent, an embedded feeling of convenience or a source of pride? Or is it opaque, and a source of hostility? If you're poor, the state is everywhere.

It is commonly now accepted that, in Twidle's words, that Day Zero was 'a social and political fiction. . . [but] a necessary fiction' to force change in water consumption.[8] But calling out the ways that private companies profited from the crisis—from private desalinization companies bidding for contracts, to water giveaways to the beer conglomerate SA Breweries—the water activist group Water Crisis Coalition has suggested that Day Zero was an event manufactured for big business to profit, further suggesting the disconnect between the state and its population.

Making water's infrastructures and its costs visible has thus contributed to the financialization of water; as Scheba and Millington write, drought resilience 'is deeply intertwined with. . . financial resilience'.[9] For after water consumption was cut in half, this left the water utility in a precarious financial state, causing water tariffs to double after Day Zero. Because water infrastructure is paid for by usage, this creates a paradoxical incentive to both conserve but also to use at the same time. A Facebook user wrote on a local water group about this paradox: 'We need to consume more in times of relative plenty (and stabilize City of Cape Town water revenues) otherwise we will simply keep using less and less while having further levies introduced'.[10] The poster suggests the continuous cycle of crisis that this bizarre system of financialization produces: in the name of climate (i.e. fiscal) resilience, it asks consumers to use more water.

Marc Steinberg and Joshua Neves have written that 'convenience stops being a demand consumers place on platforms. . . and becomes instead a demand *on* consumers placed by platforms'.[11] While they are talking about digital platforms such as Netflix, their insight is all too applicable here: the convenience of water infrastructure, the easy flow of water from a tap, is something pushed on water users. The infrastructure demands to be used—so that it can be paid for.

6 Nomalanga Tshuma, 'R5k reward for info on theft, vandalism of CoCT's water and sanitation infrastructure', *Cape Argus*, 10 January 2022, https://www.iol.co.za/capeargus/news/r5k-reward-for-info-on-theft-vandalism-of-cocts-water-and-sanitation-infrastructure-84f3b73d-3408-4df0-ad87-af3e81f545f2.

7 Lemanski, 'Infrastructural citizenship', 602.

8 Twidle, 'Shadow of a Drought', 372.

9 Nate Millington and Suraya Scheba, 'Day Zero and The Infrastructures of Climate Change: Water Governance, Inequality, and Infrastructural Politics in Cape Town's Water Crisis', *International Journal of Urban and Regional Research* 45.1 (2021): 127.

10 User from Facebook Watershedding group, December 2018, as quoted by Millington and Scheba, 127.

11 Marc Steinberg and Joshua Neves, 'Introduction: In/Convenience', in this volume.

Let me describe my own relationship to water. I live in the US state of Michigan, next to a fifth of the world's freshwater in the form of the Great Lakes; one popular motto on Michigan license plates is 'winter – water wonderland'. And yet I remember the bitter irony of the water situation in the majority-Black city of Detroit, which declared bankruptcy in 2013; $5.7 billion, or one third of the debt, was attributed to its water department. I remember reading about the sudden visits of demolition company trucks to shut off the plumbing for those most indebted by their water bills, and about one city council member who suggested that residents drink from the river if they really needed water. As Peter Hammer, director of the Damon J. Keith Center for Human Rights at Detroit's Wayne State University, comments, 'They are also shutting water off not wishing people will pay necessarily, but implicitly hoping people will move'.[12] I remember, too, the lead leaching from pipes in Flint the following year. It was caused, in large part, by the emergency financial managers that had placed the city in receivership; as a result, ultimate authority in Flint lay not with the elected mayor but with the Michigan Department of Treasury. At one point, half of the Black population in the state was governed by an emergency financial manager,[13] suggesting the brutal link that right-wing governance makes between Blackness and 'the emergency,' and the sleight of hand that declaring a crisis or emergency does to disavow structural racism. Though water in Southeast Michigan and Cape Town have very different histories and contexts, the memory of residents snapping up bottled water came rushing back to life as I stood in the supermarkets of Cape Town.

The fantasy of water—as flow, as liquidity, even as territory outside of the rule of law—tracks closely with the fantasies of global finance capital. Yet it is too reductive to understand water through finance alone. To be sure, freshwater's seeming fungibility is a function of the abstracting qualities of finance, but ask residents at Flint about the peculiar smell and metallic taste, the brown color, of corrosive Flint River water, and one quickly realizes that water is intertwined with pipes, and pipes with the state. Chandra Mukerji has written about the logistics of water in the 17th century France, in which the king's Canal du Midi 'entered politics in an impersonal way. It was an agent of a state that could not be killed, but still had enormous influence over local life'.[14] The water in Flint, then, represents a second-order displacement of power, where the state itself is seen by followers of the Austrian school of economics as the beast to be starved or 'killed', the solid to be made mobile and liquid,[15] and where the impersonality of state governance gives way to the impersonality of financial management. 'They shut off water… hoping people will move'.

I am wondering if water has its own political sense. As this volume asks us to think about convenience, I am reminded that the word itself comes from the sense of convening; convenience

12 Peter Hammer, as quoted by Rose Hackman, 'What Happens When Detroit Shuts Off the Water of 100,000 People', *The Atlantic,* 17 July 2014, https://www.theatlantic.com/business/archive/2014/07/what-happens-when-detroit-shuts-off-the-water-of-100000-people/374548/.

13 Edward Helderop, Elizabeth Mack and Tony H. Grubesic, 'Exploring the invisible water insecurity of water utility shutoffs in Detroit, Michigan', *GeoJournal* 88 (2023): 4185.

14 Chandra Mukerji, 'The Agency of Water and the Canal du Midi', in Kim De Wolff, Rina C. Faletti, Ignacio López-Calvo (eds) *Hydrohumanities*, Oakland, CA: University of California Press, 2022, p. 28.

15 Jason Adams, 'The Liquid State', *Critical Inquiry blog*, 1 February 2016, https://critinq.wordpress.com/2016/02/.

used to mean a meeting or agreement (*convenientia*), a coming together. Foucault uses it to describe how similar things were brought together in the 16th century to form the great chain of being: 'Those things are "convenient" which come sufficiently close to one another to be in juxtaposition'.[16] Today we see convenience in the near merger of water and metal pipe into the same entity: tap stands for water and vice versa. What this tells us is that when we say water, we are really talking about its interface effects. Water is the content of the pipes, but water is also the medium (the pipes) that transports the fluid and the systems of power that sustain that medium. It is the ability to bring things so closely together that they seem to merge into one, liquid, thing: 'water'. Water convenes not just physical infrastructure but also operates as the place where finance and the state meet, where humans and nonhumans come to an agreement, and where the individual and the public meet. The convening does not happen once, but continuously, over and over. This is a better description of infrastructure: not as working and then broken, broken and then fixed, but as a continual requirement to assemble things, neighbor with neighbor, state next to debtholder, one future with another.

Water, then, becomes a question of how to convene. As Andrea Ballestero points out in her ethnography of water, regulatory authorities at Costa Rica's ARESEP laboriously adjust the equations of cost to balance a mandate to deliver water affordably with a mandate to produce a surplus.[17] To calculate the cost of living, they must tie water to the shifting basket of commodities for an average, 'unmarked' consumer household, indexing water to an assembly of objects such as screwdrivers, video games, pork ribs, and—recursively—bottled water. But such technical measures often formalize certain practices or qualities at the expense of others. Other practices, such as tapping a power line or distribution box in a refugee camp or pulling a self-made spur from formal infrastructure,[18] or paying $30 for a plumber to turn the taps that the city of Detroit has shut off back on, exceed what the state can see *as* infrastructure, even as they are themselves ways of convening.

When I say convene, then, I mean more than a neutral, Latourian assemblage of things. I mean to invoke the relation of water that binds someone, if not to the state, then to the imaginaries of infrastructure. The state is busily cutting deals to supply water or power to data centers, semiconductor manufacturing, and other new economy corporations; it is promoting the right-wing market capture of the state because, in the words of Thatcher, 'the object is to change the soul'. But another kind of public is being made at the same time, built out of living within dispossession, even out of indifference to a state which has abandoned them. For 'Southernness' transcends its hemispheric geography and shows up in even the northernmost states, such as Michigan.[19] The legacy of Southernness is a testbed for new methods of accumulation

16 Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences*, New York: Vintage, 1994, p. 18.

17 Andrea Ballestero, *A Future History of Water*, Durham, NC: Duke University Press, 2019.

18 Angela D. Storey, 'Implicit or illicit? Self-made infrastructure, household waters, and the materiality of belonging in Cape Town', *Water Alternatives* 14:1 (2021).

19 This thought, and others in this paragraph, come out of the collective thinking produced at the *Southern Urbanities* workshop, British Academy, London, 15-16 September 2023; my fellow travelers were Bilgin Ayata, Laura Guimarães Corrêa, Rodrigo Firmino, Rafael Grohmann, Ali Karimi, Jovan Scott Lewis, Bingchun Meng, Nancy Odendaal, Bhaskar Sarkar, and AbdouMaliq Simone. My gratitude to have had

through dispossession. This is the case in the right-wing Mackinac Center for Public Policy's experiments with governance, advocating for the then-novel idea of replacing elected city governments with emergency financial managers,[20] or the always-looming proposals to sell off the Detroit water system to a private company. But it is also a testbed for new forms of convening. I think of those engaged in direct action, advocacy, and mutual aid, as with the work of the Detroit Water Brigade or the Peoples' Water Board, as well as the work by the Canadian advocacy group Blue Planet Project to invite UN Special Rapporteurs to visit Detroit, thereby internationalizing its case. If water insecurity is embedded in translocal structures, tracing these linkages—convening across continents—might be a necessary first step.

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And so I am suspicious of the narrative of crisis through which Day Zero is framed. To be sure, when I made trips outside of Cape Town, I remember how good it felt to experience water again—luxuriating, for example, in the water pressure in a trip to Durban; moments, one could say, where I was re-experiencing the joys of convenience. Was that the end goal of this crisis?

In a life that is endlessly elongated by waiting and standstill, in a time of lethargy, we might begin to consider the racialized temporality of nothing changing, whether because of a 'historical stillness' (Hortense Spillers) or simply the period of indefinite deferral by which convenience—in the form of modernization or development—is promised but recedes, continually.[21] After all, the idea of Day Zero as a stopping or a disruption or a crisis was as open to interpretation as any other temporal event. As I have said, 'Day Zero' was already a living reality for half of the city. The day of Day Zero itself—calculated simply as current date plus water in reservoirs over 13.5% divided by daily consumption—was constantly changing. First it would be a month, then, after another week of no rain, a couple of weeks, then, after conservation, a month again. We watched the sky and the weather, wondering if it would ever rain, but that was the point, wasn't it: we were watching weather and, if we were thinking about it, climate change, the cycle that has made it 100 times more likely that this supposedly one-in-a-thousand-year event would happen again. The temporality of the water outage was postponed, then closer, then postponed again, a feeling of crisis endlessly stretched out, turning into something permanent if seasonal in its characteristics.

There was a crisis, and yet there was not. Western Cape's premier Helen Zille described the efforts 'to prevent anarchy' should Day Zero happen, and newspapers ran with it, describing an apocalyptic 'Mad Max scenario' of resource wars (there's that word again: apocalypse, from the Greek, *to uncover, reveal*). Congregations led mass prayer services for rain, and even the water department's website asked for citizens to pray for rain on the weekend of 9 February 2018; tens of thousands of evangelical Christians—some estimates say 250,000—converged in Mitchell Plain, in a service memorialized a year later. And yet these mass prayers

such brilliant colleagues to think with.

20 Adams, 'The Liquid State'.

21 Hortense Spillers, *Black, White, and in Color: Essays on American Literature and Culture*, Chicago: University of Chicago Press, 2003.

suggest how its participants saw the 'crisis' in some sense as outside of the framework of the human. They wanted something outside of the calendrical and calculated timeframe of the planners; they wanted something outside of the time of the ordinary.

The gathering at Mitchell Plain thus points us to alternative frameworks for considering water. The UN estimates that in the Western Cape region, water run-off will decline by 13% by 2050 (even as demand for irrigated water is projected to increase by 6.4%) because of climate change.[22] This decline is neither temporary and nor is it reversible on a human timescale. The sheer magnitude of this decline is hard to fathom, and it presents a methodological problem: Does it still make sense to consider water alongside digital networks and other forms of infrastructural media, when water has traditionally represented the idealized limitlessness that digital media typically tries to mimic through its flows, streaming, and liquidity? And though the cost of water is often indexed to the Consumer Price Index basket of consumer prices—Costa Rica, to take Ballestero's example, includes many modern-day conveniences, such as the cost of internet service, cable TV, and a movie rental—can water be said to be a convenience in the same way?

While common sense might hold that water is unlike digital media in that the former is both singular and a necessity for human life, media scholars have shown that the two are often interlinked. Water carriers in Zambia, Lisa Parks has argued, are as much part of the internet infrastructure as the satellite internet systems that physically carry the data packets, because the water carriers bring life to, and thereby make possible, the schoolhouse where the internet is accessed.[23] In much the same way, the hyperscale data centers of today guzzle water but pay lower prices than humans. Some scientists estimate AI may remove between 4.2 to 6.6 billion liters of water per year by 2027;[24] in this way, artificial life competes with and is invested in the depletion of human life. Thus, water's differences from digital media are less important than the new questions that can arise from thinking the two in conjunction. Rather than scaling one smoothly into another, however, we should instead cast a critical eye on the frameworks that are increasingly bringing the two closer together.

Take the question of publicness. Catherine Fennell has shown that our tendency to universalize water as opposed to other things considered 'private' is itself worthy of analysis: why is water uniquely 'public', she asks, while other forms of infrastructure, such as housing, are not?[25] Mapping the 'kinds of risks that a far-flung group of citizens can recognize as shared', Fennell continues, 'and thus worthy of collective concern and action', we might begin to ask

22 UNU-WIDER, *Potential Impacts of Climate Change on National Water Supply in South Africa*, WIDER Research Brief, Vol. 2016 Issue 3 (Helsinki: UNU-WIDER, November 2016), https://www.wider.unu.edu/publication/potential-impacts-climate-change-national-water-supply-south-africa.

23 Lisa Parks, 'Water, Energy, Access: Materializing the Internet in Rural Zambia', in Lisa Parks and Nicole Starosielski (eds) *Signal Traffic: Critical Studies of Media Infrastructures*, Champaign, IL: University of Illinois Press, 2016, pp. 115-136.

24 Pengfei Li et al., 'Making AI Less "Thirsty": Uncovering and Addressing the Secret Water Footprint of AI Models', preprint v1, *arXiv*, 6 April 2023, https://arxiv.org/pdf/2304.03271.pdf

25 Catherine Fennell, 'Are We All Flint?', *Limn*, special issue: 'Public Infrastructures/Infrastructural Publics', July 2016, https://limn.it/articles/are-we-all-flint/.

what other things are seen differently, as a matter for the private sector. Digital platforms and other matters of personal convenience are often inevitably seen through the lens of tech companies and private investment, rather than public goods. But what would it mean if they were publicly maintained and provided?

Reciprocally, the framing of drought as a matter of inconvenience (however serious) has gone hand in hand with the privatization of water. The disappointment of Day Zero is how much work went into quick fixes (smart meters, a new app, drones over the reservoirs) that would have an immediate payoff rather than the work of repairing past harms and rethinking growth in the context of a permanent decline of water supplies. If there is a lesson here, it is surely about how urgency itself, when wedded to neoliberal demands, can exacerbate or crystallize the slow violence of environmental harm and racial capitalism. One public is assembled out of crisis. But if we are to find another temporality for thinking infrastructure, it must start from those missing from that assembly. It must start from those who are already decoupled from urgency.

Day Zero is often seen as a harbinger of the future for other cities, but as Akhil Gupta argues, infrastructure is better thought of in terms of a future in ruins, a suspension of the future that was promised at its beginning. Infrastructure inhabits a process of ruination even before it is built (contractors might have used shoddy material or bribed a government official), and even after it is built (it is continually under repair). As Gupta writes, 'Beginning from movement requires a completely different optic, making us think of periods when infrastructures are "at rest" as not the normal condition, but as something to be explained'.[26] This is a much better way of understanding water in Cape Town, or elsewhere: not breakage as a disturbance of an infrastructure 'at rest', or a revelation of what infrastructure has been, but rather breakage and ruination as the ordinary state of things, with the moments of solidity just a social and political fiction to stabilize it. When did we ever really have that 'convenience' that the municipal water supply promises? And which ideologies (Afrikaner exceptionalism, post-crisis triumphalism) are allied to it? That the crisis was photographed and visible so often was simply an attempt to freeze the idea of water usage into place.

At the same time, suspension is also a feeling, a convening. In the mass prayers, in the protests against the city, in the informal economy of water-haulers, in the fleeting solidarities between strangers, in hashtags and buses and in the kitchen sinks and bathrooms, there was something in the air between winter 2017 and summer 2018: a feeling of time suspended. Everyone was waiting. Lauren Berlant asks: 'What is in the air to make new genres of convergence?'[27] That the net result of Day Zero, a few years on, was arguably to cement further inequalities does not take away from the fact that social form was shifting and was itself in-progress. Berlant asks us to attend to the affective infrastructure behind events such as Day Zero, even

26 Akhil Gupta, 'The Future in Ruins: Thoughts on the Temporality of Infrastructure', in Nikhil Anand, Akhil Gupta, and Hannah Appel (eds) *The Promise of Infrastructure*, Durham, NC: Duke University Press, 2018, pp. 73-74.

27 Lauren Berlant, 'The commons: Infrastructures for troubling times', *Environment and Planning D: Society and Space* 34:3 (2016): 412.

if that feeling of ambivalence and worry and fear and resentment has receded, for most of those residents looking back on it, into something more akin to everyday life. Inconvenience again seems normal, ordinary, part of the banal structure of convenience: a pumped-up bill; a sign asking you to save water.

Suspension is the temporality of a feeling that I termed lethargy elsewhere, for the sense that one is acted upon, rather than the agent of action.[28] Lethargic time is something to be wasted or passed, rather than to be marshalled or saved; it often wears away at the self, rather than being directed outward. To invoke Stephen Best, this 'violence "turned inward"' can offer some 'fleeting relief from the pressure to endorse what Kant calls the world "as is."'[29] This offers a partial explanation of why some residents attacked their own water and sewer infrastructure: not just because that infrastructure was the embodiment of state disinvestment and abandonment—or to put it in plain terms, it's shitty and doesn't work very well—but also because, to cite Nikhil Anand's work on 'hydraulic citizenship', infrastructure is also a metonym for one's own sense of belonging to a place.[30] The tearing away of these forms of connection was their own form of registering discontent with the world 'as is'. Paradoxically, this tearing away was their own form of belonging in dispossession.

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I began writing this essay skeptical of a certain scholarly (but also critical and journalistic) move that I found exhausting in digital media: the contrived drama of revealing the hidden interior of a digital system, which functions by first casting infrastructure as secret, forbidden, or otherwise 'black boxed'. It's a move that plays on the heroism of the critic or journalist, who parachutes in (often to countries in the global South) to find the hidden source of a system. Today this revelation is often 'hidden' laborers, such as an AI worker or a content moderator. However well-meaning, in its worst iterations, these stories become an anodyne plea for empathy, or for a form of white saviorism that implies that only those from the global North have agency. The cast of the story, this framework implies, can only be found in the North, whether tech regulators, academics, critics, or the familiar villains of Silicon Valley. To be blunt, the problems of digital platforms and outsourced work are well-known to those workers; the revealing is for the benefit of privileged audiences elsewhere, not for them.

When the idea of revelation in infrastructure studies relies on so-called 'glitches' or 'breaks' or temporary inconveniences to unmask it (think of Al Gore's climate film *The Inconvenient Truth*, which links truth and unconcealment to a temporary but necessary moment of inconvenience), it ironically bolsters the monolithic nature of the system. This sort of theory, as I have been arguing, both assumes the glitch is a temporary event and assumes that infrastructure itself is a static thing that works, rather than always in ruins. As a result, we come to believe

28 Tung-Hui Hu. *Digital Lethargy: Dispatches from an Age of Disconnection*, Cambridge, MA: MIT Press, 2022.

29 Stephen Best, *None Like Us: Blackness, Belonging, Aesthetic Life,* Durham, NC: Duke University Press, 2018, p. 26.

30 Nikhil Anand, *Hydraulic City: Water and the Infrastructures of Citizenship in Mumbai*, Durham, NC: Duke University Press, 2017.

that infrastructures are largely fixed in place and unable to be fundamentally changed or redesigned. In turn, they become inevitable, and thereby invisible. These inconveniences, disavowed as temporary, make infrastructure convenient: at hand when needed, receding when not. The search for the glitch is tied to, and complicit with, the need to produce the 'crisis'. Instead, breakdown and suspension are periodic and even continual processes; we are, in Berlant's words, 'always going through a phase'.[31]

That this feeling of things falling apart has become general, rather than localized, suggests that we now may need a media theory that revolves around scarcity and decline, around the ruins of infrastructure that is already obvious. What used to be invisible is quite visible; the background has already inverted into foreground. In the West, the news stories today are over consumer goods delays from container ships stuck, spectacularly, in the Suez Canal and, more recently, in the Chesapeake Bay (coincidentally from the same company), around broken supply chains and laggy networks. We need a media theory that is less focused on revelation, that gazes less at the future or at an imagined Day Zero than at the brokenness of the present.

At the same time, I do not mean to diminish the fundamental desire to understand infrastructure. The difference, in my mind, is that such knowledge should never be a quick win, a sudden reversal from invisible to visibility; it lies in the unspectacular and more mundane acts—such as recalculating the water utility's index for cost of living—that constitute how we live with and adjust to today's technical systems. In a recent workshop I attended in Berlin, Lachlan Kermode expressed disappointment about how artificial intelligence is seen as an impenetrable black box; what if, he argues, we understood AI as a system more akin to government?[32] We would not shy away from the complexity of an AI model any more than we should shy away from tracing the passage of a bill through the legislature; indeed, democracy counts on it.

Infrastructure is, like government, a plural noun, a convening. What makes infrastructure possible include explicit mediators, such as the financial equations that work to link end-user and water supplier. What we should also include in this conversation, however, are the many other forms of assembly. Angela D. Storey has written of the implicit infrastructure that snake across the Khayelitsha township in Cape Town, the pulled lines of plastic pipe for water access and sand sinks for wastewater disposal. This self-made infrastructure confuses our normal distinction between fixed and temporary, formal and informal: as Storey tells it, at one point the 'official' tap ran dry, but city workers, realizing it would take too much work to fix it, treated the pulled tap as a de facto part of the formal city water system. 'Thus enrolled,' Storey comments, for some residents it 'had *become* a city tap, made real through the thinking, explanations, and everyday experiences of residents'.[33] I have seen similar ingenuity on Reddit forums, of a 'smart'

31 Berlant, 'The commons', 414.

32 Lachlan Kermode, conversation at 'Models – Abstraction – Scale: Understanding Historical and Societal Impacts of Artificial Intelligence' workshop, American Academy in Berlin, Berlin, 5 December 2023.

33 Storey, 'Implicit or illicit?', 86.

water meter in Detroit bypassed through some home-made welding. Rather than producing truth, the question becomes how these stories, explanations, and experiences 'make real' the assembly between neighbors, in part by making the city (or state) into a fiction. They suggest the extension of infrastructure not just into physical systems on the edge of the urban core but into affects and imaginaries. A city is built on the sense of finitude and futurelessness and hope and fiction that mix together: a contemporaneity. Heraclitus has suggested a city is like *kykeon,* an ancient Greek drink of wine, cheese, and barley: an emulsion, it 'must be stirred up to avoid division'.[34] A city separates into its component parts until placed in movement, until—we could say—it is once again convened.

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34 Heraclitus, fragment DK B 125, as discussed in Nicole Loraux, *The Divided City: On Memory and Forgetting in Ancient Athens*, New York: Zone Books, 2002, pp. 108-111.

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PLATFORM ECONOMIES, REPUTATIONAL STAINS, AND THE IN/CONVENIENCES OF PORN

SUSANNA PAASONEN

Throughout the history of pornography, intermediaries such as distributors and vendors have reaped notable benefits from the work of performers and producers through hefty markups in sales of commodities (prints, booklets, books, magazines, Super 8mm films, VHS tapes, DVDs, movie tickets). The dynamics changed as performers and producers could directly market goods on their own web sites. Around the mid-1990s, this merely meant mastering the very basic HTML, even as it took more effort to monetize the content. Yet traffic there was, leading to the development of online payment system providers (PSPs) that were to a large extent—but not exclusively—coined for the needs of pornographers.[1] The market dominance of centralized webcam platforms and video aggregator sites during the past fifteen years or so has marked another drastic shift in how sexual media is distributed and consumed, and in how content creators are rewarded for their work.[2] Centralized distribution platforms have become a novel branch of intermediaries, the profit margins of which are often opaque. Meanwhile, their cultural visibility has made them targets of financial deplatforming. This line of developments meets one where payment systems' obscure terms of use meet cross-platform techniques of surveillance ousting sex workers from membership in platform economies.[3]

The entanglements and co-developments of web hosting services, payment system providers, and software development since the 1990s point to the factual impossibility of plying the porn industry apart from the rest of the online economy. This has less to do with the permeability of the industry's boundaries than its very embeddedness in the development of the World Wide Web that came about—not least since pornographers were among the first to recognize the technology's financial potential. Yet, within the contemporary, sexual content is energetically ousted by infrastructural gatekeepers such as app stores, centralized social media platforms, banks, credit card companies, and PSPs.

This chapter inquires after the position and perceived value of sex and its laborers within contemporary platform economies through the analytical lens of in/convenience. It asks: for

1 Frederick S. Lane III, *Obscene Profits: The Entrepreneurs of Pornography in the Cyber Age*, New York: Routledge, 2001; Lewis Perdue, *EroticaBiz: How Sex Shaped the Internet*, New York: Writers Club Press, 2002; Wendy Hui Kyong Chun, *Control and Freedom: Power and Paranoia in the Age of Fiber Optics*, Cambridge, MA: The MIT Press, 2006.

2 Heather Berg, *Porn Work: Sex, Labor, and Late Capitalism*, Chapel Hill: The University of North Carolina Press, 2021; Rachel Stuart, 'Webcam Performers Resisting Social Harms: "You're on the Web Masturbating… It's Just about Minimising the Footprint"', *International Journal of Gender, Sexuality and Law* 2.1 (2022): 171-198.

3 Lana Swartz, *New Money: How Payment Became Social Media*, New Haven: Yale University Press, 2020, pp. 77-79, 96; Tara Siegel Bernard, 'Sex Workers Have Been Shunned by Banks, Even When Their Work Is Legal', *The New York Times*, 18 November 2023, https://www.nytimes.com/2023/11/18/business/sex-workers-bank-accounts.html.

whom centralized platforms are convenient and how, what vulnerabilities they yield, and what it means for content creators to be cast as inconvenient enough to be demonetized. To do this, I build on Lauren Berlant's work on inconvenience as broadly descriptive of an unpleasant sense of overcloseness with the world and the people within it as 'the affective sense of the familiar friction of being in relation'.[4] Berlant frames inconveniences as both intensely felt and as grounded in social dynamics preceding and enveloping the subject; as entangled in relations of privilege wherein the subordinated are the ones to be cast as inconvenient. At the same time, such relations are not merely ones of hierarchical control, given that the subordinated experience much inconvenience in attachments and encounters where they are not fully wanted, which can nonetheless also allow for their thriving. Inconvenient attachments and relations are, for Berlant, both an ontological condition and steeped in ambiguity. Enlivening as much as eating away at capacities to act, they are comforting and irritating, beneficial and harmful, and certainly a constant.

Berlant's questioning of inconveniences continues their long-term interest in how affective attachments (and distances) give shape to sociality and community beyond that which is seen to comprise the public sphere—the blurriness of the boundaries of intimate and public spheres.[5] The notion of inconvenience then foregrounds frictions and inequalities involved in the mundane crafting of connections and disconnections that we cannot do without; exclusion from which comes at a cost.

Applying the notion of inconvenience to the attachments and detachments between online payment systems, sex work, and platform politics, I suggest, makes it possible to consider the affective dynamics underpinning corporate policies—the deplatforming of sexual media resulting from norms particular to US culture yet yielding global power.[6] Following Berlant, affective publics presume shared worldviews and sentiments that may not in fact exist.[7] The same can be said of the operations within the public sphere and capitalist logics, the decisions, rulings, and policies of which are not simply led by straightforwardly optimized profits but which also balance taste cultures, moral imaginaries, and reputation economies operating in realms of affect.

As a dynamic, inconvenience remains contingent so that the perceived gains and damages among the actors involved do not remain the same, even as their asymmetrical positions do: for mundane inconveniences bolster systematic, historically construed practices of oppression.[8] Taking on the question, '*[w]hat price and what kinds of price are being paid in order to*

4 Lauren Berlant, *On the Inconvenience of Other People*, Durham, NC: Duke University Press, 2022, p. 2.

5 Lauren Berlant, *The Queen of America Goes to Washington City: Essays on Sex and Citizenship*, Durham, NC: Duke University, 1997; 'Intimacy: A Special Issue', *Critical Inquiry* 24.2 (1998): 281-288; *The Female Complaint: The Unfinished Business of Sentimentality in American Culture*, Durham, NC: Duke University Press, 2008.

6 Walter Kendrick, *The Secret Museum: Pornography in Modern Culture,* 2nd edition, Berkeley: University of California Press, 1997, pp. 241–43.

7 Lauren Berlant and Jay Prosser, 'Life Writing and Intimate Publics: A Conversation with Lauren Berlant', *Biography* 34.1 (2011).

8 Berlant, *On the Inconvenience*, p. 151.

live a life as other people's inconvenient object?',[9] this chapter explores inconvenience as an affective dynamic underpinning the presence of commercial sex within platform economies. As a persistent dynamic, inconveniences associated with sexual media have notable tenacity as felt and articulated friction embedded in relations of power wherein sex workers are cast as less-than, even as their labor has been key to how online economies have developed. What then, is at stake when such a dynamic, rooted in sexual politics and corporate policies particular to the US, becomes articulated as ethical norms impacting the infrastructural affordances of mediated sex on a global scale? Spoiler: much.

Oh, very convenient!

First, the obvious utter convenience of sexual content in and for web economies. Throughout the 1990s, before online gaming picked up and before Amazon ever broke even, porn—along with eBay—formed an exception by catering content that users were willing to pay for. Consequently, safe credit card processing systems, hosting services, and streaming video technologies were first developed for the needs of porn sites.[10] Wendy Chun argues that the commercial success of pay-porn was instrumental to the rise of mainstream e-commerce in demonstrating both people's willingness to use credit cards online and the functionality and safety of these payment options, enabling to the 'dotcom' boom of late 1990s.[11] In a concrete sense, porn sites were incubators for payment systems forming the infrastructural backbone of online economies today.

The profits of pornography were, from the start, highly lucrative for Web hosting firms, yet business collaboration with pornographers—at this point largely independent entrepreneurs, established print and DVD brands being reluctant to move online—involved reputational risk so that their role within the emergent economy was often downplayed despite it being elementary to how things kept afloat and grew.[12] The same logic of in/convenience extended to payment infrastructures which, by classifying porn sites as high-risk customers, began charging them higher processing fees.

Independent Sales Organizations (ISOs), third-party payment processing companies authorized to handle merchant accounts for businesses, emerged as new intermediaries serving 'as the middlemen for risk just as they serve as the middlemen between merchants and payment acquiring services'.[13] As Lana Swartz explains, since the 1990s, we have witnessed a shift toward payment intermediaries that are not only economic but equally circulatory as communication infrastructure. The question, then, is, 'who gets to control and profit from communication infrastructure, who gets to access it and on what terms, what kind of traffic gets to travel over it'—and, factually, who can get paid and what fields of trade are exclud-

9 Berlant, *On the Inconvenience*, p. 5, emphasis added.
10 E.g., Lane, *Obscene Profits*, p. 70; Perdue, *EroticaBiz*; Brian McNair, *Porno? Chic! How Pornography Changed the World and Made It a Better Place*, London: Routledge, 2013, pp. 27–29.
11 Chun, *Control and Freedom*, pp. 78–79.
12 Perdue, *EroticaBiz*, p. 3.
13 Swartz, *New Money*, p. 87.

ed.[14] This has involved the development of financial tech (as a subset of the Silicon Valley business sector) partly building on the models of social media in person-to-person payment options. Within this, charging high-risk customers higher processing fees has led to their flat-out exclusion of from payment platforms. In order to identify such customers, PSPs use data analytics and AI-driven prediction to troll through merchants' social media accounts in order to evaluate their viability and profitability.[15] This extension of surveillance effectively ousts sex workers with social media presence from payment systems and, in a very concrete sense, from membership in platformed transactional communities where they can make a living.[16] A similar logic of exclusion remains ubiquitous on social platforms where sex workers dependent on networked visibility 'are seen to sell their bodies and to advertise their services merely by virtue of their [. . .] presence', rendering their accounts subject to removal.[17]

In a striking example of governmental intervention, the US Department of Justice's 2013–17 Operation Choke Point classified porn sites, along with firearm dealers and payday lenders, as potentially illegal businesses involving a high risk of money laundering and fraud, pressuring banks to not merely charge higher fees but to discontinue their services without proof of wrongdoing, thus circumventing law enforcement and courts in determining criminal violations.[18] The operation was discontinued as it became evident that its underlying motivation concerned the unsavory, rather than criminal, nature of the said businesses, the House Oversight and Government Reform Committee 'releasing evidence that "federal regulators are pressuring banks to terminate relationships with legal yet disfavored industries, without regard to the legitimacy or risk profile of individual companies"'.[19] The aim was to shut industries down by cutting them off from payment infrastructures. This points to not just how the US government allows for banks' unequal treatment of commercial entities on the basis of taste and value judgements, but also how they prefer to enforce this: 'In the metaphor of Operation Choke Point, money is like "air": those who are denied it can be "choked off"' (Swartz 2020, 80). This logic of exclusion and erasure prevails.

There is much opaqueness in how financial infrastructures make their decisions concerning un/viable customers or calculate their degrees of riskiness. Following Frank Pasquale, this is part and parcel of 'blackbox society' within which the operations of Wall Street and Silicon Valley companies are hidden from public scrutiny even as data culture renders the lives of individuals affected by their operations subject to increased surveillance. Such companies 'organize the world for us' within 'data-driven convenience' that quickly flips into inconvenience when

14 Swartz, *New Money*, p. 6.
15 Swartz, *New Money*, pp. 78–79, 93.
16 Swartz, *New Money*, pp. 49, 82, 96.
17 Carolina Are and Susanna Paasonen, 'Sex in the Shadows of Celebrity', *Porn Studies* 8.4 (2021): 417.
18 Frank Keating, 'Justice Puts Banks in a Choke Hold', *Wall Street Journal*, 25 April 2014, https://www.wsj.com/articles/frank-keating-justice-puts-banks-in-a-choke-hold-1398381603; Swartz, *New Money*, pp. 79–80.
19 Isaac William, 'Don't Like an Industry? Send a Message to Its Bankers,' *Wall Street Journal*, 22 November 2014, https://www.wsj.com/articles/william-isaac-dont-like-an-industry-send-a-message-to-its-bankers-1416613023.

services are withdrawn—as they very abruptly can be.[20] Beyond the inconveniences articulated by the banking and payment sector (here loosely defined) as the reputation stain involved in working with pornographers, Operation Choke Point speaks loudly of how moral, rather than legal, concerns drive decision-making in a domino-like effect where the ones falling under the metaphorical pile of tiles are the ones trading in sexual content. Such policies build on, and feed, imaginaries wherein the inconvenience of pornography is located in its presumed miasmic potential to sully (corporate) public images through association. Reputation is an intangible corporate asset which, if well managed, 'represents the organization favourably to its publics and can be particularly valuable in doing so to its customers'.[21] It is easily tarnished and, even more crucially, its tarnishes are differently perceived among corporate publics.

In a 2015 *Wall Street Journal* interview, Lori Morettini, vice president of Humboldt Merchant Services—which at the time processed an estimated half of online adult industry's credit card transactions totaling a billion USD annually—identified reputational liability of being outed as an aide to pornographers as their primary risk involved. The main financial risk, again, had to do with paybacks, as in customers disputing the charges made: 'If you snuck off to the dry cleaner and your wife saw that on your charge she's going to be happy you did your own laundry, but if the credit card statement comes with an adult merchant on it, you are going to say it's fraud.'[22] Here, porn site membership subscriptions, and the masturbatory activities they imply, are framed as inconvenient in terms of heterosexual matrimonial accord—the risk not involving the business practices but being identified with the customer. Paybacks in porn consumption are, indeed, an issue, them being fourfold to other online purchases.[23] Swartz associates paybacks with 'a matryoshka doll of rules' connected to predicting high-risk customers: some of these are set by banks, others by credit card companies and PSPs, and many simply carry down:

> *Transactions that would be considered "high risk" in the market model are simply banned. This is because PSPs access acquiring banks as master merchants, and in order to qualify for the lowest rates, PSPs must guarantee that all the transactions they conduct will be low risk for chargebacks. There are long-standing lists, provided by regulatory and industry groups, of high-risk merchant categories: time-shares, home-based charities, herbal remedies, and so on. Most payment start-ups simply take these lists and drop them into their terms of service as explicitly prohibited.*[24]

This elevated risk of paybacks gestures toward the in/conveniences associated with pornography as highly desired and routinely used, yet also as that which consumers do not wish to be

20 Frank Pasquale, *The Black Box Society: The Secret Algorithms That Control Money and Information*, Cambridge, MA: Harvard University Press, 2015, p. 6.

21 Gary Davies and Louella Miles, 'Reputation Management: Theory Versus Practice', *Corporate Reputation Review* 2 (1998): 16.

22 Gregory J. Millman, 'Managing Credit Card Risk for Sex Businesses', *The Wall Street Journal*, 18 February 2015, https://www.wsj.com/amp/articles/managing-credit-card-risk-for-sex-businesses-1424281370.

23 Swartz, *New Money*, p. 94.

24 Swartz, *New Money*, p. 93.

associated with. Such intermeshing of interest and shame, excitement and potential humiliation arguably speaks of affective dynamics wherein secrecy feeds fascination, and where the sense of the forbidden—of some norm being breached—invests the objects consumed with the frisson of a forbidden fruit. Porn then invites in/convenient proximities between the bodies displayed and those watching: bodies on the screen can press inconveniently close even as such closeness feeds sexual arousal and pleasure.[25] A persistent dynamic of in/convenience underpins the uses of porn, a genre historically defined through the regulation of its allegedly miasmic impact.[26] But this is, of course, one quickly flipping from convenience to its perceived opposite in ways indicating that these two may not be opposites.

Applying Berlant's discussion of inconveniences to platform ecologies helps in considering not merely the fundamental, friction-laden interdependencies between the (corporate, individual, algorithmic, and individual) actors involved, but also in accounting for the strained instability of these interrelations owing to their public nature. In order to operate successfully, porn, webcam, and content subscription sites, as well as individual entrepreneurs, are dependent on myriad actors for whom such relations present an inconvenience. This was never a level playing ground.

Enter the Platforms

Launched in 2007, Pornhub was among the first porn video aggregators sites emulating the operating principles of YouTube (est. 2005) while trading in content banned in its content policy. Tube sites are pornographers by proxy in not producing the videos they stream (although Pornhub's owner, currently known as Aylo, has bought up several production studios that financially suffered due to the piracy affected by tube sites). As corporate players, these distribution and advertising platforms have by and large replaced the more independent-yet-networked model of porn distribution comprised of individual sites and partnerships between sites hosted on diverse servers throughout the 1990s, and slightly beyond. Whereas twenty years ago users would click from one site to another (web rings being a thing) or make use of search engines to find compelling content, they are currently more likely to search within a chosen tube platform.

Nick Srnicek defines platforms as 'digital infrastructures that enable two or more groups to interact': as intermediaries, they bring together 'customers, advertisers, service providers, producers, suppliers, and even physical objects'.[27] Such ability to link actors and markets, as well as to constrain the forms and exchanges occurring between them, has been conceptualized as platform power.[28] Platforms are further characterized by what Srnicek identifies as 'network effects': centralizations on hubs with high volumes of user traffic. A good social media site, for example, is one with many users (think Facebook, Instagram, or TikTok) just as

25 For an extended discussion, see Susanna Paasonen, *Carnal Resonance: Affect and Online Pornography*, Cambridge, MA: The MIT Press, 2011.
26 Kendrick, *The Secret Museum.*
27 Nick Srnicek, *Platform Capitalism*, Cambridge, UK: Polity, 2016, p. 43.
28 Katrin Tiidenberg, 'Sex, Power and Platform Governance', *Porn Studies* 8.4 (2021): 383.

a good search engine is one honed through massive scales of queries (think Google), and a good porn site is one offering a vast range of content (think Pornhub), so that volume breeds volume and mass feeds mass. And since 'more users beget more users', this cycle 'leads to platforms having a natural tendency towards monopolisation'.[29]

As centralized distribution platforms, porn tube sites offer the promise of convenience. For users, this promise is one of abundant content to choose from; for content producers, vast volumes of potential consumers. That the actual deal is less convenient for creators with limited means to monetize their videos, and for independent sites to compete with hubs is, of course, a different matter. And while the hubs of online porn may not be convenient customers for PSPs, they hold a different kind of sway in having access to these infrastructures from which creators themselves are routinely excluded.[30] This development has been accelerated by the passing of the US SESTA-FOSTA law packages in 2018 which makes service providers liable for the sexual content that their users publish. Yet it cannot be reduced to it.

Advocated for by the Christian right in alliance with feminist anti-pornography activists, SESTA-FOSTA has hurt sex workers in particular while also having detrimental effects on sexual and gender minorities and the sexual rights of social media users internationally.[31] Ostensibly set up to curb sex trafficking, these bills have in practice targeted online porn and sex work, and impacted the possibilities of social media users to share sexual content well beyond the realm of commercial sex—hence Tumblr's 2018 decision to ban all nudity and sexual content, or Meta's gradually tightened content policies.[32]

The inconvenience of sex workers, porn, and porn consumers for financial infrastructures is underpinned by a mode of pre-emption—of premeditation concerning normative imaginaries. As Katrin Tiidenberg points out, 'sex has an ambivalent relationship with consumer capitalism, and thus also platform capitalism, wherein sanitized versions are used to manipulate user attention, yet many lived, diverse versions of sex are rejected for their assumed lack of appeal for advertisers'.[33] Just as social media platforms have the tendency to over- rather than under-moderate sexual content out of concern for offending users and advertisers (this, post SESTA-FOSTA, entailing potential legal liability), PSPs are much more likely to opt for conservative rather than liberal policies pertaining to the monetization of said content; this is also articulated as an ethical choice pertaining to corporate values.

Deplatforming Pornhub

Concerns over corporate reputation are very much at the heart of Pornhub's financial deplat-

29 Srnicek, *Platform Capitalism*, p. 45.
30 Swartz, *New Money*, p. 95.
31 Danielle Blunt and Ariel Wolf, 'Erased: The Impact of FOSTA-SESTA & The Removal of Backpage', *Hacking//Hustling*, 2020, https://hackinghustling.org/erased-the-impact-of-fosta-sesta-2020/.
32 Melissa Gira Grant, 'Nick Kristof and the Holy War on Pornhub', *The New Republic*, 10 December 2020, https://newrepublic.com/article/160488/nick-kristof-holy-war-pornhub; Tiidenberg, 'Sex, Power and Platform Governance'.
33 Tiidenberg, 'Sex, Power and Platform Governance', 389.

forming in December 2020, following the publication of Nicholas Kristof's emotional *New York Times* opinion piece, 'The Children of Pornhub'. Setting out to reveal the dark side of the platform, Kristof dramatically claimed that Pornhub, the then-globally leading porn video aggregator site, the traffic of which had continued to increase during COVID-19 lockdowns, was monetizing 'child rapes, revenge pornography, spy cam videos of women showering, racist and misogynist content, and footage of women being asphyxiated in plastic bags'.[34]

Kristof accused Visa and Mastercard for benefitting from rape and (child) abuse material, very publicly calling the companies out. The piece highlighted well-known problems in the platform's principles of operation; expansive piracy, lax moderation practices, and long response times pertaining to the removal of content. Much of this critique had been voiced by sex workers, yet it was Kristof who became heard. As an act of reputation management, Pornhub suspended access to nine million videos—the majority of its content—uploaded from unverified users accounts. This had little effect on Visa and Mastercard which, along with the ISO PayPal, discontinued their service with Aylo (then MindGeek) sites, causing a dramatic rupture in the income of content creators reliant on the platforms (the ban was later revoked for platforms catering studio content). As intermediaries, Aylo and PSPs build their brands through relational and reputational labor involving promises of smooth and glitch-free operability, professionalism, and efficiency. Before the company's renaming/rebranding, MindGeek's website did not mention its business being connected to porn but rather promoted itself as a lucrative, responsible tech employer specialized in running and hosting computational and architectural platforms.

As Melissa Shira Grant points out in her critique of Kristof's 'crusade', his essay promoted the efforts of Traffickinghub, a campaign run by a religious US right-wing organization aiming at 'the abolition of the sex trade, including prostitution and porn, by means of the criminal law'.[35] Kristof's piece strategically targeted corporate reputations—as relational, ephemeral, and contingent as they are—in order to delimit the possibilities of sex workers to monetize their content. His labelling of Pornhub as the engine driving the distribution of abusive and violent material directly undermined the platform's long-term self-curation as a lifestyle brand in an attempt to de-stigmatize porn use (while still monetizing porn's notoriety).[36] Aided by its myriad publicity stunts, Pornhub had grown into a dominant enough player to stand as a shorthand for online porn in general. Exemplifying Srnicek's point about networked effects, its high visibility fed further popularity such that Pornhub's annual volumes of visitors grew steadily up until Kristof's piece was published. Visibility then equally fed vulnerability: for had Pornhub not gained a symbolic status as *the* hub within a centralized porn platform economy, it would have been less likely a target for such a campaign.

34 Nicholas Kristof, 'The Children of Pornhub', *The New York Times*, 4 December 2020, https://www.nytimes.com/2020/12/04/opinion/sunday/pornhub-rape-trafficking.html.

35 Grant, 'Nick Kristof and the Holy War on Pornhub'.

36 Susanna Paasonen, Kylie Jarrett and Ben Light, *NSFW: Sex, Humor, and Risk in Social Media*, Cambridge, MA: The MIT Press, 2019; Silvia Rodeschini, 'New Standards of Respectability in Contemporary Pornography: Pornhub's Corporate Communication', *Porn Studies* 8.1 (2021): 76-91.

Following Tarleton Gillespie, the meaning of the notion of platform is fourfold: encompassing the 'computational, something to build upon and innovate from', the 'political, a place from which to speak and be heard', the 'figurative, in that the opportunity is an abstract promise as much as a practical one', and the architectural in being designed to afford certain kinds of interactions over others.[37] In a figurative sense, to have a platform means being heard, gaining an audience, and having potential impact. Conversely, to deplatform means to silence by removing access to be heard and seen. Within networked media, deplatforming entails removing user accounts or entire groups,[38] banning content categories and enforcing such policies through content moderation,[39] as well as by impacting the technical or financial infrastructures necessary for a platform's operability. The decision to demonetize Pornhub obviously exemplified deplatforming in the last sense. Without access to PSPs, Aylo has been cut off from the financial infrastructures that its success had considerably fed, and which had enabled its thriving. Since Aylo trades in user data, this has however not resulted in its going under.[40]

Berlant discusses 'the inconvenience paradox of dependency' as one of 'needing people or a situation and hating to have that need'.[41] This paradox cuts through the entanglements of payment infrastructures and online porn, becoming manifest in moments of rupture when the latter are simply cut off as unwanted, so that monetary circulation (and accumulation) between subscribers, platforms, and creators comes to an abrupt halt. It can then be argued that, as persistent friction, the inconvenience paradox has led to the casting of porn creators as disposable vis-à-vis financial infrastructures as the notion of 'high-risk customer' has shifted from a label indicating higher processing fees to just being deplatformed. Following Berlant, this has to do with how perceived inconvenience (be it imaginary, potential, or actual) intensifies to the degree of representing a threat to corporate existence, as an unbearable thing to be done away with as an affective operation of moral sanitization.[42]

Disposable ones

The logic of platformed disposability of sex workers echoes the one casting them as 'expendable, disposable, corruptible and untrustworthy' in law enforcement. This suggests that they are seen to lack proper agency due to the improper nature of their enterprise, and therefore

37 Tarleton Gillespie, 'The Politics of "Platforms"', *New Media & Society* 12.3 (2010): 352.
38 Richard Rogers, 'Deplatforming: Following Extreme Internet Celebrities to Telegram and Alternative Social Media', *European Journal of Communication* 35.3 (2020): 213-229.
39 Paul Byron, '"How Could You Write Your Name Below That?" The Queer Life and Death of Tumblr', *Porn Studies* 6.3 (2019): 336-349; Katrin Tiidenberg, 'Playground in Memoriam: Missing the Pleasures of NSFW Tumblr', *Porn Studies* 6.3 (2019): 363-371.
40 Elena Maris, Timothy Libert, and Jennifer R. Henrichsen, 'Tracking Sex: The Implications of Widespread Sexual Data Leakage and Tracking on Porn Websites', *New Media & Society* 22.11 (2021): 2018-2038; Ilir Rama et al., 'The Platformization of Gender and Sexual Identities: An Algorithmic Analysis of Pornhub', *Porn Studies* 10.2 (2023): 154-173; Rebecca Saunders, 'Sex Tech, Sexual Data and Materiality,' *Porn Studies* 10.2 (2023): 120-134.
41 Berlant, *On the Inconvenience*, p. 36.
42 Berlant, *On the Inconvenience*, p. 152.

disabling their income is in fact *the right thing to do*.[43] Such disposability became explicit when OnlyFans declared a ban on sexually explicit content in 2021—the very stuff that had made the platform's soaring success in the course of COVID-19 lockdowns and the influx of Pornhub's creators onto the site—in order to 'ensure the long-term sustainability of our platform'.[44] The novel policy, for which the CEO squarely blamed Bank of New York Mellon, Metro Bank, and JPMorgan Chase flagging and rejecting payments, was reversed within days after content creators rightly pointed out the unfairness of this all; the platform's success was, after all, owed directly to their labor.[45]

The decision to implement the policy without communicating with sexual content creators further aggravated a sense of injustice caused by the platform's long-term unwillingness to promote their visibility while very much profiting from their popularity. Even as the brand of OnlyFans had at this point grown inseparable from pornography, the company operated with the premise that this was not the case or that, at the very least, association with commercial sex ultimately formed an inconvenience. I suggest that this incident reads as something of a *mise-en-abyme* of platformed online pornography involving both acute financial incentives and the much more opaque casting of sex workers as inconvenient due to their perceived 'negative social value'.[46]

Both anti-pornography feminism and Marxist critiques of sex work identify it as alienating in turning individuals and their inalienable aspects into commodities, so that the workers in this realm reify themselves.[47] Reification, on Georg Lukács's terms, involves people becoming thing-like (and, conversely, things gaining degrees of liveness)—a line of argumentation well aligned with feminist critiques of pornography as a system of objectification.[48] If sex work is not necessarily acknowledged as work, the same applies to novel vocations such as social media influencing reliant on self-presentation in the service of commercial partnerships within economic structures impossible for the workers to affect, to the point that it may be difficult to be financially compensated.[49] The gendered nature of both occupations plays a role in casting feminized work as lesser-than—and maybe as not labor at all. In the case of sex work, the boundary between work and non-work becomes drawn as a moral one (in that one should

43 Zahra Stardust et al., '"I Wouldn't Call the Cops if I Was Being Bashed to Death": Sex Work, Whore Stigma and the Criminal Legal System,' *International Journal for Crime, Justice and Social Democracy* 10.3 (2021): 144.

44 Lucas Shaw, 'OnlyFans to Bar Sexual Videos Starting in October', *Bloomberg*, 19 August 2021, https://www.bloomberg.com/news/articles/2021-08-19/onlyfans-to-block-sexually-explicit-videos-starting-in-october.

45 Eloise Barry, 'Why OnlyFans Suddenly Reversed its Decision to Ban Sexual Content', *Time*, August 26 2021, https://time.com/6092947/onlyfans-sexual-content-ban; Jacob Bernstein, 'OnlyFans Reverses its Decision to Ban Explicit Content,' *The New York Times*, 25 August 2021, https://www.nytimes.com/2021/08/25/style/onlyfans-ban-reversed.html; Rébecca Franco, '"Controlling the Keys to the Golden City": The Payment Ecosystem and the Regulation of User-Generated Porn Platforms', forthcoming.

46 Berlant, *On the Inconvenience*, p. 85.

47 Kylie Jarrett, *Digital Labor*, Oxford: Polity, 2022, p. 134.

48 Susanna Paasonen et al., *Objectification: On the Difference Between Sex and Sexism*, London: Routledge, 2020, pp. 7-8.

49 Jarrett, *Digital Labor*, pp. 46, 181.

arguably not be paid for such things, independent of the work's legal status), whether the line of argumentation is a political one, one steeped in religious belief, or just kind of a gut feeling.

Arguing against broad applications of the notion of commodification in connection with digital labor, Kylie Jarrett proposes the concept of 'assetization' for describing how 'a worker who is marketing their own assets is not selling their labor-power to a platform to do with as it wills but opening those assets to a valuation by the marketplace' so that this value 'cannot be entirely produced or captured by the enterprise that exploits it' but remains bound up with the worker's subjectivity.[50] This more context-sensitive approach to platform labor helps in separating tactical self-commodification from alienation and, in so doing, resisting the kind of exceptionalism that sex work gets treated with, both on- and off-platform. Following this line of thought, financial deplatforming targeting the infrastructures of assetization makes evident the fragile agency of pretty much all platform laborers, both individually and collectively, within the black box societies that Pasquale addresses.

Porn and other sexual media are consumed on mass scales: they are far from niche as media content or fields of labor, even as their popularity does not shield them from on-platform demonetization. In reference to critiques of data capitalism eschewing governmental regulation reliant on the principles of democracy,[51] the power of payment infrastructures to dictate their own terms is detached from the legal frameworks that they need to comply with. This basically points to their power to delimit possible realms of assetization, occupational possibilities, and the commodities that people can purchase. And, given the global reach of payment infrastructures, this applies to merchants and consumers globally, independent of the legal status of sex work in specific regions. Just as social media platforms govern the allowed forms of sociality by regulating sexual communication, payment infrastructures operate as moral actors casting sexual content outside the loops of monetization as dirty-dirty-dirty. As Tiidenberg argues, platform power is 'achieved through territorialization and resource control that comes from developing an infrastructure and locking a population into it via division of labour, socialization and positioning the infrastructure as a higher good'.[52] It just as well means locking a population out.

Tenacious Inconveniences

It can be argued that the limits of Berlant's discussion of inconvenience lie in its broadness, the notion being capacious enough to accommodate anything from minor irritations to ambiguous desires, rape, and murder—or that which they discuss as the unbearable. The inconveniences of having a clandestine lover, discriminating against employees, and mauling racialized others are rather distinct; the consequences for those being thus cast as inconvenient remain similarly specific. The inconvenience for a banker being taunted for trading with pornographers and the acute disaster for a sex worker being cut off from financial

50 Jarrett, *Digital Labor*, pp. 161.

51 Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for the Future at the New Frontier of Power*. London: Profile Books, 2019; Pasquale, *The Black Box Society*, p. 6.

52 Tiidenberg, 'Sex, Power and Platform Governance', p. 383.

infrastructures are equally incommensurable, yet, following Berlant, intimately entangled in terms of affective economies.

Writing on the sliding scale from passing annoyances to the destruction of life, Berlant is making an argument precisely for their inseparability from the basic inconvenience of nonsovereignty—of resenting the attachments that make us, so that infrastructural relations are also nonrelations, or can smoothly switch into ones with an aggressive edge.[53] Such volatile switching off of relation very much characterizes the precarious position of sexual platforms and their content creators in platform ecologies. If the 'unbearable is the limit case of the inconvenience of other people, where *people* stands in for any object that one needs for the world to proceed, and where *inconvenience* stands for the fact that attachment is never easy', then the increasingly vocal casting of porn creators as inconvenient has pretty much resulted in their demonetization as unbearable.[54]

How commercial sex gets classified as inconvenient/unbearable as an issue of corporate ethics finds support from a cultural imaginary associating porn with a 'scenario of danger and rescue, a little perennial melodrama in which, though new players have replaced old, the parts remain much as they were first written' in the 19th century.[55] This affective imaginary represents more than a historical specter hovering over contemporary exchanges, given the speed and impact with which its affective appeal gets activated—recall Kristof's piece. Independent of the realities of sex work, melodramatic divides between the helpless and their oppressors hold longevity. Payment infrastructures then further contribute to such a dynamic of helplessness by cutting off sex workers already stigmatized for their occupation.

That a melodramatic imaginary of cruel consequence plays out vis-à-vis the assetization of sex work online does not mean that this will invariably be the case, or that the demonetization of sex is bound to grow ever tighter in spiraling fashion. Both Tumblr's 2022 decision to allow for certain kinds of sexual content on the platform and the Meta oversight board's 2022 ruling to revise the company's content policies connected to nudity and sex hint at other directions, even as their outcomes remain opaque and rather useless to sex workers. Despite the uniformity implicated by the notion of a platform, it entails heterogenous interests, values, or missions, so that frictions and conflicts are constant as well as internal.[56] And since platform economies and infrastructures operate at cross-continental scales, articulated values come across as much less obvious for those not sharing the same cultural context, and are potentially open to contestation.

Although the role of pornography in web economies is much less pronounced than in the 1990s, it no longer being a necessary inconvenience, the shapes and forms of online sexual content continue to multiply. As do their forms of monetization and assetization—this being by no means a declining economy—so that its total effacement from payment infrastructures

53 Berlant, *On the Inconvenience*, p. 152.
54 Berlant, *On the Inconvenience*, p. 170, emphasis in the original.
55 Kendrick, *The Secret Museum*, p. xiii.
56 Taina Bucher, *Facebook*, Oxford: Polity, 2021.

remains impossible.

While Berlant outlines in/convenience as a contingent dynamic where the one blends into the other, infrastructural imaginaries underpinning the terms of PSPs operate with a binary logic of either/or, this or that—not both/and, or maybe. Grey zones of ambiguity do not fare well in algorithmic logics where the inconvenience—or the perceived inappropriateness—of merchants can be automatically calculated on the basis of the data gathered and where association with sex works lands them in the category of 'no-no'. In other words, Berlant is not a helpful guide to understanding the logic of corporate terms of use just here. But, as I have suggested, their take on inconvenience helps in articulating default co-dependencies and attachments between human and nonhuman (institutional, algorithmic, representational) bodies within platform economies which, in their ambiguity, are simultaneously matters of convenience, so that the two can be seen as two sides of the same coin.

In/convenience communicates frictions as ongoing. Following Berlant, while inconveniences cannot be resolved, they can be reframed and rethought as per their objects: the casting of things or people as inconvenient is not, then, a one-way street but rather something open to affective reworking. Despite how depressing the contemporary moment may seem in terms of platformed infrastructural injustice, this line of thinking offers ways for considering future horizons for sexual content creation as not dictated by the moral corporate imaginaries that they are currently disciplined by. As feeble as the promise may seem, a sense of hope is crucial for critical work, and we cannot foresee the future infrastructural actors at play. Capitalists do, after all, like money.

Acknowledgements

Research for this chapter has been supported by the Strategic Research Council at the Research Council of Finland, grant number 352520. (*Intimacy in Data-Driven Culture*).

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THEORIZING 'ANTI-CONTENT': ON SLEEP APPS AND HORIZONTAL MEDIA

NETA ALEXANDER

Introduction: The Soporific Media Industry

Born with a facial paralysis, I have never been able to fully shut my right eye. To fall asleep, I have to use an eye mask, blackout blinds, or other improvised tools and techniques to create an entirely darkened environment. Over the years, I have used furniture, towels, pillows, t-shirts, houseplants, books, and, less successfully, pets to block the sunlight while traveling. Large windows freak me out, and they are the first thing I notice when entering a bedroom. My level of fatigue, or, to borrow a popular concept among disability scholars, the number of 'spoons,' or energy reserves, I can use on a given day, is directly related to my ability to sleep in a dark or windowless room.[1] Years before 'sleep hygiene' became a self-care industry of endless books, listicles, and products, I removed every electronic device from my surroundings before going to bed.[2]

My sleep habits, however, are increasingly difficult to maintain. Streaming platforms like Netflix, Amazon, HBO Max, and YouTube compete for my attention by declaring a war on sleep.[3] At the same time, technology companies like Apple enthusiastically design and manufacture new products promising to mitigate the user's exposure to blue light, which is correlated with sleep disturbances.[4] Features like 'dark modes' and 'night modes' offer users more control over the color and brightness of their display, while normalizing the idea that users should take their personal electronics to bed in order to wind down and fall asleep.

As it is hindered by ubiquitous screens, doomscrooling, and remote work, sleep demonstrates how technology companies develop new products promising to solve the problems created by

1 For an overview of spoon theory and 'spoonies', see Christine Miserandino, 'The Spoon Theory Written by Christine Miserandino', *But You Don't Look Sick*, 25 April 2013, https://butyoudontlooksick.com/articles/written-by-christine/the-spoon-theory/; Jonathan Sterne, *Diminished Faculties: A Political Phenomenology of Impairment,* Durham: Duke University Press, 2022, pp. 163-172.

2 One recent example of the rising popularity of sleep hygiene is Arianna Huffington's *New York Times* bestseller. See Arianna Huffington, *The Sleep Revolution: Transforming Your Life, One Night at a Time*, New York: Harmony Books, 2016.

3 In 2017, Netflix co-founder Reed Hastings famously stated that the company's most fierce competitor is sleep: 'You get a show or a movie you're really dying to watch, and you end up staying up late at night, so we actually compete with sleep—and we're winning!'. Qtd. in Rina Raphael, 'Netflix CEO Reed Hastings: "Sleep Is Our Competition"', *Fast Company*, 6 November 2017, https://www.fastcompany.com/40491939/netflix-ceo-reed-hastings-sleep-is-our-competition/.

4 For an historical overview of how tech companies monetize concerns around blue light, see Dylan Mulvin, 'Media Prophylaxis: Night Modes and the Politics of Preventing Harm', *Information & Culture* 53.2 (2018): 175-202.

their current products. As such, I define *soporific media* as any medium or feature designed to induce sleep, including noise-canceling sleep headphones, sleep trackers, ASMR videos, the streaming platform Napflix, sleep apps like Calm and Slumber, and endless other products. Soporific features like Apple's Night Shift or the sleep app Calm assume a fatigued media user relying on their electronics to fall asleep.

Exploring the soporific media industry as both a poison and a cure, I follow the logic of "technopharmacology," which has been coined and developed by Joshua Neves, Aleena Chia, Susanna Paasonen, and Ravi Sundaram to "expand media theoretical inquiry by attending to the biological, neurological and pharmacological dimensions of media."[5] Soporific products, I argue, reveal a tension between a promise to cure prevalent sleep disturbances and medical conditions like insomnia, and a demand for premium subscriptions and constant surveillance. Blurring the lines "between big data and big pharma," these apps and features monetize the quest for convenience.[6] The tech-based cocoons they offer deem it necessary to transition from wakefulness to sleep by eliminating inconvenient cognitive, emotional, or optical factors such as rumination, anxiety, noise, or daylight. By drawing on a medical discourse touting the benefits of destressing and rest, such products have become conducive to the user's sense of comfort and well-being.

As an ever growing, billion-dollar industry, soporific media is key to theorizing the transition from sleep as 'the great human affronts to the voraciousness of contemporary capitalism' to sleep as a site of value production.[7] Sleep, Jonathan Crary contends, is passive, non-productive, and composed of empty time. It 'requires periodic disengagement from networks and devices in order to enter a state of inactivity and uselessness. It is a form of time that leads us elsewhere than to the things we own or are told we need.'[8] This description, however, fails to account for the myriad ways in which sleep has become labor. The sleeping body has been studied and monetized by pharmaceutical companies since the rise of 'sleep labs' in the 1970s, while, more recently, the domestic sphere has been recast into a makeshift sleep laboratory with the help of WIFI-connected technologies.[9] Sleeping bodies are increasingly connected to headphones, smartphones, and tracking devices that turn circadian rhythms into data streams sold to third-party companies. An early ad for the wearable tracker Fitbit culminated with a close-up of a woman sleeping with the device on her hand, promising to optimize 'even inactivity'.[10] Asleep or awake, profit can be made.

5 Joshua Neves, Aleena Chia, Susanna Paasonen, and Ravi Sundaram, *Technopharmacology*, Minneapolis: University of Minnesota Press, 2022, p. x.

6 Neves et. al, *Technopharmacology*, p. x.

7 For an analysis of the rise of twenty-four-seven capitalism, see Jonathan Crary, *24/7: Late Capitalism and the Ends of Sleep*, New York: Verso Books, 2013, p. 10.

8 Crary, *24/7*, p. 126.

9 For an overview of the rise of sleep labs in the 1970s and the medicalization of sleep, see Kenton Kroker, *The Sleep of Others*, Toronto: University of Toronto Press, 2007.

10 Natasha Dow Schüll, 'Data for Life: Wearable Technology and the Design of Self-Care', *BioSocieties* 11.3 (March 2016): 6.

The handheld digital interface is a key locus to study the monetization of sleep as, unlike the sedentary subject of the movie theater, it is horizontal-friendly: Users are encouraged to take their electronics to bed, place them on or next to their bodies, and fall asleep.[11] I explore the shift from vertical and sedentary media to what I call *horizontal media*: devices, apps, and interfaces strategically designed to be used while lying down. We need a theory of horizontal media for three reasons. First, much of media theory is invested in studying 'seated spectatorial positions' by focusing on theater, film, and television, while ignoring 'folded', injured or bedridden embodiments.[12] Second, existing accounts of ideal bodies and viewing positions fail to isolate technologies that habituate the user to shift from one posture to another. Third, so many of us consume videos, websites, and audio while prone, creating a need for a critical account that asks not just what content the user consumes, but also what bodily position is assumed by the interface through which the content is accessed.

Horizontal media is also a key site to theorizing the promise and perils of convenience and cure. Sufficient, daily rest is crucial for the very survival of the user, yet it can only be achieved under specific conditions: a darkened room, a comfortable bed, and lack of screens and stimulation. Here lies the paradox at the center of this chapter: while the services often used in bed, from Netflix to Calm, tout convenience as a form of personalized, user-controlled content, they might also produce inconvenience by overstimulating the user and preventing her from falling asleep.

Keep Calm and Rewrite History

In 2011, American web designer Alex Tew built a website called donothingfor2minutes.com, on which a user can stare at a screen and listen to waves for two minutes as long as they didn't touch their mouse (see figure no. 1).[13] If, however, the user succumbs to their desire to click, refresh, or type, the black font inviting them to relax turns into a red warning sign stating 'try again', and the two-minute countdown begins anew. At the end of two minutes, an email prompt appears, asking those who master the challenge to sign up. In the website's first two weeks, over one hundred thousand people did so, and a few months later Tew co-funded Calm.com.[14]

Over a decade later, Calm has grown into one of the most popular sleep apps in the world, valued at over $2 billion. In company parlance, the app is designed 'to help you manage stress, sleep better and live a happier, healthier life' by offering 'hundreds of hours of original audio content available in seven languages'. Once a subscriber downloads the app and pays the annual fee, they can engage with an ever-changing library of 'sleep stories', 'meditations',

11 For an analysis of sleep as crucial for theories of spectatorship and media use, see Jean Ma, *At the Edges of Sleep: Moving Images and Somnolent Spectators,* Berkeley: University of California Press, 2022.

12 For a theory of the folded body of avid computer users, see Michele White, *The Body and the Screen: Theories of Internet Spectatorship*, Cambridge: MIT Press, 2006.

13 David Curry, 'Calm Revenue and Usage Statistics (2022)', *Business of Apps*, 1 July 2022, https://www.businessofapps.com/data/calm-statistics/.

14 Curry, 'Calm Revenue and Usage Statistics (2022)'.

'soundscapes', and 'playlists'. More than one hundred million users now have Calm on their smartphones, after downloads surged by a third in the coronavirus pandemic's early days.[15] New users are now recruited via their employers. Through the company's Calm Business program, ten million American workers have free access to the app as a mental health benefit.[16] The company's growth, both in terms of venture capital and paying subscribers, has pushed it to become a wellness empire, with an HBO television show and an ever-expanding line of products, including an $80 meditation cushion and a $272 weighted blanket.[17] Calling itself 'the Nike of the mind', the app rewards users for extending a meditation or sleep 'streak' every time they listen to content. Through these design decisions, Calm makes the pursuit of better sleep a competitive and paradoxically stressful endeavor. This can lead to an obsessive quest for optimal sleep, a condition called 'orthosomnia' that was identified in 2017 and attributed to the use of sleep trackers and apps.[18]

Figure 1: A screenshot of the website donothingfor2minutes.com, inviting users to stare at a sunset and 'just relax' for two minutes, and featuring a countdown at the center of the screen (Source: screenshot taken by the author

For millions of users, Calm is a source of pleasure and convenience because it associates sleep with an intimate voice whispering into their ears, returning adults to the childhood ritual of the bedtime story. Since it was launched in early 2013, Calm's most popular content has

15 Annie Lowrey, 'The App that Monetized Doing Nothing', *Atlantic*, 4 June 2021, https://www.theatlantic.com/technology/archive/2021/06/do-meditation-apps-work/619046/.
16 Curry, 'Calm Revenue and Usage Statistics (2022)'.
17 Lowrey, 'The App that Monetized Doing Nothing'.
18 The term 'orthosomnia' was coined by researchers from Rush University Medical School and Northwestern University's Feinberg School of Medicine in a 2017 case study published in the *Journal of Clinical Sleep Medicine*. See Karen Zraick and Sarah Mervosh, 'That Sleep Tracker Could Make Your Insomnia Worse', *New York Times*, 13 June 2019, https://www.nytimes.com/2019/06/13/health/sleep-tracker-insomnia-orthosomnia.html.

been its 'sleep stories'.[19] *Dreaming with Frida* is a thirty-eight-minute sleep story pushed to new subscribers with a thumbnail consisting of a colorful portrait of the artist Frida Kahlo. The easily recognizable iconography includes the famous painter wearing a blue shirt and a hair ribbon made out of three pink roses. Her relaxed torso emerges from a jungle-like garden, with a yellow parrot on her left and a green butterfly to her right (see figure no. 2). As to be expected from an app designed to put users to sleep, this thumbnail projects tranquility and harmony between Frida—presented here only by her first name—and the natural world. The story, written by Paola Villegas Sourco and read by Mexican-American actress Emily Rios, is noteworthy for the ways it recasts the surrealist painter as a protagonist of a fairytale taking place in 1940s Mexico. The bedtime story introduces Kahlo as a fierce warrior who 'never apologized for who she was' and whose paintings explored recurring themes 'including her marriage, her chronic pain, and her love for Mexico'. The listener is then invited by Rios' soft voice to close their eyes, take a deep breath, and 'dream with Frida'. For the next half an hour, Rios walks us through an imaginary day in Kahlo's Casa Azul in Mexico City.

Rios briefly reminds her lethargic listeners that, at age forty, Kahlo suffered from injuries that kept her mostly at home, and 'she often painted while lying in bed'. But today, she continues, Kahlo is filled with ambition and desire to step outside and paint. Talking slowly—in an app that does not enable its users to change the playback speed—Rios takes ample time to describe Kahlo's delight in feeding exotic animals, including monkeys and parrots, and walking around her beautiful house. The 'sleep story' glosses over any detail that might seems inconvenient, and therefor potentially harmful, to the listener's gradual transformation into the dream world. The years-long torturous relationship between Kahlo and painter Diego Rivera, for example, is succinctly described as 'their love, sometimes stormy, runs deep'. The result is a sentimental depiction of an artist who bravely challenged rooted conceptions of the disabled female body that only mentions her injury and pain as a vague aside—'her imagination conquered all'. By the time Kahlo selects a few papayas from 'her favorite tree' and gazes at 'a flock of butterflies' that gently land on her shoulder just as the earth 'wraps around her like a soft embrace', the listener should be already fast asleep. 'She has everything she needs within these walls', Rios whispers, painting an image of a five-star resort, rather than a woman confined to her bed for years following a spine injury and a series of complicated surgeries. The story ends when Kahlo leaves the house to purchase a new brush and, upon returning to her studio, is inspired to paint one of her most famous self-portraits, *Roots* (1943), depicting her wearing an orange dress with vines growing out of her body into the ground. As described by Rios, this painting is a celebration of nourishment and hope, two recurring concepts in the sleep stories lexicon.

19 Calm's most popular single piece of content is *Dream with Me*, a story read by Harry Styles, the former One Direction singer, and a Calm investor. When it was released in July 2021, overwhelming traffic crashed the app. See Lowrey, 'The App that Monetized Doing Nothing'.

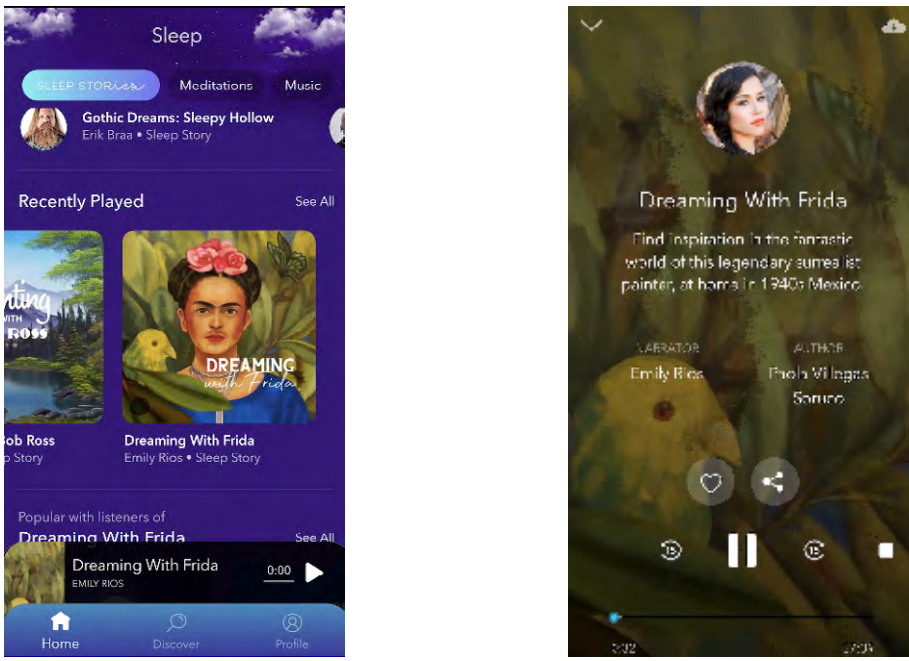

Figure 2: A screenshot from the Calm app depicting a thumbnail of Dreaming with Frida (left), and a screenshot of the credit page of the same sleep story (right). Source: screenshots taken by the author.

With its close attention to colors, textures, flavors, flowers, and natural rhythms, Calm's sleep stories provide relaxing soundscapes designed to function as white noise and shield the listener from bedtime anxiety and rumination. It turns Kahlo's many struggles and inconveniences into an audioscape offering nothing but comfort and relaxation, slowly luring the user to sleep. Employing techniques such soft, slow voices and clean, simple designs, sleep and meditation apps offer a horizontal media experience that has grown in popularity over the past decade.

Dreaming with Frida repackages the lifelong health struggles of a pioneering disabled Mexican artist as a soothing lullaby for overworked phone users. Yet, I argue that *the content of horizontal media is less important than its form*. In his analysis of Apple's Night Shift, Dylan Mulvin defines 'media prophylactics' as 'the techniques, technologies, and design choices that are made on behalf of or by users to preempt the ill effects (whether imagined or concrete) of media use, participation, or environmental exposure'.[20] He goes on to distinguish between media prophylactics that are 'content agnostic', including earplugs, air purifiers, and night modes, and those that are 'content partisan', like safe search algorithms or the use of commercial content moderators in platform governance.[21] These tactics, as different as they may seem, are all designed and marketed to filter part of the user's sensory environment:

20 Mulvin, 'Media Prophylaxis', p. 176.
21 Mulvin, 'Media Prophylaxis', p. 176.

noise, smell, light, or graphic content. Theirs is a promise of a world devoid of inconvenience; a world in which the user is in full control of her surroundings.

The idea that Calm and other sleep apps are content agnostic might come as a surprise, considering the costs of recruiting Hollywood stars, copyrighting beloved audio segments from works like *The Joy of Painting*, and marketing their premium subscriptions by touting an ever-growing content library. Yet, users are unlikely to listen to *Dreaming with Frida* because they are eager to learn more about the history of modern art. In fact, if they stay awake long enough to discover that the day described by Rios led to the creation of one of Kahlo's most celebrated portraits, then the app failed to achieve its stated goal of putting them to sleep. Indeed, once Rios is done reciting this tale, the app disappointedly asks, 'Still Awake?', against a dark-blue background, immediately offering the insomniac listener another sleep story. A sleep app that draws too much attention to its content might keep its users awake out of interest, curiosity, or suspense. The imaginary user of Calm is not the fully awake universal spectator of apparatus theory; rather, it is the 'somnolent' or 'drowsy' spectator-turned-auditor who liberates herself 'from the directives of the text and its system of meaning'.[22] The app's users are likely to be lying down rather than sitting, and as such they differ from the sedentary moviegoer who purchased a ticket in the hopes of being immersed in a fictional world.

The movie theater, in fact, is far from an ideal dreamscape: it requires sedentary rather than horizontal engagement, with changing light, sound, and exposure to the bodily movements, whispers, and smells of strangers. Even when achieved, the spectator's sleep is limited by the length of the film. Unlike the bed, the theater's architecture and design have historically privileged an able-bodied spectator, preventing wheelchair users and people with above-average height and weight from comfortably joining this communal ritual.[23] That many movie theaters are trying to lure back ticket buyers after the pandemic by installing reclining chairs tells the story of an industry desperate to replicate the standards of comfort and customization associated with domestic media consumption. More than ever, movie theaters might look and feel like luxury bedrooms, where the spectator is invited to watch a film in repose.

Yet the movie theater is not the bedroom as it is devoid of the sense of privacy and intimacy provided by one's bed. Sleep apps challenge the history of sedentary engagement with media in two ways: firstly, by replacing the prescribed vertical seated posture with the horizontal, and, secondly, by moving us away from the representational and aesthetic questions that

22 Bruno Guaraná, 'At the Edges of Sleep', *Film Quarterly* 76.2 (Winter 2022): 109.

23 Drive-ins, for example, were patented in the 1930s by an American named Richard Hollingshead, who created them 'as a solution for people unable to comfortably fit into smaller movie theater seats'. See 'The History of Drive-in Movie Theaters', *New York Film Academy,* 7 June 2017, https://www.nyfa.edu/student-resources/the-history-of-drive-in-movie-theaters-and-where-they-are-now/; wheelchair accommodations in movie theaters were only introduced in the United States as a result of the Americans with Disabilities Act, which was signed into law on July 26, 1990. However, in recent decades, seats for wheelchairs that once numbered five or six per theater have been cut to two or three, in order to make space for recliner-style seats and other incentives. See Kristen Lopez, 'How Movie Theaters Are Failing Viewers with Disabilities', *IGN,* 3 June 2018, https://www.ign.com/articles/2018/06/03/how-movie-theaters-are-failing-viewers-with-disabilities.

have come to dominate film theory. Instead of focusing on narrative structure, mise-en-scene, editing, pacing, soundtrack, and so forth, sleep apps can best be explored as 'anti-content'.[24] It is not the content of sleep apps' recordings that explains their immense success, but rather the sonic and affective affordances of their interface design. Embracing the inattentive user, what these apps offer is an ambient human voice strategically recorded to be listened to in a liminal state between wakefulness and sleep.

In an hailing review of Calm, *New York Times* columnist Amanda Hess recounts how she listened to the exact same recording every night for many weeks, falling asleep and developing a 'strangely intimate relationship' with the app's popular meditation guide, Tamara Levitt.[25] For Hess, Levitt's soft voice functions as a 'sound tranquilizer' crucial for her daily sleeping ritual. The fact that Hess listened to the same recording every night suggests a unique attachment to both the content and the narrator. Yet this repetition, which, over time, might become compulsive ('I tapped into Calm at night without thinking much about what I was doing', Hess writes) has more to do with Hess's familiarity with her smartphone, the app's interface, and Levitt's voice than with the recording itself. That Hess never bothers to describe the content of her chosen segment strengthens the idea that it is Calm's interface and voice-based library, rather than its stories, that convince millions to pay for subscriptions. As Hess concludes, 'Half of the programming is stuff designed to fall asleep to: If it's working, you don't hear it.'[26] Here it is the passive—or, even better, the snoring—user who is the imagined ideal of the app, rather than the active spectator of film theory. If it achieves its goal, only the first few minutes might be recalled by the user-turned-listener.

If earplugs filter unwanted noise, air purifiers filter unwanted smells, and night modes filter unwanted blue light, what do sleep apps filter? One possible answer is that they filter unwanted thoughts. It is often one's stream of consciousness that chases sleep away. Ruminations, to-do lists, and feelings such as abandonment, jealousy, and fear arise more frequently and intensely at nighttime because of a lack of distractions. To counteract them, Calm offers something to anchor one's attention. Drew Ackerman, the founder and host of the popular sleep podcast *Sleep with Me* and a self-described insomniac, explains that he launched his show in 2013 'to tame the vigilant, overactive "guardian" in the brain that feels it must stay awake to worry'.[27] Over one thousand episodes later, Ackerman told the *New York Times* that he finds listening to be therapeutic, as it prevents him from ruminating all night long.[28]

Despite the growing popularity of sleep podcasts and apps, these soporific tools are not as successful as they often claim. A research study analyzing 369 sleep apps available on Android phones and iPhones found that the majority of the apps failed to include components that have proved beneficial for those seeking to improve the quality, duration, and regularity

24 Amanda Hess, 'The App That Tucks Me in at Night', *New York Times,* 17 July 2019, https://www.nytimes.com/interactive/2019/07/17/arts/calm-app-sleep-meditation.html.
25 Hess, 'The App That Tucks Me in at Night'.
26 Hess, 'The App That Tucks Me in at Night'.
27 Qtd. in Pagan Kennedy, 'The Insomnia Machine', *New York Times*, 18 September 2016, https://www.nytimes.com/2016/09/18/opinion/Sunday/the-insomnia-machine.html.
28 Kennedy, 'The Insomnia Machine'.

of their sleep.[29] While researchers found that the apps were easy to navigate and use, they concluded that there is much room for improvement, as 'only a minority of the apps included features that support behavior change'.[30] Only four apps described habits that can interfere with sleep and worsen insomnia, such as drinking caffeine or alcohol before bedtime.

This is not to say that sleep and meditation apps do not offer benefits. When asked to reflect on their use of personal electronics during the many months of pandemic lockdown, my undergraduate students at Colgate University frequently mentioned how sleep apps helped them maintain a healthier routine when studying from home—anecdotal data supported by empirical studies.[31] A meta-analysis of over 1,500 peer-reviewed articles published from 2010 to 2022 concluded that '[e]xisting studies have proved the initial validation and efficiency of delivering sleep treatment by mobile apps; however, more research is needed to improve the performance of sleep apps and devise a way to utilize them as a therapy tool.'[32] Yet it is important to emphasize that sleep apps might be successful not because of their content libraries and endless loops of ocean waves, but thanks to how they encourage their users to shift from the sedentary use of media (bingeing Netflix, writing emails, working at their desk) to horizontal use consisting of mostly audio, limited visual cues, and dark, ad-free interfaces.

This shift from more familiar technologies of convenience such as television to an emerging category of convenient media specifically designed to enhance sleep might involve inconvenient moments of trying to find the perfect posture, temperature, sensation, and mindset. Sleep apps streamline and support this daily process by making it more seamless, and therefore less stressful, as users are invited to fall asleep while holding their beloved transitional object: the ultimate convenience tech known as the smartphone.

Sleep apps gently nudge users to lie down and be metaphorically tucked in by their electronic devices. This creates a very different relationship to the horizontal than that invoked by Kahlo's painful paintings. Kahlo's self-portraits, in many of which she is lying down, reject the association of horizontality with tranquility or sleep. In paintings such as the aforementioned *Roots* (1943) and *Without Hope* (1945), the artist's horizontal figure brings her closer to earth and the natural world, but also to death, sickness, pain, and paralysis. These paintings convey vulnerability, intimacy, and an injured female body in desperate need of rest.

If *Dreaming with Frida* can ease us into sleep by using ASMR effects like the gentle sound

29 Diana Yates, 'Study of Sleep Apps Finds Room for Improvement', *Illinois News Bureau*, 12 April 2017, https://news.illinois.edu/view/6367/486860.

30 Yates, 'Study of Sleep Apps Finds Room for Improvement'.

31 A 2019 study, for example, found that 'Calm is an effective modality to deliver mindfulness meditation in order to reduce stress and improve mindfulness and self-compassion in stressed college students'. See Jennifer Huberty et al., 'Efficacy of the Mindfulness Meditation Mobile App 'Calm' to Reduce Stress Among College Students: Randomized Controlled Trial', *JMIR Mhealth Uhealth* 7.6 (25 June 2019): e14273.

32 See Abdullah Al Mahmud, Jiahuan Wu, and Omar Mubin, 'A Scoping Review of Mobile Apps for Sleep Management: User Needs and Design Considerations', *Frontiers in Psychiatry*, 18 October 2022, https://www.frontiersin.org/articles/10.3389/fpsyt.2022.1037927/full.

of butterfly wings, *Without Hope* is a work of art chasing sleep away (see figure 3).[33] A visual nightmare, this oil painting was painted while Kahlo was bedridden after a failed operation intended to straighten her damaged spine with a bone graft and steel support. Because she lost her appetite during her recovery, she was force-fed through a funnel.[34] Drawing on these traumatic experiences, the back of the painting carries the following inscription: 'Not the least hope remains for me... everything moves in tune with what the belly contains'.[35]

Desperate, bedridden, and in constant pain, Kahlo painted a self-portrait in which a painter's easel hovers above her bed. Instead of a canvas, it 'suspends a gristly funnel delivering dead-eyed fish, plucked chicken, bloody shanks of meat and pendulous entrails, directly into Kahlo's mouth'.[36] According to art critic Reed Enger, each of the objects draws on Kahlo's ongoing struggle with sickness and surgeries confining her to bed, from her hospital bed during her post-surgery recovery in New York to the oddly-shaped easel created by her father to allow her to paint while bedridden. [37] The oversized funnel, Enger explains, was inspired by Alfonso Toro's engravings of the Spanish Inquisition's water torture from Kahlo's own copy of *La Familia Carvajal*.[38\]

Figure 3: Frida Kahlo, Without Hope, 1945, depicting the artist as she is lying in bed and being force-fed

33 For a study of ASMR affective economy of 'shiveries' and bodily sensations, see Joceline Andersen, 'Now You've Got the Shiveries: Affect, Intimacy, and the ASMR Whisper Community', *Television & New Media* 16.8 (1 December 2015): 683–700.

34 Reed Enger, 'Without Hope', *Obelisk Art History*, 30 July 2017, http://arthistoryproject.com/artists/frida-kahlo/without-hope/.

35 Enger, 'Without Hope'.

36 Enger, 'Without Hope'.

37 Enger, 'Without Hope'.

38 Enger, 'Without Hope'.

This horizontal portrait cannot be easily transformed into a Calm sleep story. The oil painting is a two-dimensional interface owing its existence to a simple hack: an easel that could be painted on while lying in bed. The result is disturbing, even shocking. It conjures longer histories of force-feeding and other forms of violence targeting hospitalized patients and incarcerated convicts, many of whom are female.[39] *Dreaming with Frida* replaces these personal and collective struggles with a soothing female voice and an infantilized depiction of Kahlo as a happily married woman in complete harmony with her natural environment. If Calm enhances the user's agency by gamifying and personalizing sleep, *Without Hope* depicts the excruciating pain of losing one's autonomy over one's body.

By depicting the very apparatus needed to create the painting—Kahlo's oddly-shaped easel—*Without Hope* draws attention to the labor and unique tools needed to sustain the creative act while bedridden. This makes the horizontal orientation of recumbent labor an important theme of this work. Calm's content creators, on the other hand, are heavily invested in masking the conditions under which they work. Levitt, one of Calm's most popular narrators, told Hess that for two years she 'regularly worked 12-hour days' to fulfill the growing demand for original content.[40] Much like Kahlo, Levitt's work requires an easel. When she records guided meditations or sleep stories for Calm, she uses 'a paisley-printed easel fitted with an iPad (for her script) and an iPod (for keeping time), and a footstool crowded with beverages'.[41] While Kahlo's father helped her to configure a scaffolding device aligning her injured body with her creative ambition, Levitt and Calm's other narrators are asked to align themselves with growing demand by using technological tools and nutritional support that override their need for rest and the limitations of the human vocal cords. Kahlo's embrace of the horizontal is a crip call to bend the domestic environment to meet the injured body instead of forcefully feeding it into health. Calm's sleep stories, on the other hand, provide mass-scale 'sound tranquilizers' that can help users meet the 24/7 relentless clock.

What happens when we center our analysis of soporific media on those who are either not allowed to, or are otherwise unable, to sleep? How can artists or web designers make visible or hearable the conditions of laboring bodies? And is it possible to develop a crip sleep app that holds the tensions between activity and passivity, as well as resistance and refusal, instead of deepening an unhealthy dependency on light-emitting electronics and mobile apps?

Reconfiguring #SelfCare

If Calm habituates users to take their smartphones to bed, the mobile app #SelfCare opts to improve sleep and ease anxiety by reconfiguring and de-automating the user's relationship with her screen. As such, it offers a crip alternative to the soporific media industry.

39 According to Reed Enger, 'Striking suffragettes were violently force fed in UK jails until the Prisoners Act of 1913, and in the U.S., activist Ethel Byrne was force-fed while jailed for campaigning to legalize birth control in 1917'. See Enger, 'Without Hope'.

40 Qtd. In Hess, 'The App That Tucks Me in at Night'.

41 Hess, 'The App That Tucks Me in at Night'.

Launched in 2018 by the Toronto-based studio *TRU LUV*, #SelfCare is a free app with no advertisements.[42] The app, which the studio calls a 'companion' to differentiate it from for-profit sleep and health apps, is intentionally simple. It consists of several short pastimes, among them: a slow breathing exercise, petting a cat by gently stroking the screen with one's fingers, or idly sorting a digital laundry basket. The homepage portrays a domestic scene familiar to any mobile user: a person lying in bed, tucked under a white blanket, with a single hand gently pulsing on the pillow while a cat lies on the left bottom of the bed (see figure 4). The bedroom, which is seen from a bird's eye view, is bright and minimally furnished with a white rug, a laundry basket, and two bedside chests with flowers, cards, and several other items. A smartphone is tossed on the left pillow, barely out of reach from the half-asleep, half-awake protagonist.

Figure 4: The homepage of the app #SelfCare (left), and a screenshot of a word game featuring the word 'insomnia' from the same app (right). Source: screenshots taken by the author.

While users can change the skin color of the sleeping protagonist via the settings menu, the default color is dark. This design decision differentiates #SelfCare from other products of the soporific media industry, which, as I explored elsewhere, assumes the average user is white and able-bodied.[43] The app's imaginary user, as described by its developers, is someone who

42 Kara Stone, 'Designing Self-Care Affect and Debility in #SelfCare', in Arno Görgen and Stefan Heinrich Simond (eds) *Krankheit in Digitalen Spielen: Interdisziplinäre Betrachtungen*, Bielefeld: transcript, 2020, p. 424.

43 Neta Alexander, *Interface Frictions*, Durham: Duke University Press, forthcoming. For a critique of the

struggles with insomnia, anxiety, or depression. At the same time, its minimalist design and relaxing, scoreless games can help a plethora of users reassess their relationship with their phones. A user who gets bored with a breathing exercise and attempts to leave the app by pressing the menu in the top right corner instead encounters a screen suggesting, 'let's stay here a bit longer'—drawing attention to the inconvenience of not having full control over the phone. While it is still possible to leave the app, these design decisions break the automated bodily reactions to boredom and frustration. After a few short games, the app encourages the user to turn off their phone entirely—an alternative sleep-inducing approach to that of Calm and other sleep apps, which offer an endless stream of sleep stories and white noises requiring to keep one's phone at arm's length.

If Calm rewrites personal histories of pain and sickness as shooting lullabies for weary bodies and minds, #SelfCare normalizes depression, fatigue, and burnout by offering a single home page featuring an insomniac person hiding under the covers and tossing from side to side. As the app tells us, this person 'refuses to leave bed today'. The mostly concealed protagonist is not a tranquil and healthy user about to rest and recharge. This human body is bound to remain horizontal as long as the app is turned on. For Canadian game designer and disability scholar Kara Stone, the choice not to include a script of waking up or going to work is what makes the app successful: '#SelfCare has not set out to cure all debility or negative feelings, but to change our relationship with our phones'.[44] In *TRU LUV*'s parlance, this is achieved by degamifying the more familiar health and sleep apps: 'Our goal is simply to feel better. There's no winning, no failure, no score. No difficulty, no ads, no notifications. There is just us and our feelings'.[45] These feelings, the app tells us, might entail, 'I don't want to get back to my emails,' 'I feel disconnected' or, 'I feel anxious and alone despite the affordances of convenience media'. It then invites the user to recognize these feelings, for example, by playing a word game in which she is asked to complete words such as 'is_lation' or 'insom_ia', only so she can sit with them for a while instead of clicking her pain away. As Stone argues, 'The goal of the game is not to overcome depression, a common narrative arc concerning disability, but to create rituals that make life sustainable'.[46] One such ritual could be putting one's phone away after briefly reflecting on how it might disturb sleep and worsen one's disconnection from one's body. By depicting an image of an insomniac person who tosses from side to side next to their phone, the app associates phone use with sleeplessness, providing an alternative to Calm's interface or to Netflix's and YouTube's autoplay-induced rabbit holes. Here, to fall asleep, one must first get rid of one's phone and be reminded of one's bodily needs, even when these needs might invoke undesired and inconvenient sensations such as pain and rumination.

assumed whiteness of mediation and sleep apps' users, see Lida Zeitlin-Wu, 'Meditation Apps and the Unbearable Whiteness of Wellness', *Just Tech*, 1 November 2023, https://just-tech.ssrc.org/field-reviews/meditation-apps-and-the-unbearable-whiteness-of-wellness/.

44 Stone, 'Designing Self-Care Affect and Debility in #SelfCare', p. 424.

45 Qtd. in Stone, 'Designing Self-Care Affect and Debility in #SelfCare', p. 417.

46 Stone, 'Designing Self-Care Affect and Debility in #SelfCare', p. 425.

Coda: Covid Nightmares

My hypersensitivity to light makes me prone to fatigue. When woken up by artificial or natural night, I am seldom able to fall asleep again. In the resulting moments of forced wakefulness, leaving my bedroom and turning on my phone amounts to surrender, an embracing of the fact that the night is lost. Transforming the individual act of sleep into a communal reflection on the conditions that hinder or support it, I wish to conclude this analysis of the soporific media industry with a close look at a recent artwork.

In *COVID Sleep*, an art piece comprised of fifteen short videos, Dayna McLeod produces night-vision surveillance footage of herself and her girlfriend sleeping (or failing to sleep). The project was conceived as part of a virtual residency inviting ten Canadian artists to reflect on the idea of 'being alone together' during the pandemic lockdowns, and the footage was shot over the course of the sixty-day residency from April to May 2020. As McLeod describes it, 'I've always had sleep disturbances like nightmares, sleepwalking, and night terrors, but [I] didn't realize their extent and frequency until I started these recordings. [. . .] I gasp, yell, talk, scream, and otherwise ask questions while asleep'.[47] While the project was originally presented as a gallery installation, the fifteen video pieces are available on YouTube. The short segments, which last between ten to forty seconds, capture McLeod as she wakes up from a nightmare, involuntarily moves her arm, and talks in her sleep. They present us with a depiction of a vulnerable, restless human body (see figure 5).

Figure 5: A frame from Dayna McLeod's COVID Sleep, depicting the artist as she abruptly wakes up from a nightmare at 23:43 p.m. (source: Courtesy of Dayna McLeod)

With its glimpses of McLeod's sleeping girlfriend, whose body is farther away from the camera and is often concealed by McLeod's torso and facial expressions, this project intentional-

47 *Covid Sleep* (dir. Dayna Mcleod), viewable at: https://www.youtube.com/playlist?list=PLCxxIPfj-5HRU933P6lOSoSQZJPASoBzJ.

ly draws on previous cinematic explorations of queer intimacy. Durational works like Andy Warhol's *Sleep* (1964) famously inquired what might happen to this most intimate act when exhibited in public, depicting a nonsexual mode of care and vulnerability.[48]

In her artist's statement, McLeod explains she employs night vision because its aesthetic features consist of 'pixilation, blurriness, perspective distortion, grain, and lighting'.[49] This low-resolution aesthetics reframes McLeod's abrupt movements as shots from a horror film. It is not just queer intimacy that McLeod invokes, but rather the suspenseful, uncanny sense of a living creature being caught on hidden camera in the dead of night. I read McLeod's work as an attack on surveillance capitalism and the notion that, to improve one's quality of sleep, we need to subject ourselves to technologies that monitor our circadian rhythms.

McLoed's cramped bedroom conveys claustrophobia and paranoia. It features multiple technologies, from a television screen in the very back of the frame to an iPad that McLeod holds before going to bed, as well as a phone on her night bed and, of course, the camera documenting her and her partner throughout the night. Yet these technologies of convenience all fail to provide what McLeod seems to seek: an undisturbed night's sleep, allowing her body to fully rest and recharge. Watching her nocturnal struggles to go back to sleep reminded me not only of my own sleepless nights, but also of the limitations of the design features promising to tuck me into bed.

Inviting us to reexamine our dependency on screens, crip horizontal media offers radical interpretations of convenience, vulnerability, care, and rest. McLeod and the creators of #SelfCare invite us to reflect on the anxieties associated with sleep and its lack—aging, sickness, pain, vulnerability, and uncertainty. They provide a creative space from which to conjure alternatives to the surveillance industry tracking users' sleep and wakefulness patterns by asking convenience for whom, and at what price? The soporific media industry, with its growing number of apps, design features, and products, worsens insomnia by making people obsessed with optimizing their sleep and achieving 'the perfect slumber'.[50] Rejecting the impulse to quantify sleep, crip horizontal media considers how this basic human need is shaped by technological, psychological, and socio-political conditions. By cripping convenience, these case studies insist that inconvenience cannot be entirely eliminated; in constant flux, the human body will forever remain a source of both comfort and pain, ease and distress.

Sleep apps and the convenience tech they are premised on are a part of a 'wellness industry' promising to better align our bodies and circadian rhythms with the relentless demands of 24/7 capitalism. What they do, however, is to nudge sedentary phone users to lie down. The irony is that this postural change is produced by, and is dependent on, one's electronic device—

48 See Branden W. Joseph, 'The Play of Repetition: Andy Warhol's Sleep', *Grey Room* 19 (Spring 2005): 29–33.

49 Qtd. in Lorenza Mezzapelle, 'Parallel Lines Considers What It Means to Be Alone, Together', *The Concordian,* 12 May 2012, https://theconcordian.com/2020/05/parallel-lines/.

50 Brian X. Chen, 'The Sad Truth About Sleep-Tracking Devices and Apps', *New York Times,* 17 July 2019, https://www.nytimes.com/2019/07/17/technology/personaltech/sleep-tracking-devices-apps.html.

the very same device that is likely to hinder sleep due to overstimulation and light-emitting screens. The postural is the habitual, and as such it requires much closer attention.

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IN/CONVENIENCES OF MOBILE PAYMENTS: "ALTERNATIVE DATA" AND THE DISTRIBUTION INFRASTRUCTURES OF LOAN APPS

RAHUL MUKHERJEE

A loan app advertisement in contemporary India begins with a delivery worker on a motorbike, making use of his phone in a parking lot amid sounds of Diwali firecrackers. An 'applied' notification with the KreditBee loan app icon flashes for audiences.

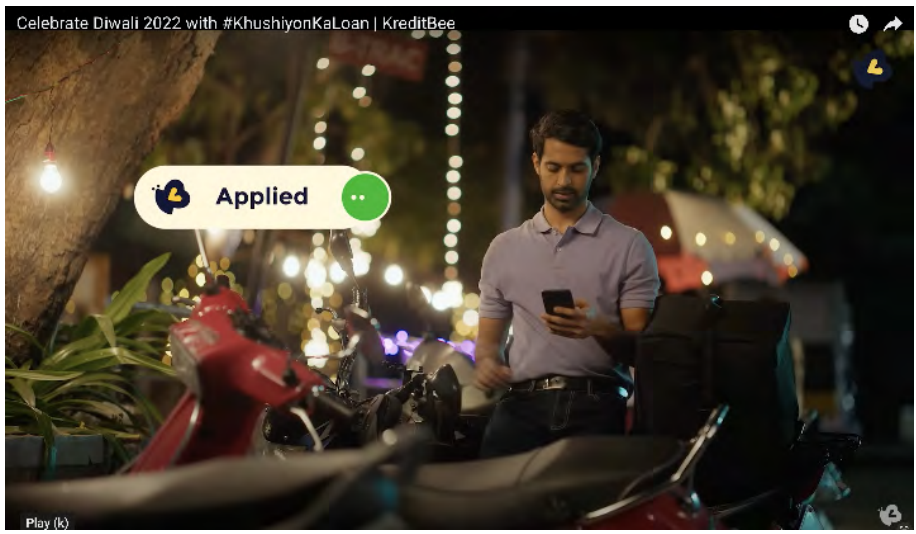

Figure 1: Loan Applied Notification. Screengrab by author of KreditBee commercial on YouTube.

After completing this task, the delivery worker wishes people 'Happy Diwali' in a selfie video. He makes known that he has completed his work, but one surprise delivery still remains. The selfie video recording began just as the loan app application had been submitted. The video timer draws the viewer's attention. The audiences can see the first selfie video recording ending at around the 20 second mark as the ad protagonist begins his final surprise delivery. Just as he puts his helmet and is about to start the motorbike, the delivery worker receives another notification from KreditBee that says 'Approved' with a green tick. So, we can infer, the loan app approval took about 20 seconds.[1]

1 KreditBee, 'Celebrate Diwali 2022 with #KhushiyonKaLoan', Loan app ad, *Youtube*, 12 October 2022, https://www.youtube.com/watch?v=QCrf-IGKk5M.

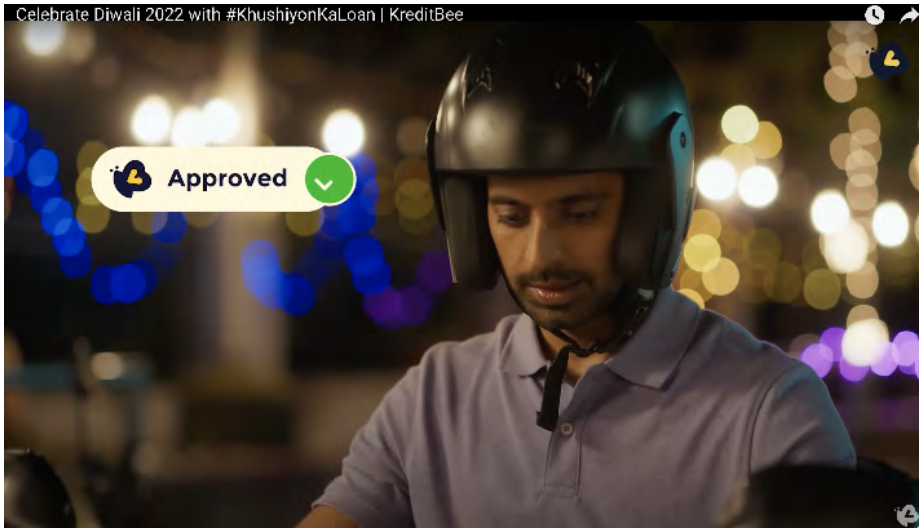

Figure 2: Loan Approved Notification. Screengrab by author of KreditBee commercial on YouTube.

As he moves from shop to shop through the city on his bike, buying sweets and a necklace, wrapped in elegant gift boxes safely put in his delivery bag mounted on the back of his vehicle, the soundtrack containing the following words suffuses the scene 'Khushiyon Ka Tyohar Manana Hain' ('Festival of Happiness needs to be celebrated'). This connotes that he is buying gifts as part of celebrating the Diwali festival. At a saree shop, the shopkeeper asks between what monetary range should he show sarees to which the protagonist replies that he would like to see the best quality saree as he does not have to worry about 'budget' this Diwali because his loan was approved 'Jhath Se' (instantly) by KreditBee. We see the timestamps as he picks up perfume at 15 mins 51 seconds and a saree at 25 mins 16 seconds, before reaching home with the delivery of gifts for (what seems to be) his wife at 38 mins 26 seconds.

This ad emphasizes the convenience of taking out loans through mobile phone apps without the hassles of taking paper documents to brick-and-mortar banks, waiting for in-person appointments, or being scrutinized, humiliated and denied loans during the appointment for not having proper documentation. One can apply from a parking lot with a mobile internet connection just putting together some know-your-customer (eKYC) 'digital' documents for identity verification and credit risk assessment, and the money will reach the bank account of the applicant in 10 mins. This is within the time duration that the delivery worker has reached the first shop to start buying gifts for this wife. The ad notes that KreditBee stands for '10-minute loans,' '100% online documentation,' and 'flexible repayment plans'. The loan app is part of a platformized convenience economy which believes in providing seamless and instant services to customers, reducing their barriers to access. After all, according to Shep Hyken, 'reducing friction' between the customer and the product or service experience, is the key principle of 'convenience revolution'.[2] Indeed, we find an instantiation of such a

2 Shep Hyken, *The Convenience Revolution: How to Deliver a Customer Service Experience That Disrupts*

professed value/experience in the KreditBee tagline that reads: 'Loans anytime anywhere'. This emphasizes the ubiquity and comfort of their service. In the loan ad, it is evening time and the delivery worker has been probably busy all day delivering goods and food. Even if the banks have closed and he is at a parking lot, he can still get a loan.

Loan Apps and Platformed Convenience

A crucial aspect of the above-mentioned ad is how it integrates loan apps with the other quotidian practices of the platform economy. Firstly, what should not escape notice is that the loan app is itself an intermediary between the lending institution and the borrower, building on the classic logic that today's platform companies are merely intermediaries between multi-sided markets and/or stakeholders. The disclaimer that follows the ending of the ad clarifies this aspect: 'the loan is subject to the credit policy and terms & conditions of the registered NBFCs/Banks [lender(s)] participating on the KreditBee platform'. This suggests that KreditBee is mediating between lenders and borrowers. It further adds that the disbursement of loan within 10 minutes is not guaranteed and is subject to whether the applicant's details comply with the conditions of the loan.[3]

This is a negotiation of roles and responsibilities by KreditBee as it takes on the 'platform' label. Tarleton Gillespie has written about YouTube deploying the trope of the 'platform' as a cultural intermediary in its efforts to discursively cater to the at times contradictory interests of its different constituencies: users, content producers, and advertisers.[4] KreditBee as a financial intermediary platform mediates between lenders and borrowers who have different views about what interest rates on loans should be as well as what repayment schedules are acceptable.

The problematic pricing of the loans and the settlement times have raised lots of concerns regarding the digital loans architecture because this is where the inconvenience of the loan is found. If the loan comes 'anytime anywhere' the repayment comes at the bidding of the bank and the app—and therein lies the twin of convenience: inconvenience. This entwined relationship between convenience and inconvenience is captured by this collection's editors as 'in/convenience'. The question about interest rates/settlement times is not just for KreditBee, but also for other financial technology (fintech) intermediaries like Paytm, MoneyTap, and Navi. All these digital lending platforms have the same answer to this question (about interest rates and settlement times) that they are merely intermediaries who mediate between lenders and borrowers, and facilitate faster customer verifications and loan disbursals. The company Paytm had a meteoric rise as a digital payments company during India's 2016 demonetization (*notebandi*) drive, and then branched into digital lending When asked about interest rates by a financial journalist, the Paytm spokesperson replied, 'Regarding the interest rates, they are

the Competition and Creates Fierce Loyalty, Shippensburg, PA: Sound Wisdom, 2019, p. 16.

3 KreditBee's lending partners listed on their website include Piramal Finance, Tata Capital Financial Services Limited, Vivriti Capital Limited, and Poonawalla Fincorp Limited among others. See, KreditBee Digital Lending Partners, https://www.kreditbee.in/digital-lending-partners.

4 Tarleton Gillespie, 'The politics of "platforms"', *New Media & Society* 12.3 (2010): 347-364.

charged by the lenders and not us. We are only distributors of the products that our lending partners offer.'[5] This admission by Paytm of being 'distributors' of financial products (loans/money) is key because distribution is where the impact of platform revolution, whether in streaming film/TV content or e-commerce delivery, has been arguably felt the most.[6] How, then, could digital money distribution be left out of platformization? And what does it mean to put the distribution of money back into critical accounts of platformization?

Secondly, the integration with the platform economy is emphasized in the ad by suggesting how swift distribution of money (through the KreditBee platform in about 10 mins) works with efficient delivery of gifts by the delivery worker in 38 mins. The repeated invocation of time-stamps throughout the advertisement should not be underestimated. The platform economy is after all an on-demand economy, with platform services ranging from on-demand streaming content to on-demand food delivery. KreditBee seems to indicate that it provides on-demand money/loans, which facilitates on-demand delivery of other services. The promise of instant loan in 10 mins resonates with the promise of quick commerce firms such as Zepto in India promising 10 mins food deliveries. These faster end-to-end deliveries require restructuring of urban logistical infrastructures evident in the rise of 'dark stores' and 'ghost kitchens' along with anxieties about inconveniences for the delivery worker, including increased risks of road accidents or vehicular tear negotiating potholes.[7] While the 10 mins food delivery model has sparked debates about storage facilities and transportation conditions, the 10 mins loan delivery model has not received the same attention. Movement of money perhaps needs as much attention as movement of food and television content. After all, as Lana Swartz and David Stearns write, 'innovations in money and payments during the modern era have tracked alongside changes in the underlying communications infrastructure', whether it is paper checks and money orders sent through paper mail and express shipping, or digital payments through/into ATM cards, e-wallets, and loan apps.[8] Money movement and goods movement proceed apace.

5 Cited in Ashwin Manikandan, 'Instant Digital Loans: convenience comes with a heavy cost', *The Morning Context*, 29 August 2023, https://themorningcontext.com/internet/instant-digital-loans-convenience-comes-with-a-heavy-cost.

6 On demonetization and platformization, see Adrian Athique, 'A great leap of faith: the cashless agenda in Digital India', *New Media & Society* 21.8 (2019): 1697-1713.

7 Noopur Raval, 'Instant-Instant Noodles: How algorithmic platforms transform food, taste and reproduction in cities', *Penn Cinema & Media Studies Colloquium*, 7 September 2022, https://pricelab.sas.upenn.edu/events/instant-instant-noodles. For ghost kitchens, refer to Aaron Shapiro, 'Platform urbanism in a pandemic: Dark stores, ghost kitchens, and the logistical-urban frontier', *Journal of Consumer Culture* 23.1 (2022): 168-187. Also see Abhirup Roy and Aditya Kalra, 'India's Zomato faces heat for plan to deliver food in 10 mins', *Reuters*, 22 March 2022, https://www.reuters.com/world/india/indias-zomato-faces-heat-plans-deliver-food-10-minutes-2022-03-22/. On ten minute delivery work, see Naandika Tripathi, 'On the trail of how 10-minute delivery works—and doesn't', *Forbes India*, 1 July 2022, https://www.forbesindia.com/article/take-one-big-story-of-the-day/on-the-trail-of-how-10minute-delivery-worksand-doesnt/77761/1.

8 Lana Swartz and David Stearns, 'Money and its Technologies: Making Money Move in the Modern Era', in Taylor C. Nelms and David Pedersen (eds) *A Cultural History of Money in the Modern Age*, London: Bloomsbury Academic, 2019, pp. 27-52.

Convenience is about 'timing' as Elizabeth Shove has so convincingly written and Joshua Neves and Marc Steinberg reiterate in their chapter. Convenience is the 'ability to shift and juggle obligations and to construct and determine personal schedules'.[9] The delivery worker is part of the gig economy that runs on (or adapts itself to) flexible work schedules. As such, the delivery worker seems to both be able to complete his delivery work by evening and still find time to enjoy the festival of Diwali, thanks to KreditBee's instant loan app service. That the worker is both an on-demand consumer and an on-demand producer is itself of note. The delivery worker himself is a key part of India's e-commerce and food delivery app sector, an ideal lower middle-class customer for the small loans that KreditBee offers. These are small size loans, with the maximum amount being 5 lakh rupees, with interest rates that can vary from 12-25% for KreditBee (and between 10-48% for the digital lending industry as a whole) based on some research by *The Morning Context*.[10]

I have used the KreditBee loan app advertisement circulating in India around October 2022 to illustrate the state of the platformized convenience economy in India. As the ad demonstrates, convenience is both an ideology of contemporary 'platform capitalism' (or as some would say 'surveillance capitalism') as well as a temporal conditioning that involves experiencing on-demand deliveries of gifts, food, and money, juggling schedules in the now, and anticipating uncertain futures.[11]

Lending initiatives by more established players such as KreditBee and Paytm are part of a recent change in the loan app landscape in India which from early 2020 till mid-2022 witnessed the dominance of illicit loan apps which charged obscenely high interest rates and processing fees, and deployed predatory collection tactics. While the legitimate loan apps do not necessarily use data to target borrowers in a predatory, abusive way and they do provide disclaimers and caveats to their loan promises, the question of what happens in the backend—to support seamless loan approvals in the frontend loan interface—still very much remains. Concerns about user/customer data extraction and surveillance in the loan approval and disbursement process exist even as fintech enthusiasts tout the work of AI and machine learning in calculating credit scores from alternative data. Furthermore, the discursive politics of lending platforms elides any significant discussion about who has access to this customer data and where it goes. These concerns about the use of data as collateral were heightened during the reign of the rogue loan apps especially amidst the Covid-19 pandemic, when they lured desperate customers (without pay and/or jobs) to enlist. During the loan onboarding process, these predatory loan apps gathered the WhatsApp contact details of customers and harassed borrowers by notifying their relatives when they defaulted on their loans.

9 Elizabeth Shove, *Comfort, Cleanliness and Convenience: The Social Organization of Normality*. New Technologies/New Cultures Series. Oxford, UK: Berg, 2003, p. 171.

10 Manikandan, 'Instant Digital Loans'.

11 Refer to Jenny Huberman, 'Amazon Go, Surveillance Capitalism, and the Ideology of Convenience', *Economic Anthropology* 8.2 (2021): 337-349. On surveillance capitalism, see Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*, London: Profile Books, 2019. Regarding platform capitalism, see Nick Srnicek, *Platform Capitalism*, Malden, MA: Polity, 2016.

Since 2016, the Government of India offered the Unified Payments Interface, and with demonetization, fintech start-ups provided financial services from payments and lending to savings and insurance. These could all be performed through mobile phone apps with a click/swipe/tap. This notion of 'instantaneous customer satisfaction' where Indian state/corporate services could be summoned by the consumer-citizen at their convenience became part of the 'start-up state'.[12] Digital payments and lending were seen as trade-off between 'platformed convenience' of financial activities and concerns about privacy/surveillance.[13]

I focus on the connection between the frontend interface and the backend mobile money distribution infrastructure. The backend infrastructure makes possible this experience of convenience while interacting with the app interface/screen. With fintech platforms, an ecosystem of human/non-human intermediaries (data brokers, analytics providers, and software development kit (SDK) libraries) seemed to replace the traditional in-person moneylender, agent and brick-and-mortar bank. These new intermediaries collect and trace (read: surveil) monetary transaction data and behavioral data pertaining to social media activity, which is termed 'alternative data'. Predatory loan apps proliferated with invasive surveillance systems: if debtors failed to pay off their loans, their WhatsApp contacts received messages and phone calls. Third-party developers plug in their SDKs into loans apps to facilitate credit risk assessment and eKYC checks. To understand the role of third-party developers in moving and using customer data requires examining the fintech infrastructure. An infrastructural analysis suggests that the inconveniences of mobile money scams or loan app repayments are not exceptions to, but rather constitutive of digital economy.[14]

It is important to trace the history of digital payments and lending in India and how they intersect with the growth of platform economies. Examining infrastructural aspects of loan apps, I argue for a multi-situated approach to understanding how such apps are situated within varied infrastructural relations. This multi-situated study of loan apps connects the temporal conditioning of users experiencing the instantaneity and easy availability of loans and the infrastructural relations across various stakeholders of the loan app ecosystem that make it possible to have such a customer experience of convenience. My goal is to then shift to inconveniences associated with these loan apps, building on Joshua Neves and Marc Steinberg's insight that the inconvenience is deeply related to and often the flip side of convenience.[15] One kind of inconvenience comes from financial misinformation/disinformation that scamsters are using to deliberately deceive or lure customers into taking predatory loans and then coercing them to pay exorbitant interest rates. Another kind of inconvenience occurs when even legitimate lending platforms obfuscate how borrower (alternative) data is collected, stored, and processed, and elide information about how interest rates are decided.

12 Vijayanka Nair, 'Governing India in Cybertime: Biometric IDs, Start-Ups, and the Temporalized State', *South Asia: Journal of South Asian Studies* 42.3 (2019): 519-536.

13 Joshua Neves and Marc Steinberg, 'Pandemic Platforms: How Convenience Shapes the Inequality of Crisis', in Philipp Dominik Keidl et al (eds) *Pandemic Media: Preliminary Notes Towards an Inventory*, Lüneberg: meson press, 2020, pp. 105-112.

14 Winifred R. Poster, 'Introduction to special issue on scams, fakes, and frauds', *New Media & Society* 24.7 (2022): 1535-1547.

15 Joshua Neves and Marc Steinberg, 'In Convenience', in this volume.

Digital Financial Inclusions and Exclusions in India

Enabled by the Aadhaar system, the Unified Payments Interface (UPI), and the India Stack infrastructure, interlinked digital platforms allow for smooth transfers across bank accounts for India's consumer-citizens. Both the government and fintech companies have proclaimed that it has become possible for 'unbanked' Indians to begin to have a credit history and be part of the digital lending and borrowing system (The Economist, 2018). Previously in India, only members of the formalized workforce who had bank accounts, PAN (Permanent Account Number associated with taxpayer) cards, and a rich credit history could get formal credit, but now credit distribution could potentially be democratized to include small businesses, the urban and rural poor, and students. From 2015 to 2019, as digital payments became more frictionless, instantaneous, and ubiquitous (all synonyms for convenient), digital lending grew as well. This increased spread of digital lending in the name of "financial inclusion" has been welcomed by some commentators, while others suggest that it has caused increasing debt among borrowers and monitoring of customers' personal and social data for credit scores.[16]

The government and fintech corporations see this as an opportunity to serve vast swaths of marginalized Indian customers who were previously excluded from formal banking systems but now can be included because they have a mobile phone connected to the Aadhaar identification system (also known as unique identification or UID system). Others see this rise of digital/mobile money in India as consistent with a wider global trend, where 'digitization of payments enables the digitization of finance more broadly', with partnerships between Big Tech and Big Finance emerging as fintech and championing a cashless economy and society.[17]

Before turning to predatory loan apps, which mushroomed amidst the Covid-19 pandemic of 2020, I want to briefly mention some of the more legitimate apps which were growing in the Indian finance markets since 2016. When it went live in December 2016, mPokket became one of the first successful microloan apps meant for students who needed urgent cash. Most students in India were ineligible for credit cards, and they were too young to have saved anything substantial, which meant they were likely to face cash crunches. For the small loans they required, the banks and other traditional financial institutions did not consider them worthy customers to invest in. mPokket made it simple for students to sign up: they could find the microloan app in the Google Play store, download it, register through their Google or Facebook account, and then upload eKYC documents. Once verified (in most cases, within an hour), they became eligible for loans. The ticket size for these loans was small, from Rs 500 to Rs 20,000. Timely loan repayments help to increase the borrowing limit next time.[18] Being

16 Kevin Donovan and Emma Park, 'Algorithmic Intimacy: The Data Economy of Predatory Inclusion in Kenya', *Social Anthropology* 30.2 (2022): 120-139; Tarunima Prabhakar, *A New Era for Credit Scoring: Financial Inclusion, Data Security, and Privacy Protection in the Age of Digital Lending*, UC Berkeley Center for Long Term Cybersecurity White Paper, 2020, https://cltc.berkeley.edu/wp-content/uploads/2020/06/A_New_Era_for_Credit_Scoring.pdf.

17 Brett Scott, *Cloudmoney: Cash, Cards, Crypto, and the War for our Wallets*, London: Penguin, 2022.

18 Vishal Krishna, 'This startup clocked $9M in revenue by lending to just students and the self-employed', *YourStory*, 30 March 2021, https://yourstory.com/2021/03/kolkata- based-lending-platform-mpokket-students-instant-loan.

savvy users of smartphones, students were a readily accessible market for these microloan apps whose primary channel of outreach is the mobile phone.

Once consumers started using smartphones for borrowing, the question for lenders became: How does one gather so-called alternative data (about which more below)? The alternative data collection and scoring practices on which creditworthiness is being evaluated remain opaque. After all, mPokket—or, for that matter, any microloan app—is not simply basing the borrowing limit on prior repayment history. Comprehending how phone surveillance and data collection practices by data brokers have changed from 2015 onward is key to understanding credit ratings and digital fintech processes. This is where a whole ecosystem of players like alternative risk-score providers come into the picture. Alternative data storage and processing is linked to the conveniences and inconveniences of payments.

Alternative Data and the Inconvenience of Repayments

In a country like India where credit scores are virtually non-existent for the majority of the population and where smartphones and mobile internet data plans have dispersed so widely among the population, it obviously becomes enticing for the fintech industry to examine all kinds of unstructured (behavioral) data which they are now able to gather because of the digital traces left by millions of Indian users on the mobile internet.[19] Fintech companies are trying to devise algorithms so as to gauge risks and consumer intent better. In fintech conferences, one repeatedly hears about the responsibility that loan apps have to open the black box of AI and algorithms, and clarify the decisions made by algorithms to their lenders and borrowers. But how much of this is actually done in practice remains a question. At times, loan apps and third-party developers employ a very technical vocabulary dropping terms like 'decision trees' and 'neural networks', and during other times, mention one provocative variable in determining borrower credibility. In a panel discussion regarding credit ecosystem in the Payments and Lending Conference 2022, the CEO of a loan app company EarlySalary (now called Fibe), Akshay Mehrotra, explains 'alternative data' in the following manner:

> *Data is actually very large [. . .] millions of data points coming in and we taking out variables out of it [. . .] how fast does a customer answer the questions. [. . .] In [the] traditional world, you could not measure because a person was filling up your form on your behalf and he would always put the right answer. [. . .] In a digital world, let's say on EarlySalary mobile app, we are measuring every extreme data of the consumer and that goes on into a variable to say [that] if you look at in a larger sense [. . .] people in a hurry are more desperate for money while people who wait out and answer the question correctly are more patient and will be more responsible with the money given to them. Now, you can use it as a new variable or you can say it is a judgmental answer. But over time, it comes as a result to say it adds up to value or not.*[20]

19 The World Bank Report 2018 finds formal/digital/mobile phone credit use among less than 10% of Indian population. While mobile phone use is growing, mobile phone credit use may not be increasing at the same rate, and hence the scope for improvement. See 'Financial Inclusion Data / Global Findex', *World Bank*, accessed 2 April 2024, https://datatopics.worldbank.org/financialinclusion/country/india.

20 See Akshay Mehrotra's speech in IBS Intelligence, 'Reimaging the Credit Ecosystem,' Panel Discussion, Payments & Lending Conference, 24 March 2022, *Youtube*, 11 April 2022, https://www.youtube.com/watch?v=oW3S8J58LWo.

So, here Akshay Mehrotra notes that as a user is filling up online details in EarlySalary app interface, their movements are being measured to gather behavioral data. A borrower typing in a hurry and making mistakes is being considered desperate in the way this behavioral variable is being operationalized for the algorithm. Another customer who has a steady approach to filling in details in an unhurried manner with accuracy is considered a more dependable borrower. Mathur adds two caveats. One, that this could be considered 'judgmental' by some, but he adds that they will be testing the results from this variable over a period of time, retesting it again and again. Two, another caveat which Mehrotra implicitly gestures to while explaining the scenario is that this (un)hurried user movement on the loan interface and their (in) accuracy rate of filling details is one among many variables that is used determine the loan candidacy. Much of this alternative data tends to be behavioral data, and while the loan app itself promotes immediacy and instantaneity (conveying convenience and slickness), its algorithms gathering 'alternative data' might negatively judge a user's hurried finger movements on the app interface, more so if they make mistakes while imputing the information. Ironically, it seems a loan applicant may be more likely to receive the loan if they do not believe in the availability, ease and convenience the app interface and discourse around the app promises.

A key player in the Indian fintech space with regard to credit scoring is Lenddo. In its initial days, Lenddo tested its algorithms for credit scoring by offering small loans in the Philippines around 2011. Soon after, it quit offering loans and positioned itself as a credit-rating company. Thereafter, Lenddo sold its credit-scoring and identity-verification services to other banks and loan apps, and its products have been integrated into the onboarding process of digital lenders.[21] Jum Balea writes that 'Lenddo uses algorithms that pull and analyze data from these people's [individuals from the emerging middle class] social media accounts—who their friends are, how often they interact, their interests—and turns the information into a rating or score that says if they're likely to pay back or default on their loans. Or in other words, if they are to be trusted.'[22]

Marie Langevin understands this to mean that Lenddo links credit scores to the individual debtor's 'capacity to form online groups with friends, parents and colleagues'.[23] For Lenddo, the social graphs of the debtors' online relationships reveal character traits such as reliability, responsibility, and honesty. Langevin finds Lenddo privileging artificial intelligence and behavioral economics in evaluating creditworthiness instead of 'drawing on the know-how concerning the evaluation and measurement of the productive capacities of debtors'.[24] For loan companies to evaluate the productive capacities of debtors, they would need to (perhaps) deploy in-person, human expertise and invest considerable time: credit analysts would maintain a close relationship with micro-entrepreneurs to assess cash flow and repayment potential. Compared to earlier microfinance initiatives, it is precisely time and human labor that the alternative credit scorers are promising to cut back on. At best, these alternative credit

21 Marie Langevin, 'Big data for (not so) small loans: technological infrastructures and the massification of fringe finance', *Review of International Political Economy* 26.5 (2019): 790-814.

22 Jum Balea, 'Lenddo stops lending, now helps clients determine customer trustworthiness', *TechInAsia*, 25 January 2015, https://www.techinasia.com/lenddo-customer-trustworthiness.

23 Langevin, 'Big data for (not so) small loans', 800.

24 Langevin, 'Big data for (not so) small loans', 802.

scores—partly relying on social media data for character and behavioral traits—can provide some indication of whether a particular debtor can be relied on to pay on time. However, if such a debtor simply has no means to pay, how will they? In Langevin's analysis or Mehrotra's explanation, this data is alternative also because now with increased monitoring of digital traces this data is finally available to be stored and processed, something which was not available before the widespread accessibility of the mobile internet in India.

Using social media connections or phone contacts data as alternative credit scoring data can have benefits but also be compromised in contexts such as India where in rural and peri-urban areas there is a possibility that women's phone use and access is mediated by a male relative. In such a situation, women feel discouraged to have too many phone contacts and self-censor their text messages and social media connections.[25] This would lead to a thin data footprint capture or an incomplete data upon which algorithms would make decisions. So, if alternative data was part of providing user convenience, it might create gendered inconveniences. Alternative data collection and uses are a cause of in/convenience for both legitimate and illegitimate loan apps. Even legitimate loan apps seem to be operating based on questionable alternative data practices. That said, it is important to highlight for a comparative perspective, the rise of predatory loan aps during the recent pandemic in India.

Predatory Microloan Apps

Amid the COVID-19 pandemic in April and May 2020, a new variant of digital lending apps (like UdhaarLoan, CashBean, RupeeFactory, and Wifi Cash) mushroomed in India, providing swift microloans to the poor and unemployed, as well to those who were desperate for money because they had lost their daily jobs due to lockdowns. These apps demanded quick repayments with high interest rates. Unlike banks or financial institutions—which require stacks of paperwork and substantial collateral, and which take many months to approve a loan—these quick microloan apps approved payments within just minutes. But there was a catch. Exploiting the desperate poor and unemployed people who were battling the crisis of the pandemic, these predatory loan apps were found to be flagrantly flouting financial regulatory laws and consumer protection guidelines. They made their debtors/customers install the app on their smartphone and share their mobile's GPS location, contact list, and picture gallery.[26] The micro-loan debt trap was not just restricted to India as working-class migratory laborers in China also found themselves defaulting on payments, and being harassed by recovery agents.[27]

25 Alexandra Rizzi, Alexandra Kessler, and Jacobo Menajovsky, *The Stories Algorithms Tell: Bias and Financial Inclusion at the Data Margins*, Center for Financial Inclusion Report, 31 March 2021, https://www.centerforfinancialinclusion.org/the-stories-algorithms-tell-bias-and-financial-inclusion-at-the-data-margins.

26 Nilesh Christopher, 'Debt and Shame via GooglePlay', *Rest of World*, 27 January 2021, https://restofworld.org/2021/debt-and-shame-via-google-play/.

27 Yichen Rao and Tom McDonald, 'Debt at a distance: Counter- collection strategies and financial subjectivities of China's working-class defaulters during COVID-19', *Economy and Society* 52.2 (2023): 250-273.

These rogue loan apps carried misleading advertisements on YouTube with attractive (albeit distorted) interest rates and repayment windows. A click took interested borrowers to the Google Play store to download the loan app. Could one really participate in the mobile money transition without being cheated at some point? How would one know when to share bank account information and when not to? If the loan process was going to be instantaneous, how could one hesitate before clicking a link or sharing their financial information? The convenience of instant loans seemed to be mixed with the (inconvenient) anxiety of possibly being taken for a ride by these loan apps.

The collateral for easy loans was user data, and this data (or surveillance of data) was the trade-off for convenience and seamless onboarding process and instant delivery of money into one's bank account. The predatory loan apps used the customer data collected during the initial onboarding process to harass those who had defaulted. Intimidation practices included calling not just the defaulter—and threatening to sue them —but also the defaulter's friends and relatives (from the contact data captured earlier) and using expletives against them. So blatantly vulgar was the language, tone, and demeanor of these calls that some harassed debtors started recording them. These calls were then replayed on prime-time news shows.[28] While public outrage on a TV show spectacle might have its place, these shows did not trace the ways the fraudulent loan apps were using existing fintech infrastructure. The TV shows failed to acknowledge that one reason these predatory loan apps were succeeding had much to do with how certain protocols of loan disbursement and onboarding (like asking for opt-in permissions for certain phone data) had been normalized by legitimate loan apps.

Following many complaints from victims of predatory loan apps as well as consumer rights groups, the Reserve Bank of India in August 2022 introduced stricter guidelines with regard to digital lending. The Google Play store also took steps to take down the illicit apps. The exit of predatory loan apps also meant a void was created in the online lending market which encouraged established players like KreditBee and Paytm to aggressively enter this market.[29]

Unlike rogue apps, legitimate loan apps are not using the data gathered to abuse defaulters. That said, as I have argued, the architecture of 'alterative' data collection needed to provide a convenient loan onboarding experience had been in place even in the legitimate lending platform sphere. So, user call records these apps still access may not be used to harass defaulters' families, but they may be used to judge the credibility of a borrower depending on whether they call their parents regularly or not—treated here as a sign of reliability. While illicit predatory loan apps deliberately spread financial disinformation, I argue that the legitimate digital lending platforms are creating opaque zones of financial knowledge trying to cater to their lenders, borrowers, third-party developers, and regulators, all at the same time. Beyond debating alternative data and algorithms, I believe we need to move toward discussing this fintech infrastructure or the loan app platform ecosystem, which seems to provide partial information to each of its stakeholders.

28 Zee Business, 'Operation Hafta Vasooli', *Youtube*, 16 April 2020, https://www.youtube.com/watch?v=NMQdKi_zVJQ.

29 Manikandan, 'Instant Digital Loans'.

Appropriating Fintech Infrastructures

In most cases involving both legitimate and illegitimate microloan apps, a nonbanking lender, usually called a nonbank financial company (NBFC), partners with a lending partner or a loan app so that it can reach a wider set of people with loan offerings. Usually, an NBFC works with several lending partners and loan apps, and the loan app in turn depends on various actors to supply SDKs/APIs for loan dispersal, credit scoring, identity-verification checks, payment processing, and loan collection. These services are called fintech-as-a-service (FaaS), and many loan apps depend on a few niche FaaS companies. The NBFC partner may not even know who the loan app is partnering with for a particular service.

During the microloan controversy, an NBFC like Inditrade did not know that some of the loan apps it was partnering with were using identity-verification services from the 'Advance AI', a Chinese company working on AI-driven eKYC.[30] Some of these verification methods, as recounted by Cashless Consumer experts Suman Kar and Srikanth Lakshmanan, involve taking a selfie during loan onboarding, which is then sent back to a server in China. This server tests and checks whether the borrower is a real person, after which the information is passed back to the app. These flows of data raise national/geopolitical concerns, as some of these ID-verification techniques involve liveness detection and facial recognition data, which can then be mirrored in other databases. It bears noting here though that fintech companies developing questionable third-party data gathering tools do not just exist in China, they are spread across several countries of South Asia, South East Asia, and East Africa including India, Philippines, and Kenya. Scholars working on the relationship between apps and infrastructures stress that apps are not 'stand-alone objects' but work at various levels as part of 'wider socio-technical assemblages'.[31] This means that we have to understand the activities of loan apps not only at the individual or company level but also at the level of infrastructural platform services.

Furthermore, the loan app company as a digital lending platform seems to be selective in the way information moves between the various stakeholders it is mediating between: here, between the NBFC and third-party developer. The same could be said about how interest rates are being determined based on alternative data collection that borrowers do not know much about and that the loan app indicates is the prerogative of lending firms and third-party algorithms.

Not just in the loan app space, but also within the wider mobile app ecosystem, third party SDKs have become constitutive actors in helping offer monetizing, analytics, and advertising functions that are able to convert user sociality into data at the backend and thereby improve the functionality of the apps with the hidden collateral of greater surveillance. SDKs are far

30 Arundhati Ramanathan, 'The unregulated tech supermarket powering India's loan app scourge', *The Ken*, 17 March 2021, https://the-ken.com/story/the-unregulated-tech- supermarket-powering-loan-app/.

31 Michael Dieter et al., 'Multi-situated App Studies: Methods and Propositions', *Social Media + Society* 5.2 (2019): 1-15.

more integrated into an app's source code than laptop/desktop cookies, which should make us more concerned about user privacy in the mobile phone ecosystem.[32] For loan apps, the implications of permissions requested by third party SDKs for effective app use is particularly crucial to study given the sensitivity of information collected. Equally important is the need to ascertain how the app stores are regulating to what extent these permissions are necessary and reasonable, or appropriate and ethical. With the spread of financial services in emerging economies like India and Ghana, there are concerns about whether the data generated out of erstwhile unbanked poor might be compromised with the rise of customer protection risks. David Medine and Gayathri Murthy in their CGAP (Consultative Group to Assist the Poor) report noted that data protection regimes by emphasizing individual consumer consent end up placing undue burden on low-income populations in emerging economies who have just started opening accounts and coming online, and thereby lack significant digital literacy.[33]

Production of Convenience, Cultures of Convenience

There is industrialized convenience being created through digital lending where the fintech infrastructure creates the foundation for an easy and convenient loan onboarding process, and alternative data collection and processing determine the type of loan eligibility, payment windows, and interest rates leading to potential (in)conveniences in the future. In some scenarios, it could almost seem that customers did not need to take loans per say, but rather took it because it was so convenient and readily available—never perhaps knowing that they might end up repaying monthly installments for years. At a panel discussion regarding digital lending, the newspaper *Economic Times*' financial editor Amol Dethe, while asking questions to lenders and loan app professionals, pointed out the Gen Z demography's borrowing practices.[34] These borrowers espoused the 'Buy Now, Pay Later model', and thus were especially susceptible to taking out digital loans on whims such as looking nice for a date or for attending a wedding. So they took loans not because they required it but because borrowing seemed seamless, only later realizing that repayment of loans was anything but seamless.

So, industrialized production of convenience by fintech companies and infrastructures can create conditions where loans are made available for constituencies who may not necessarily need it or know the hazards of borrowing. Borrowers might face problems paying back and lending platforms may find it difficult to recover the money as well. Another scenario is when lending platform recovery agents encourage customers to take a loan from another loan app to pay the monthly installments of an earlier loan, thereby creating conditions of debt entrapment where borrowers keep moving from one loan to another. This is where the narra-

32 Jennifer Pybus and Mark Cote, 'Did you give permission?: Datafication in the mobile ecosystem', *Information, Communication & Society* 25.11 (2022): 1650-1668.

33 David Medine and Gayatri Murthy, *Making Data Work for the Poor: New Approaches to Data Protection and Privacy*, CGAP: Focus Note, January 2020, https://www.cgap.org/sites/default/files/publications/2020_01_Focus_Note_Making_Data_Work_for_Poor.pdf.

34 See Amol Dethe (moderator), 'NBFCs' Biggest Boon: Digital Lending', panel discussion, Economic Times: Banking, Financial Services and Insurance [ET BFSI], *Youtube*, 4 May 2023, https://www.youtube.com/watch?v=I4YPAFWLhnY.

tive of financial inclusion changes trajectory toward 'predatory inclusion'.[35] This scenario is not restricted to India either. Anthropologists Kevin Donovan and Emma Park write about young Kenyans in a downtown Nairobi pub running out of mobile money, but who could still socialize over drinks as they availed the digital overdraft facility offered by Safaridotcom in the form of Fuzila with the catchphrase: 'Finish what you need to finish with Fuzila.'[36]

Whether buying gifts for Diwali using KreditBee, or socializing over drinks thanks to Fuzila, are strictly necessary reasons for taking out a loan (or being in debt) remain debatable, yet they suggest that everyday calculations of convenience are subject to socio-cultural variations.[37] Some KreditBee ads offer other loan-taking scenarios—'upgrading' from scooter to motorbike, buying a new smartphone, paying children's school admissions fees, funds to start a new business venture, and raising money for sister's marriage. Each of these choices require different degrees of risk calculations about future inconveniences and possible repayment failures, and each perhaps are considered amidst different contingencies. These scenarios of digital lending sum up what it means to 'live in convenience' in today's platformized society as noted by the editors of this collection. That said, all such decisions and scenarios cannot be encapsulated within the condition or discourse of convenience; rather a poetics of convenience has to be linked with affective considerations of immediacy, expediency, and aspiration. On the macro-level, the 'access doctrine', a continuing legacy of the Information and Communication Technology for Development (ICT4D) discourse, trumps everything else—the 'hope' or the 'promise' is that the mobile phone is key to any technological solution to solve the problem of access.[38] So, more than convenience, for the Indian state and the corporations, it is the access to loans through mobile phones that makes concerns about surveillance secondary.

The industrial production of convenience did not begin with platforms: there is a long legacy of washing machines and toasters that was seen to save domestic labor or of the neighborhood convenience stores and their organized chains in the form of Wawas and 7-Elevens that saved a long trip to Walmart or Albertsons.[39] While some Indians continue to value slow cooking, others have enthusiastically espoused instant Maggi noodles, and now with quick commerce, there is a 'social need' being actively created by food delivery platforms for 'instant-instant noodles'.[40] In India's entrenched social hierarchy, platforms might encode caste into values of convenience as was noticed with the food delivery platform Zomato recently announcing the "Pure Veg" fleet. Zomato suggested that it would have a segregated fleet differentiated by green uniform that would only carry vegetarian food. Rather than a vegan lifestyle, this was seen by anti-caste activists as reifying a caste-based sensory-spatial order existing in India that is fussy about how food is cooked, who handles it, with food touched by "lower-caste" people deemed impure.[41]

35 Tressie McMillan Cottom, 'Where Platform Capitalism and Racial Capitalism Meet: The Sociology of Race and Racism in the Digital Society', *Sociology of Race and Ethnicity* 6.4 (2020): 441-49.
36 Donovan and Park, 'Algorithmic Intimacy'.
37 Rahul Oka, 'Introducing an anthropology of convenience', *Economic Anthropology* 8.2 (2021): 188-207.
38 Daniel Greene, *The Promise of Access: Technology, Inequality, and the Political Economy of Hope*, Cambridge, MA: MIT Press, 2021.
39 Huberman, 'Amazon Go, Surveillance Capitalism, and the Ideology of Convenience'.
40 Raval, 'Instant-Instant Noodles'.
41 Yashee, 'Zomato's 'pure veg food' scheme is pure casteism,' Mar 22, 2024. Available: https://

While the 'analog' neighborhood kirana grocery stores continue to flourish in India, e-commerce delivery has also witnessed a significant rise. There are incongruities in this story of platformed convenience that suggests convenience does not fit all sizes at the same time. Hawkers selling fruits and vegetables in India who never had banks and landlines till recently suddenly possess smartphones through which they take loans and receive digital payments from customers via Paytm or PhonePe. An essential endnote to this story is that the hawker is still paying the online loan they took to buy the smartphone.[42] The in/convenience of borrowing apps, indeed.

Since 2015, the state and fintech companies based on India Stack and FaaS infrastructures have aggressively sought to include the until now 'unbanked' Indian citizens into regimes of 'formal' digital payments and lending through mobile phone apps. This has provided the convenience of instantaneous transmission of monetary benefits to many customers as well as predatory possibilities for third-party loan app developers and mobile phishing operators to siphon off user data. As users find themselves subjected to this collection and use of data and information at various points of the fintech's money/data distribution infrastructure supply chain, the question remains how much of this financial misinformation is a deliberate exercise of scamsters and how much of this is part of (i.e. embedded in) the networked architecture, or still better, platform ecosystem? Along with misinformation and disinformation, there is at times a lack of information (or grey/opaque zones of knowledge) as digital lending platforms cater to their diverse constituencies, including borrowers, lenders (NBFCs/banks), third-party developers, and regulators strategically positioning themselves as merely financial intermediaries. The consequences of this discursive platform politics for the financial misinformation climate and the (in)conveniences of borrowers/customers remains a question for future scholars to continue to explore.

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indianexpress.com/article/opinion/columns/zomatos-pure-veg-food-casteism-heres-why-9224719/. Am indebted to Abhishek Sekharan for pointing out this platformized connection between caste and convenience.

42 Benjamin Parkin, John Reed and Jyotsna Singh, 'The India Stack: opening the digital marketplace to the masses', *The Financial Times*, 20 April 2023, https://www.ft.com/content/cf75a136-c6c7-49d0-8c1c-89e046b8a170.

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BEYOND INCLUSION: GLITCHY ECONOMIES AND THE PROMISE OF PLATFORMIZATION IN AFRICAN CITIES

ANDREA POLLIO & LIZA ROSE CIROLIA

Digital Platforms Beyond the Discourse of Inclusion

Globally, the vocabulary of the platform economy is wide and diverse. Yet, in the African context, digital platforms tend to be framed within discourses of 'inclusion'. Providing financial services to the unbanked, integrating informal workers into structured labor regimes, and easing knowledge access for young students are some of the common promises articulated by platform advocates. Whether fin-tech, ed-tech, or health-tech, most African platforms claim to address observable exclusions linked to the developmental challenges facing African economies, cities, and dwellers.

The idea of inclusion, of course, is powerful and appealing. It caters to far-reaching global agendas, including the Sustainable Development Goals (SGDs), and more specialized ones such as the G20 Global Partnership for Financial Inclusion. Inclusion-speak enlivens the imaginations of ambitious startuppers who see Africa as the last frontier of platform innovations.[1] After all, digital technology has often been premised on the promethean faith that it can address seemingly intractable quandaries. In the late nineties, technology critics Richard Barbrook and Andy Cameron gave a name to this set of beliefs: the Californian ideology.[2] They charted how Silicon Valley had produced a culture of techno-solutionism, a bizarre alliance of progressive and neoliberal politics, which sought to find technical fixes to what may have appeared (or been constructed) as social problems. Ultimately, 'Californian ideologues' imagined that digital technology could do good (socially) while doing well (financially). Especially in the African context, where market-solutions to poverty had become the experimental terrain of what Ananya Roy more broadly termed 'millennial development', digital technology is seen as a panacea for inclusion.[3]

1 The notion of the market frontier is problematic yet a powerful emic category through which businesses operate to make risk manageable in Africa. However, for a reclaiming of the notion of frontier, see Francis B. Nyamnjoh, 'Incompleteness: Frontier Africa and the currency of conviviality', *Journal of Asian and African studies* 52.3 (2017): 253-270.

2 Richard Barbrook and Andy Cameron, 'The Californian ideology', *Science as culture* 6.1 (1996): 44-72.

3 Markets for Development, or M4D, provides a catchy buzz phrase for this ambition, formalized in many development programs including that of DFID. See Ananya Roy, *Poverty capital: Microfinance and the Making of Development*, New York: Routledge, 2010; Andrea Pollio, 'Acceleration, development and technocapitalism at the Silicon Cape of Africa', *Economy and Society* 51.1 (2022): 46-70.

Many critical scholars have usefully pointed to the limits—and indeed often predatory nature—of these experiments of digital enrollment[4]. Undeniably, such efforts reflect both neo-colonial assumptions (e.g. that African cities are a new and unregulated Wild West) and capitalist ambitions (market-making and extraction). However, our chapter takes a different approach. The notion of inclusion, we contend, expresses a linear vector of technological transformation: from being outside to being inside. For critical scholars, both inclusion and exclusion are problematic, leaving little room for optimism, maneuver or proposition. In contrast, our experience and empirical work suggest that other processes and other motivations are underway in Africa's booming digital economies. In the context of glitchy, fragmented, patchworked economic relations, platforms operate beyond the register of inclusion, enabling new forms of algorithmically-enabled ease, optimization and even pleasure—let's call it convenience. What values would a grammar of 'convenience' expose, beyond the one-way vector critique of 'inclusion'? Would the making of algorithmic convenience, as enabled by digital platforms, expand both our critical gaze and our understanding of the kinds of expertise and labor that fuels these inclusionary testbeds?

Before getting into a more detailed account of the conceptual switch that we propose—from inclusion to convenience—a brief example is in order here, one that sketches some answers to these questions. It is the story of a buoyant startup operating in the outskirts of Nairobi, Kenya. Funded by a Chinese expatriate who, like many of his peers, has chosen the East-African city to experiment with algorithmic business models, this story begins to shed light on the limitations of inclusion. And in doing so, as we will see, the example explicitly challenges simple framings of convenience. Here, we want to sit with the ambiguity that convenience brings with it, conceptually and practically. This does not negate critiques which see the enrollment in convenience as an (exclusive) luxury, glut or even laziness. Nor do we intend to ignore questions of extraction endemic to the making of conveniences for some, at times at the expense of others. In fact, as we will later show, moving away from a binary of in/exclusion, convenience specifically helps us to see the multiple displacements of effort and work now held by new bodies, systems, and processes.

Fixing Glitchy Networks

In the mid-nineties, Tiger left his hometown Shanghai to study business in the United States at one of the Ivy League schools that attract students from all over the globe. At the time, he remembers, the Jin Mao building, soon to become China's tallest skyscraper, was still under construction, its pagoda shape towering over Pudong, a rapidly changing semi-industrial area across the river from old Shanghai. By the time Tiger moved back to China in the early 2000s, armed with his business degree and a short but successful Wall Street career, things had drastically changed. China had joined the World Trade Organization, the Jin Mao building was surrounded by a multitude of even taller skyscrapers under construction, and the whole

4 Among others, see Daniela Gabor and Sally Brooks, 'The Digital Revolution in Financial Inclusion: International Development in the Fintech Era', in Kate Bayliss, Ben Fine, Mary Robertson (eds) *Material Cultures of Financialisation*, New York: Routledge, 2020, pp. 69-82.

country was teeming with opportunities for ambitious, foreign-trained talents like Tiger. In China, these returnees were amicably called sea turtles, *haigui*, a pun based on the homophony between 'returned from overseas' and the shelled reptiles that always find a way home.

Eventually, Tiger realized his success in selling cloud infrastructure services and enterprise software solutions in Beijing, in the early days of those digital economies. But a decade and a half later, now wealthy and experienced, he wanted more. The Chinese digital market was saturated, and his peers had lost that socialist drive that he himself had come to value and respect. China's technological ascendancy, Tiger explains, was made possible precisely by the capacity of homegrown entrepreneurs and firms to respond to the digital needs of the masses. True, these hardware and software companies had made staggering profits, created vehicles for massive surveillance, but they had also served the needs of what media scholar Jack Qiu has called 'working class network society'—the information have-less of the world.[5] Despite its contradictions and precariousness, the digitization of Chinese society had connected those who were, at the time, left out by profit-blinded Western digital corporations.[6]

At the very moment Tiger was thinking about finding new business challenges, Africa had started appearing in Chinese media. It was the time of the Belt and Road bonanza, and Beijing celebrated its cooperation with African nations through resounding announcements of infrastructure projects and lofty proclamations of a new era of South-South cooperation. Tiger had to see it for himself. He took a trip to Nairobi, a city that was celebrated as Africa's 'silicon savannah' in a country, Kenya, that had sealed several agreements with the Chinese government to build highways, railways, and digital corridors.[7] Leaving aside the many controversies of these large-scale projects, Tiger understood that, in a place like Nairoibi, most people had yet to be reached by these infrastructure systems. The last mile, the ultimate leg of connectivity, still fell short. Smoothly tarmacked highways and bypasses now crisscrossed the sprawling metropolis, but in many peripheral neighbourhoods, roads were still unpaved and so rutted that it was hard for a car to drive along. The same applied to electric networks, water pipes, and, ultimately, digital connectivity.

For Tiger, China's digital ascendancy held a lesson that could be exported and adapted to Nairobi's glitchy digital infrastructures. In 2019, he eventually relocated to Kenya, and opened a small Internet-service startup in the northeastern neighborhoods of the city. Here, along the highway that connects Nairobi to Thika, the landscape is dotted by master-planned estates, by unplanned, plotted urban expansions, but also by some of the densest and most populated suburbs in the city. These urban pockets host the bulk of Nairobi's lower-middle classes, in multistory concrete buildings that rise so close to each other that sometimes the crevices are

5 Jack Linchuan Qiu, *Working-class Network Society: Communication Technology and the Information Have-less in Urban China*, Cambridge, MA: The MIT Press, 2009.

6 Lin Zhang, *The Labor of Reinvention: Entrepreneurship in the New Chinese Digital Economy*, New York: Columbia University Press, 2023.

7 Michel Njeri Laura Wahome, *Fabricating Silicon Savannah*, PhD diss., University of Edinburgh, Edinburgh, 2020; Liza Rose Cirolia et al., 'Silicon Savannahs and Motorcycle Taxis: A Southern Perspective on the Frontiers of Platform Urbanism' *Environment and Planning A: Economy and Space* 55.8 (2023): 1989-2008.

less than a meter wide. Coupled with scarce investments by telecommunication companies, which installed far too few telephone towers to meet the bandwidth demands of these growing settlements, layers and layers of cement bricks render wireless mobile telecommunications technologies completely inadequate. Moreover, local mobile operators serve their customers with a "prepaid" business model based on selling tiny data packages at a marginal cost that is much higher than what people pay elsewhere in the world, when they buy large data bundles. As a consequence, people would consume online content sparingly. Data, Tiger realized, was inconvenient both in terms of physical access and in terms of its cost.

The irony was that mobile operators had been lured into the prepaid, small-data bundle business precisely by the global digital inclusion agenda. In the early 2000s, Global South-based telcos had switched to the convenience of small airtime packages precisely to "include" so-called bottom of the pyramid markets in places like Nairobi, where the majority of people could not afford to buy bulk quantities of airtime (or monthly subscriptions). In fact, mobile operators had followed the example of consumer goods multinationals—the likes of Unilever and Nestlé—in creating pocket portions of their products. Kenyans even have a specific name for this, the kadogo economy (kiSwahili for "small"): a slang with which the miniaturization of consumer staples is described, from data to soap. But this business model, critics argue, has allowed dominant companies to make staggering profit without needing to invest in large scale distribution infrastructure.

Tiger echoed this critique. Like many entrepreneurs, he'd turned himself into a makeshift ethnographer and spent months researching the digital data practices of lower-income urban dwellers. Admittedly, data provision was a difficult market with fuzzy boundaries. The inhabitants of northeastern Nairobi were not the poorest in the city by far. Neither were they truly middle-class, in a traditional sense. Their income oscillated, their indebtedness just as much. Most importantly, they were fluctuating consumers of those digital commodities that had come to represent social mobility: Instagram stories, Tik Tok shorts, YouTube videos, and, the most aspirational of all, a movie or a series on a streaming platform. Small prepaid data bundles didn't allow that, as locals could only afford 1 gigabyte per month on average, and a few episodes of a Showmax series alone would chew into half of it.[8]

Tiger's solution consisted in upending the prepaid business model. As an Internet-service provider, his company would sell time instead of data. That is, you could prepay to go online for a chosen amount of time, and with no data limitations. With a few shillings, you could spend a night binge watching a series, at a fraction of the cost charged by the mainstream mobile providers. Or you could doom-scroll an infinite number of Tik Tok videos made by famous Nairobi street comedians who cut their teeth by filming shorts in these same suburbs of the city. But you could also run a business. After all, the ground floors in the area are a maze of small shops and parlors. These have been included, indeed, in the financial ecosystem of mobile money, but rarely do they have access to the full possibilities of connectivity. Needless to say, Tiger's business proposition was a staggering success. In early 2023, less than two

8 Showmax is a South-African streaming service with a strong localization strategy in sub-Saharan Africa, producing content locally and partnering with mobile telcos.

years after starting his business officially, he had hundreds of thousands of subscribers, and a team of more than 100 locally hired employees.

How had he achieved this success? It was, in his view, a matter of last-mile infrastructure. Initially, he experimented with mobile antennas and Wi-Fi bridges. His company installed thousands of wireless routers, one on each floor of the buildings that were to be connected. This solution mimicked what Tiger had observed in the early days of the digital boom in Beijing, where lower-income residents had become accustomed to every public space in the city offering access to the Internet through Wi-Fi bridges and routers. But that model soon turned out to be unsuited for this part of Nairobi. The number of users was too high, the bandwidth was crowded and unreliable, and too many routers were an infrastructural mess for his network engineers. Eventually, Tiger's business turned to hardwired connectivity. He struck contracts with fiber providers in Kenya, and laid miles and miles of last-mile cables between small, room-sized data centers and their surrounding urban fabric. It became an incremental, trial-and-error testbed for an alternative mode of service delivery, on a large scale. Despite the difficulties, replacing Wi-Fi bridges with wires innervating every building meant that Tiger could now ensure reliability, scalability and redundancy. The convenience of reliable connectivity was not just a matter of the payment model but also a tangible solution to otherwise glitchy digital networks. Customers were happy, and their number kept growing.

Of course, the story of Tiger's low-cost Internet provider in the periphery of Nairobi does not yet have an epilogue. Small startups, even those that are already serving many clients, constantly fail and pivot. Often, as critical scholars argue, they are cannibalized by monopoly holders—big tech companies and big telcos—that incorporate frugal innovations into their businesses.[9] But even without an epilogue, this fledgling Internet startup already speaks to the permutations and adaptations of the promise of convenient connectivity, as well as its contradictions. Let's look at two examples.

Tiger's core business has been to serve an underserved mass market with access to data. But now, with hundreds of thousands of users logging on and off the network on a daily basis, the business of selling data is also a data business in itself. Even without accessing private personal data and without tracking actual online behaviours, Tiger has gathered massive amounts of information about his users; he can now delineate the market profiles of a segment of Nairobi's society that defies easy characterization. In turn, as has happened with mobile money, this data can become, for example, an alternative credit scoring system to offer the kind of pricey small loans that Nairobians rely on to cope with the precarity of their economic lives.[10] And much else. As sociologists Marion Fourcade and Kieran Healy remind us, digital companies often build personal data dragnets without a specific goal in mind, in case these troves of information may be monetized at a later stage.[11] Tiger is now considering using

9 Laura Mann and Gianluca Iazzolino, 'From Development State to Corporate Leviathan: Historicizing the Infrastructural Performativity of Digital Platforms Within Kenyan Agriculture', *Development and Change* 52.4 (2021): 829-854.

10 Kevin P. Donovan and Emma Park, 'Knowledge/seizure: Debt and data in Kenya's zero balance economy', *Antipode* 54.4 (2022): 1063-1085.

11 Marion Fourcade and Kieran Healy, 'Seeing like a market', *Socio-economic review* 15.1 (2017): 9-29.

these proxied credit profiles to offer buy-now-pay-later finance to his existing customer base. These schemes are not bad per se, but as their critics argue, they can become very extractive, with high interest rates, and unsavory practices of debt shaming. In other words, convenient infrastructures may well become the rails of predatory inclusion.[12]

Another example of Tiger's expanding business model, however, points to a different direction of his convenience-driven project. In 2021, he met a young entrepreneur, Jinny, who was planning to launch an e-commerce platform, importing the Pinduoduo model from rural China into peri-urban Kenya. Pinduoduo, one of the fastest growing e-commerce giants in China, had made its initial fortune by offering group-buying options for farmers.[13] On the heels of Pinduoduo's success in China, Jinny was working on a similar service for Kenya. But while she had a clear vision for the platform itself, she needed support for organizing the last-mile infrastructure of group buying—from the big warehouse where bulk stock is received, to the hotspots where commodities are distributed to group-purchasers. Tiger already had that infrastructure in place. His data centers, after all, already functioned as infrastructural hubs for the communities that they served. And he already employed part-time riders to move cables and equipment around. All Tiger and Jinny needed to do was join forces. And so they did. Now their customers, including the numerous small retailers that are scattered in the area, can group-buy staples like flours and cooking oil at a third of the price they'd pay from middlemen. It's a fledgling super-app, they explain.[14] In other words, the inclusionary but pricey kadogo economy has been turned on its head by the deeper convenience of a less glitchy distribution infrastructure, and an integrated logistical system that Tiger and Jinny plan to further expand in the future to include other staples like drinkable water.

As we hinted at earlier, being 'in convenience' for some—even for many, in this case—is often predicated on slight adjustments or displacements of labor, spaces, energy, profits, affects, etc. From the electric grid to the gel batteries that rest in Tiger's data centers to provide redundancy in case of electric failure, from small shops to dark stores and to the riders that make commodities move, convenience begins to foreground the limitations of the inclusion/exclusion framing.

From Inclusion to the 'Value(s)' of Convenience

The story of Tiger and Jinny's startup experiments with convenient connectivity and group-buying e-commerce speaks to our interest, as researchers of infrastructure in urban Africa, to move beyond one of the dominant vocabularies through which both advocates and critics of platform economies frame these kinds of experience: inclusion. Startups, venture capitalists,

12 Kevin P. Donovan and Emma Park, 'Algorithmic intimacy: The data economy of predatory inclusion in Kenya', *Social Anthropology/Anthropologie Sociale* 30.2 (2022): 120-139. See also Rahul Mukherjee's chapter in this volume.

13 For a broader critique of platform experiments at the rural margins of the Chinese economy, see Lin Zhang, 'Platformizing family production: The contradictions of rural digital labor in China', *The Economic and Labour Relations Review* 32.3 (2021): 341-359.

14 For a definition, see Marc Steinberg, Rahul Mukherjee, and Aswin Punathambekar, 'Media power in digital Asia: Super apps and megacorps', *Media, Culture & Society* 44.8 (2022): 1405-1419.

and sometimes even governments claim that platform-mediated inclusion (into more stable labor markets, new financial systems, payment standards, and so on) is a win-win process. It creates value for those who monetize the platforms, whatever their data-driven business model, but also for those who become entrepreneurs of and on the platform.

Take Uber, for example. We have a vivid memory of the first days in which Uber started operating in Cape Town, its promotional posters professing that a new generation of self-employed drivers would benefit from the new platform. Now included in an algorithmic system of gig work distribution, drivers could count on more flexibility, better income opportunities, access to asset financing, insurance coverage, and other perks that they would have not been able to access as informal, or even illegal taxi operators.[15] It was a powerful pitch. That promise, of course, was more honored in the breach than the observance.[16] But the example of Uber adopting the developmental vocabulary of inclusion to embed its offering in the Cape Town context is telling: even a global platform company had adapted its value proposition to claim that they were fixing a broken system (the private mobility infrastructure) of an African city. And that they were doing that through the platform-mediated inclusion of underemployed workers. At the peak of their launch marketing campaign, Uber even started sharing the personal empowerment stories of their drivers to their customers. These were short videos of how these workers—often women, migrants, and formerly disenfranchised South Africans—had gone from being excluded to being included in the South African economy.

Ridden as it is by contradictions, legal challenges, and failing business metrics, Uber is a fraught example. But it's also the tip of the iceberg in the world of digital platforms, big and small, homegrown and international, private and public, that we have been researching with other colleagues over the last half decade in different African cities.[17] These digital startups propose a pitch that is not too dissimilar to what Uber claimed in the heyday of its African launch: doing good (by fixing urban infrastructure and creating more inclusionary markets) while doing well (as a profit-driven company). These business arguments vividly resonate with the developmental language of inclusion, which has dominated the discursively powerful work of the World Bank and other development finance institutions over the last two decades at least.

Through experiments with inclusion, the Global South, and Africa in particular, have been recast as a new terrain of opportunity for California-ideology inspired businesses and humanitarian organizations that want to do good while doing well.[18] One domain of inclusion that

15 Andrea Pollio, 'Forefronts of the sharing economy: Uber in Cape Town', *International Journal of Urban and Regional Research* 43.4 (2019): 760-775.

16 Mohammad Amir Anwar, Jack Ong'iro Odeo, and Elly Otieno, '"There is no future in it": Pandemic and ride- hailing hustle in Africa', *International Labour Review* 162.1 (2023): 23-44; Pádraig Carmody and Alicia Fortuin, '"Ride-sharing", virtual capital and impacts on labor in Cape Town, South Africa', *African Geographical Review,* 38.3 (2019): 196-208.

17 Cirolia et al., 'Silicon Savannahs and Motorcycle Taxis'; Andrea Pollio, Liza Rose Cirolia, and Jack Ong'iro Odeo, 'Algorithmic suturing: platforms, motorcycles and the "last mile" in urban Africa', *International Journal of Urban and Regional Research* 47.6 (2023): 957-974.

18 Adam Moe Fejerskov, *The Global Lab: Inequality, Technology, and the Experimental Movement*, Oxford, UK: Oxford University Press, 2022.

has been more forcefully promoted (and also critiqued) has been that of digitally enabled financial markets—the fintech sector, and its role within the World Bank-sanctioned global 'financial inclusion agenda'. With the lowest banking and legacy financial service penetration in the world, African countries are indeed a prime laboratory for fintech experimentation. Its optimistic advocates claim that financial inclusion generates wealth, helps people out of poverty, and turns them into potential entrepreneurs, all the while generating new investment assets for global financial capital. Its critics point to the violence of adverse incorporation into vicious cycles of unsustainable debt, the financialization of everyday life, especially of poor households, the neo-colonial logics that underpin new datafied risk scoring techniques, and, ultimately, the fact that financial inclusion is not a good business after all, but a failed neoliberal experiment.[19]

These critiques are crucial. And yet, the notion of inclusion upon which both critical warnings and uncritical advocacy seem to rest only captures one of many vantage points from which to observe these algorithmic experiments. Economic anthropologist Janet Roitman, for example, explains that the focus on inclusion risks overshadowing the multiple and ingenious forms of value creation, rather than just extraction, that are beholden to platform-enabled financial services.[20] A linear mode of thinking about technology, she writes, primes much of the critique of the platform economy in the Global South. This linearity is not just geographical—from the North to the South—but also empirical: it assumes that platformed services simply enroll those subjects and systems that were previously, somehow, 'excluded'.

But let us return for a moment to the example of Tiger and his business, which he framed as a challenge to the motifs of inclusionary digital markets. What we see in this example, one of many we researched over the years, is that platform companies in African cities are already operating far beyond the framing of inclusion, even when the language remains more or less aligned. Their actual promise? Optimizing and fixing broken infrastructure systems. Making access to goods and services more convenient, in spite of the fractured nature of urban life. What would happen to our understanding of platform economies in the continent, if for a second, we took at face value the perspective of entrepreneurs like Tiger and Jinny, or even of companies like Uber—a perspective that, however problematic, tells us that they are fixing glitchy, broken systems, and making life more convenient?

As flagged in the introduction, platform optimization also names one easily forgotten yet fundamental rationality that animates such experiments and processes: the desire for ease (and, in the case of Uber, reliability and safety). In other words, we draw on and expand the vocabulary of convenience to engage the platform operations we have encountered during our research, which pledge to make things 'easier' for Africa's urban citizens. In fact, scholars have long posited that infrastructure and service delivery networks in urban Africa are

19 See Philip Mader, 'Contesting financial inclusion', *Development and Change* 49.2 (2018): 461-483; Gabor and Brooks, 'The Digital Revolution in Financial Inclusion'; Nick Bernards, *A Critical History of Poverty Finance: Colonial Roots and Neoliberal Failures*, London: Pluto Press, 2022.

20 Janet Roitman, 'Platform economies: Beyond the North-South divide', *Finance and Society* 9.1 (2023): 1-13.

glitchy and incomplete, where they exist at all, and constantly reworked and repaired through collective and individual practices of material improvisation.[21] For Tiger, for example, these glitches manifested in the paltry availability of Internet access in Nairobi's most populous neighborhoods—and presented a business opportunity to reduce them. More generally, as we will see in the following pages, platform-based optimization, whether in the forms of a government system for revenue collection or a remittance application, is predicated on heightening the convenience of hitherto complicated, fragmented, and frictional infrastructural systems.

Frictions of Everyday Life in Urban Africa

Thinking about the critiques of the Amazonification of everyday life in cities like San Francisco and London, maybe one day it will be possible to look at residents of African cities and ask 'how much easier do you want everyday life to be?'. But we are far off from this. Platforms have, of course, expanded to many urban economies (Kenya's M-Pesa being a commonly cited example).[22] From e-commerce to crypto wallets and on-demand services, efforts to expand the frontiers of platform capitalism are indeed prevalent. Platforms have also been used to augment social and political life in African cities—think of the use of WhatsApp for political party mobilization, reliance on social media platforms by prophetic churches, or the rise of dating and music apps of various sorts.

While remaining critical of techno-solutionism, we can also concede that the sorts of problems tech seeks to 'solve' (even if often unsuccessfully) are real problems and not merely elite agitations. Notwithstanding considerable diversity across contexts and spaces, it is widely acknowledged that African cities experience a range of shared challenges. These challenges often stem from a knotted set of processes: histories of colonization, post-independence nation-building projects, violent structural oppression within global geopolitical systems, systematic underfinancing of key infrastructures. These challenges are not abstractions; they impact people's everyday life.

The result is that cities are replete with processes that are fragmented, overlapping, inefficient, traumatized, and heavily reliant on the unpaid work of everyday people: citizens of all classes, including officials, business owners, and scholars. In this context, many celebrate the improvisations and 'make do' or adaptive tactics—as people manufacture livelihoods, devise systems to access services, or build their homes. These practices are framed as resilience, ingenuities, or frugal innovations. No doubt they are, and yet this work, while valiant in the face of duress, also consumes time, resources, and energy. These are glitchy economies causing dis-ease for many. From sitting in traffic for hours daily to navigating complex, redundant bureaucracies for registering pretty much anything (vehicles, businesses, births), to managing the ever-changing

21 Prince K. Guma, 'Incompleteness of Urban Infrastructures in Transition: Scenarios from the Mobile Age in Nairobi', *Social Studies of Science* 50.5 (2020): 728-750. See also discussion in Jonathan Silver, *The Infrastructural South: Techno-Environments of the Third Wave of Urbanization*, Cambridge, MA: The MIT Press, 2023.

22 Nancy Odendaal, 'Platform urbanism and hybrid places in African cities,' in Alessandro Aurigi and Nancy Odendaal (eds) *Shaping Smart for Better Cities: Rethinking and Shaping Relationships Between Urban Space and Digital Technologies*, London: Academic Press, 2021, pp. 203-219.

currency fluctuations that burden all manner of financial transactions, such celebrations normalize disruptions in the infrastructures that support everyday life and economies—dry taps, internet shutdowns, and rolling black-outs.

In these circumstances, African elites, middle classes and expatriate travelers have attempted to isolate themselves from some of these glitchy, taxing, and frictional systems. We can be critical of the islands of access created through boreholes and water tanks, VPNs and multiple sim cards, elevated highways, generators, and solar panels—all manner of technologies aimed primarily at easing access or living in convenience.[23] We can, at the same time, consider the incredible work (and indeed expense and expertise) that also goes into these (elite) practices of attending to what we could call the inconvenience of traffic, queues and service delivery failures.

What the case of Tiger only alludes to is the way in which platforms aim to ease the everyday frictions of urban life we just discussed. To better understand this, we must turn to the users of these platforms, whether enrolled by choice or not. This allows us to see past the developmental evangelism espoused by the creators/managers of the platforms towards a view of optimization that centers users. How might one look at optimization of a system, and the convenience that it allows, as something valuable in the context of durable strain and costly interactions which constitute many aspects of life in African cities? What, in turn, does the frame of convenience (rather than inclusion) allow us to see that critics and scholars focused on splintering or make-do or resilience overlook?

Thinking with Platform Optimization

Let us move, then, from urban enclaves to other populations who benefit from the ease afforded, in this case, by platform-enabled digital transactions. The following examples are once again anecdotal, but they allow us to reflect on the kinds of mundane ameliorations that platform processes yield in the context of inconvenient systems, and the displacements of labors that follow from the processes of optimization.

We begin this exploration in a provincial capital, Kisumu, situated on the Kenyan banks of Lake Victoria. The lobby of the Kisumu City Authority, while now technically a part of the County administration, is not unlike many smaller local governments in Africa. Its three levels, accessed through dark wood balustrades, hold a series of offices for the various technical functions of the city, including trash collection within the CBD, non-motorized transport and building plan approval, among other intermediate functions. In terms of staff, the largest department located in this building is revenue collection. Not only does the activity occupy several offices, but in fact the entire first floor and courtyard.

23 What scholars would call the 'splintering' of urban infrastructure. See Stephen Graham and Simon Marvin, 'Splintering urbanism at 20 and the "Infrastructural Turn"', *Journal of Urban Technology* 29.1 (2022): 169-175.

When entering the building, maybe to pay your monthly property rates or annual business license, you are immediately greeted by the Kenya Commercial Bank Tellers, with lines at each that stretch back towards the entrance. There is a TV to keep the waiters occupied, in the intense heat that is common in the Lakes region. After payments are made, these lines slowly trickle into the building's courtyard. Here, there is another set of waiting areas, where people wait - again - in a spiraling line in the little shelter provided by the shade of the building. And again, people line up to have the payment logged and be provided with a city receipt to confirm payment. Depending on the time of day, month and year, this process can take anywhere from half an hour to several hours. And such a process is repeated for each payment.

In the last ten years in Kenya, as the case of Tiger indicates, there have been shifts towards the digitization of payments in many sectors, including for state services.[24] This is, of course, not only the case in Kenya. Many African cities are transitioning onto platforms to support online payments, citing 'digital dividends'.[25] These efforts are framed by their donors and higher levels of government as 'good governance' measures, often against the backdrop of tropes of petty corruption in the process of fee collection. It aligns with the focus of many donors on raising sub-national revenue streams. However, we would argue that their value sits less in the panoptical disciplining of sub-national functionaries. If we orient ourselves towards the citizen—one of the user groups of these platforms—the value sits in the alleviation of waiting in multiple lines, collecting slips, and losing half of a day or work or rest. In interviews with people waiting in lines, most on their phones responding to messages or watching clips, they lament the taxing experience, taking turns standing by a fan which once had the capacity to swivel. Since we first visited Kisumu in 2018, most of these people are now able to use their phones to pay these fees. They no longer have to travel to Kisumu's city center to pay for such fees, or spend their day moving from desk to desk. These affordances are hardly an unearned luxury, but rather a much-needed relief.

Another example of an opaque and frustrating system which platforms promise to ease is that of remittance corridors. From Kisumu, we now move back to Cape Town. The city is home to migrants from across Africa, many of whom need to send portions of their earnings to relatives in their hometowns and villages. The market for intra-Africa remittances has been dominated by Western Union, which has a reputation of being costly and extractive.[26] Until recently, therefore, sending remittances through this existing financial infrastructure has not only been expensive—with significant losses accruing to already very precarious people—but also time consuming, with transactions taking days to clear. When a family needs money urgently, this can be very stressful.

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24 Romanus Opiyo et al., 'Attaining E-democracy through digital platforms in Kenya', in T.M. Vinod Kumar (ed) *E-Democracy for Smart Cities*, Singapore: Springer, 2017, pp. 441-459.

25 For an example of this discourse, see World Bank, *World Development Report 2016: Digital Dividends*, Washington, DC: World Bank, 2016.

26 Peter Mudungwe, *Leveraging the African Diaspora for Development*, The Hague: African Diaspora Policy Centre, 2017, https://www.diaspora-centre.org/wp-content/uploads/2017/10/Leveraging_Diasporas_for_Development.doc.pdf; Daniel Folkinshteyn, Mark M. Lennon, and Tim Reilly, 'The Bitcoin Mirage: An Oasis of Financial Remittance', *Journal of Strategic and International Studies* (2015), https://ssrn.com/abstract=2601621.

It is therefore not surprising that remittances at large, and intra-Africa remittances specifically, have come to be a fertile site through which platform optimization finds traction. On the back of Cape Town's self-declared position as both start-up and fintech capital of Africa,[27] Cape Town-based platforms like Mama Money and Mukuru have attempted to reduce costs (down to around 5%), improve the speed (within the hour), and enable migrants who do not have advanced documentation access (through reduced KYC).[28] The founders boast social visions, the former started by two men who met en route from a festival in the desert of South Africa and the latter by a Zimbabwean-born, South African-educated, and London-based entrepreneur and rock musician. While the founders' explanations are replete with questionable development jargon, the people who use the platforms praise them. Betty, a Congolese businesswoman who sells Cape Malay curries and samosas at a local market in Cape Town explained to us how the platform allows her to send money from wherever she is, just using her phone: no more lines, abusive tellers, or endless return visits to track the payment.

Many flags can be raised. And of course, we should be attentive to the ways in which the enrollment of taxpayers, migrants, and many other economic subjects can be exploited through (financial) platforms of different nature—not to mention who is excluded. At the same time, it is undeniable that such platforms ease certain aspects of urban life beyond the enclaves of the wealthy middle class, enabling people to overcome the enduring strain and glitchy nature of bureaucratic and economic processes. In this case too, convenience displaces the burden of work required to move money from informal and small-scale money agents to dedicated programmers and data scientists whose (well-paid) labor is necessary to ensure seamless transactions between financial institutions, telecommunication providers, last-mile outlets and end-users.

Convenience Reconsidered

Notwithstanding these vignettes, and perhaps unlike many parts of the world, few would call African cities convenient. Even among the wealthy who can afford cleaners and childcare, given the sheer scale of infrastructural fragmentation—fuel scarcity, traffic jams, internet shutdowns—money's capacity to ease meets its limits. We did not intend, in this chapter, to present African cities as somehow exceptional, immune to the expansion of platform capitalism or to capricious overconsumption. Rather, what we hoped to do was adopt a different starting point for charting the value(s) of convenience across diverse geographical contexts.

Often relegated to the binary between exclusion and inclusion, and to the warnings of predatory, or so called 'adverse' inclusion, platformization processes underway in African cities call for a different grammar of analysis and a different orientation towards these emerging economies (as well as the people who animate them). As other authors in this volume argue,

27 Andrea Pollio and Liza Rose Cirolia, 'Fintech urbanism in the startup capital of Africa', *Journal of Cultural Economy* 15.4 (2022): 508-523.

28 See Liza Rose Cirolia, Suzanne Hall, and Henrietta Nyamnjoh, 'Remittance Micro-Worlds and Migrant Infrastructure: Circulations, Disruptions, and the Movement of Money', *Transactions of the Institute of British Geographers* 47.1 (2022): 63-76.

convenience can be a strategically awkward category of analysis, one that sits ambiguously between critique and recognition that not all forms of ease are unnecessary or consumeristic indulgence. In fact, the examples in this chapter speak to the variegated forms of optimization that do in fact transform glitchy and vexing urban systems and infrastructure in Africa. Ultimately, in addition to the acknowledgement of these optimized fixes, convenience also allows us to see some of the displacements or the shifts that platform economies entail: from humans to servers and data centers, from shops to dark kitchens, from one type of labor to another. However one may feel about these movements, the lenses of convenience, and especially the perspective that convenience offers us from African cities, brings to the fore again the technological ambivalence of platformization and the need to engage the full gamut of possibilities therein—possibilities that are too often foreclosed both by the makers and the critics of platforms.

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EASY WINS AND LOW HANGING FRUIT. BLUEPRINTS, TOOLKITS, AND PLAYBOOKS TO ADVANCE DIVERSITY AND INCLUSION IN AI

TOMASZ HOLLANEK AND MAYA INDIRA GANESH

The emergence of AI has been accompanied by myriad moral and philosophical questions. Some of these are speculative intuition pumps to activate a philosopher's muscles of reasoning: 'which way should the train trolley with the failed brakes be directed—jeopardizing the life of one person working on the track, or five?' There are more complex and pressing real-world questions as well, like: should commercial art and design companies be pointing their employees to generative AI image-making tools to speed up the ideation process? And, similarly: should large language models be trained by psychologists and psychiatrists to deliver therapeutic services to people with mental health conditions, thus making mental health services cheaper and more accessible? In tandem with the emergence of AI technologies and the ethical and moral challenges they animate, come lists of high-level ethics principles to be prioritized by developers to ensure their products' desirable social impact: human rights, fairness, non-discrimination, privacy, transparency, accountability. New legal requirements such as the European Union's AI Act set out bright lines around applications at high levels of risk, including credit scoring, targeted profiling, facial recognition, and automated hiring. These bright lines have emerged thanks to documentation and analysis of risks and harms in various contexts. However, the speed and scale at which AI technologies function, the social and cultural complexities emerging at the sites of their application, and potential harms emergent therein present challenges for the software development community. How should the ethical concerns associated with AI be managed and mitigated? How will they be framed, broken down into manageable parts, and addressed through computational, social, and policy actions? How can development teams be eased into openly and consciously engaging in ethical deliberation as part of the design process? The question here is not about *whether* ethical reasoning *could*, in fact, be turned into something modular, formulaic; into a pattern to be adopted by designers. Nor is it about the consequences of translating 'ethics' into user-friendly forms and formats that developers can immediately recognize and, therefore, operationalize. If *convenience* is the 'condition we inhabit within contemporary capitalism,'[1] the key question is *how*? How can inconvenient questions about the trade-offs and conflicts of interest be posed in ways that are both legible and bearable to those in the position to transform the development pipeline?

Enter the toolkit. A toolkit is a design staple, a set of ready-to-use practices to solve a problem or achieve a specific goal. A toolkit's promise is scaling and continuity; that a set of instructions, practices, or workflows will deliver a consistent, desired result. Sometimes that result is just

1 Joshua Neves and Marc Steinberg, 'The Cultural Politics of In/Convenience', *Global Emergent Media: In Progress*, January 2023, https://www.globalemergentmedia.com/in-progress/the-cultural-politics-of-in%2Fconvenience.

a *process,* rolling out across diverse spatial and temporal locations. As such, toolkits are a favored methodology when things are to be made collaboratively and collectively, and when the vagaries of time and place introduce discrepancies or inconsistencies. It is precisely the assumption that AI can be *designed* to adhere to sets of values to avoid perpetuating harm that brings AI ethics into the ambit of design. And it is the prevalent belief that following a predetermined process can ensure that the end-product is ethical and responsible that establishes the toolkit as the primary instrument of AI ethics. The ongoing *toolkitification* of AI ethics, the subject of this essay, reformulates ethical practice as frictionless, modular, as something that *can* and *should* be made convenient and scalable, and, as such, responds to the demands of *convenience* as a means of grappling with the complexity of our contemporary condition.

This complexity is software itself; its chains of supply and demand, infrastructural politics and extractivism; its code—a palimpsest of social, economic, and cultural norms and values; its power that, to its developers, is not a mysterious unaccountable force but something to be tamed, trained, or taught. Software is supposed to make life and work easier. Software is supposed to make the building of more software easier; modularity makes this possible. Modularity is a central organizational logic of software and is about the division of labor;[2] it enables reach and, in this way, makes building elaborate projects more convenient—both to imagine and to execute. In their study of how software developers assess their own professional accountability for the ethical harms and lapses of AI and algorithmic technologies, David Gray Widder and Dawn Nafus argue that, just as modularity helps to 'minimize friction as the code passes through many hands',[3] ethical challenges are similarly 'encapsulated into a module of work' so as not to 'introduce friction into the development process'.[4] It is the kind of division of labor that underlies 'convenient media'.[5]

Yet, managing, overseeing, tending to, and patching software requires its own elaborate system of systems. The 'countervailing tendencies' of elaborate software as simultaneously modular and Byzantine, unknowable and yet accessible, serve a specific challenge for an ideological or values-driven social or cultural project;[6] in this case, the work of correcting and reshaping institutional and technological systems, like AI, to be inclusive and equitable. For values and ideologies are also simultaneously highly contextual, shifting, broad, diverse, and yet also translatable into specific actions, positions, and normative rules. Translation requires engagement beyond individuals, with institutional and structural actors and norms; this draws us yet again to the vastness of systems. There's a mirroring here between software, and ideologies and institutions that design toolkits propose to intervene in but remain trapped by.

2 Lev Manovich, *The Language of New Media*, Cambridge, MA: The MIT Press, 2001, pp. 30-31.
3 David Gray Widder and Dawn Nafus, 'Dislocated accountabilities in the "AI supply chain": Modularity and developers' notions of responsibility,' *Big Data & Society* 10:1 (2023): 2.
4 Widder and Nafus, 'Dislocated accountabilities in the "AI supply chain"', 7-8.
5 Neves and Steinberg, 'The Cultural Politics of In/Convenience'.
6 Miriam Posner, 'Breakpoints and Black Boxes: Information in Global Supply Chains,' *Postmodern Culture* 31:3 (2021), https://www.pomoculture.org/2021/12/01/breakpoints-and-black-boxes-information-in-global-supply-chains/.

Toolkitification: the Making-convenient of 'Ethics' in and for AI Design

There is no agreed-upon definition of a design toolkit as the term might refer to both technical resources and educational brochures, to static text documents and interactive, web-based applications.[7] It is often used interchangeably with a singular tool, guideline, method, or blueprint. And yet, we can identify toolkit-ification as an industry-wide phenomenon occurring in response to the growing awareness of the risks and liabilities related to AI development. The OECD's Catalogue of Tools & Metrics for Trustworthy AI,[8] the biggest collection of its kind featuring over seven hundred toolkits (at the time of writing), speaks to the scale of this trend.[9] The landscape of AI ethics toolkits is even wider, encompassing radical design ideation tools and wiki-style web pages, such as the Intersectional AI Toolkit by Sarah Ciston.[10] So wide, in fact, that 'toolkit-scoping', the act of comparing available toolkits and testing their usefulness for AI professionals, has become a sub-genre of AI ethics research.[11] What this toolkit-scoping work makes clear is that the toolkit paradigm privileges certain kinds of information, worldviews, and practices in its organization and presentation, and in doing so discursively re-shape what (AI) ethics *is*.[12] Specifically, the toolkit implies that ethical conflicts and challenges associated with AI can be managed and that ethical practice is feasible and approachable. Toolkits for trustworthy, safe, responsible, and ethical AI make a promise: that the tools they contain are easily *adoptable* within existing workflows and *adaptable* to a particular team's needs, and that ensuring AI is made responsibly doesn't imply a procedural revolution—only selecting and applying an appropriate tool at the right stage of the design process.

The modularity of software development meets attempts at 'translating' the 'theory' of AI ethics into development 'practice'. Just like software is composed of smaller, constituent parts that can be swapped out, reconstituted, and re-assembled, 'ethics work' is embraced in terms of a similar organizing principle, as sets of actionable practices that can be stacked on and slotted in. The most evocative example of an ethical issue getting turned into a development module is the matter of AI bias; 'technical tools to remove bias' are, for instance, among the most sought after by the users of the OECD's Catalogue of Tools for Trustworthy AI.[13] This particular approach to toolkitification of AI ethics that frames ethics work as technical work has already been criticized for de-emphasizing the social, collective, and cultural value of diverse stakeholders' knowledge and engagement with AI—flattening and decontextualizing ethics by

7 Dorian Peters, Lian Loke, and Naseem Ahmadpour, 'Toolkits, cards and games – a review of analogue tools for collaborative ideation', *CoDesign* 17:4 (2020): 410-434.

8 OECD, 'Catalogue of Tools & Metrics for Trustworthy AI', *OECD.AI Policy Observatory*, https://oecd.ai/en/catalogue/tools.

9 Tomasz Hollanek, 'The Ethico-politics of Design Toolkits: Responsible AI Tools, From Big Tech Guidelines to Feminist Ideation Cards,' forthcoming.

10 Intersectional AI Toolkit, https://intersectionalai.miraheze.org/wiki/Intersectional_AI_Toolkit.

11 Hollanek, 'The Ethico-politics of Design Toolkits'.

12 Richmond Y. Wong, Michael A. Madaio, and Nick Merrill, 'Seeing Like a Toolkit: How Toolkits Envision the Work of AI Ethics,' *Proceedings of the ACM on Human-Computer Interaction* 7, Issue CSCW1 (2023).

13 OECD, 'Catalogue of Tools & Metrics for Trustworthy AI'.

proposing generalizable and scalable practices.[14] But Widder and Nafus also highlight in their study the kind of ethics work that no one even attempts to turn into a development module; they show that this sort of work is 'frequently left undone or cast as low status work, offloaded to contractors' or turned into 'administrative labor no one else want[s] to do'.[15] Our interest lies precisely in the challenges that are seemingly 'untranslatable' into neat and prepackaged work modules, into additional steps conveniently fitting the already established development pipeline, and how design toolkits nonetheless promise to facilitate this difficult, inconvenient work—to help their users address complex issues, such as discrimination of marginalized groups perpetuated by AI systems, comprehensively and systematically. To think through the effects of toolkitification as a process of making 'ethics' convenient in and for AI design, we will look at a set of toolkits that aim to ensure AI is equitable and inclusive. These toolkits move beyond the 'remove-bias' type of work and indeed acknowledge the complexity of the ethical issues at hand. Yet they also promise to make these issues more approachable and bearable, and the processes of addressing them not only manageable but also, at times, *fun*.

Diversity, Equity, and Inclusion in AI

DEI or Diversity, Equity, and Inclusion (also referred to as DEI) is positioned as both a challenge and solution to AI's problems. While unfair, biased, and discriminatory outcomes along the lines of gender, race, class and intersections of these have emerged from the large-scale applications of algorithmic and automated technologies, these problematic consequences of AI deployment have also led to the establishment of the field of public, industrial, and academic inquiry into the ethics of algorithms and ethics of AI. Incident databases and registers aggregate the various biased outcomes of algorithmic decision-making.[16] Well-known cases include: Amazon's infamous Rekognition tool that negatively discriminated against women's CVs; the ProPublica investigation that revealed racially biased outcomes in a recidivism prediction algorithm; the UK government's disastrous A-level algorithm to predict school-leaving grades that delivered results along the lines of class and postcode. Yet, the business magazine Forbes reports that, according to startups in HR and recruitment, AI applications can enable DEI by identifying biased or stereotypical use of language in job advertisements and by identifying patterns of marginalization or disconnectedness among existing workers.[17] DEI is positioned as a solution to the 'white guy problem' in AI: the lack of gender, racial, and social diversity among AI's most powerful designers and developers is seen as a major influence on AI being biased and discriminatory in the first place.[18] DEI, understood as an equity measure, corrects the profit and power imbalance associated with AI to a wider community.

14 Wong, Madaio, and Merrill, 'Seeing Like a Toolkit'. See also, Thilo Hagendorff, 'The Ethics of AI Ethics: An Evaluation of Guidelines,' *Minds & Machines* 30 (2020): 99-120.

15 Widder and Nafus, 'Dislocated accountabilities in the "AI supply chain"', 8.

16 See AI Incident Database, https://incidentdatabase.ai; AIAAIC Repository, https://www.aiaaic.org/aiaaic-repository.

17 Rebekah Bastian, 'AI Brings Opportunities And Risks To Workplace DEI Efforts,' *Forbes*, 8 May 2023, https://www.forbes.com/sites/rebekahbastian/2023/05/08/ai-brings-opportunities-and-risks-to-workplace-dei-efforts/?sh=4614ed8b4b2a; Jia Rizvi, 'How AI Can Be Leveraged For Diversity And Inclusion,' *Forbes*, 19 November 2023, https://www.forbes.com/sites/jiawertz/2023/11/19/how-ai-can-be-leveraged-for-diversity-and-inclusion/?sh=6565f7af4ee9.

18 Kate Crawford, 'Artificial Intelligence's White Guy Problem', *The New York Times*, 25 June 2016, https://www.nytimes.com/2016/06/26/opinion/sunday/artificial-intelligences-white-guy-problem.html.

If the very imagination of AI mirrors the aspirations of the white cis-male heteronormative elite that populated the universities and military industrial complexes that AI and computing emerged from,[19] then DEI in AI assumes that pre-existing, data-driven algorithmic bias might be spotted (better, earlier?) if people from marginalized and minoritized communities were involved in the high-level design and development of AI. Moreover, such a diverse workforce of decision makers might dilute the Silicon Valley monoculture that currently predominates AI futures.[20] Some organizations are bringing participatory, community-driven, embodied, and scientific approaches to DEI. These include: Black in AI, a network of Black data scientists working in AI; Our Data Bodies, a community-based research organization that investigates how digital information from marginalized communities are collected, stored, and used by governments and corporations; Data for Black Lives, a nonprofit focused on using data science for positive change in the lives of Black people; and the Carceral Tech Resistance Network, a campaign coalition against the experimental adoption and testing of technologies police, prisons, and border enforcement.[21]

Despite these efforts, aspirations to DEI in AI are also met with fatigue or scorn as principled high-level commitments betray reality. This happens when the optics of diversity becomes a proxy for actual diversity. We are reassured of DEI when we can see it, when it is visible: spotting, for instance, women speakers on a panel, or on the web page of an organization's leadership team. It is in response to this misinterpretation of DEI goals that new AI initiatives have begun to emerge. Rosebud.Ai, for instance, works in gaming, branding, and digital marketing, and offers to cut through the cost and effort of a photo shoot—and finding diverse human models—by creating synthetic images of diverse people for websites and gameworlds. In the same vein, the organizer of a 2023 tech conference created fake profiles of speakers using generative AI tools to suggest that his conference was gender-diverse.[22] The case of generative AI being used to generate fake diversity is troubling and instructive here: it alerts us to a minimization, a coloring-by-the-numbers approach to DEI, a shortcut that speaks to DEI being, in fact, something at the end of a drop down menu or a box that has to be ticked off.

19 The work of Alison Adam, whose early critical work pioneered feminist engagement with AI, is exemplary here since she asks key questions of where our notions of intelligence and rationality come from, and situates the relationship between place, embodiment, and knowing. See Alison Adam, *Artificial Knowing: Gender and the Thinking Machine*, London: Routledge, 1998.

20 In the past half decade there has been a veritable flourishing of alternative, diverse adoptions *and* refusals of AI by artists, organizers, designers, and scholars. Popular books by academics include Joy Buolamwini, *Unmasking AI: My Mission to Protect What Is Human in a World of Machines*, New York: Random House, 2023; Safiya Umoja Noble, *Algorithms of Oppression: How Search Engines Reinforce Racism*, New York: New York University Press, 2018; Meredith Broussard, *Artificial Unintelligence: How Computers Misunderstand the World*, Cambridge, MA: The MIT Press, 2018; and Ruha Benjamin, *Race after Technology: Abolitionist Tools for the New Jim Code*, Cambridge, UK: Polity Press, 2019.

21 Sarah T. Hamid, 'Community Defense: Sarah T. Hamid on Abolishing Carceral Technologies,' *Logic(s)* 11: Care (2020), https://logicmag.io/care/community-defense-sarah-t-hamid-on-abolishing-carceral-technologies/.

22 Natalie Lung and Ella Ceron, 'Developer Conference Axed After Fake Female Profiles Outcry,' *Bloomberg*, 27 November 2023, https://www.bloomberg.com/news/articles/2023-11-28/tech-conference-faces-backlash-on-claims-of-fake-women-speakers.

Even when AI companies do commit to DEI efforts to push beyond surface-level change, these are met with resentment when business decisions undermine the original pledges. For instance, when Kay Cole James, a vocal anti-LGBTQ campaigner, was appointed to Google's AI advisory council, the choice was vigorously opposed by the company's employees,[23] who argued the appointment made clear that Google's 'version of "ethics" value[d] proximity to power over the wellbeing of trans people, other LGBTQ people, and immigrants'.[24] In another example, the high-profile firing of Timnit Gebru from Google's Ethical AI team in December 2020 was seen as an attack on one of the few highly decorated black women computer scientists in AI vocal about the negative social and environmental consequences of development.[25]

Sara Ahmed writes in *On Being Included: Racism and Diversity in Institutional Life* that the work of inclusion in institutions is unrewarded, unrecognized labor often done by the very people who are affected by the lack of real DEI.[26] Diversity work is institutional transformation work, says Ahmed; she offers us rich language to consider what diversity work is and what its workers must do. She uses hard, material, infrastructural terms referring to 'sedimented' institutional practices that must be unsettled through confrontation of discrimination and lack of diversity and equity;[27] to working as 'institutional plumbers'; to being the person(s) who moves 'against the flow' of the everyday.[28] The flow of 'business as usual' that diversity work disrupts is not actually a flow, she says; those experiencing discrimination, bias, and a lack of inclusion and equity experience 'flow' as something solid. Diversity work, in other words, is about working with immobility and immobilization. And it is usually the work of those who do not quite fit into pre-existing norms, hence the requirement of DEI in the first place. Diversity work is hard work. It is precisely this type of work that cannot be encapsulated into a software development module, seamlessly fitting existing workflows. It is the kind of work that, as Widder and Nafus demonstrate, is turned into 'administrative labor no one else want[s] to do'.[29] And it is also the kind of work that new ethical AI toolkits that we analyze in what follows promise to make easier, manageable, frictionless—in other words, convenient.

Toolkitificiation of DEI in AI

In this section, we compare several blueprints, toolkits, and playbooks that aim to help AI providers meet the goals of inclusivity and equity in AI development, deployment, and governance.

23 Jillian D'Onfro, 'Google Employees Protest 'Anti-LGBTQ' Conservative's Appointment To AI Ethics Council,' *Forbes*, 1 April 2019, https://www.forbes.com/sites/jilliandonfro/2019/04/01/google-employees-protest-anti-lgbtq-conservatives-appointment-to-its-ai-ethics-council/?sh=776ce37413e1.

24 Googlers Against Transphobia, 'Googlers Against Transphobia and Hate', *Medium*, 1 April 2019, https://medium.com/@against.transphobia/googlers-against-transphobia-and-hate-b1b0a5dbf76.

25 Tom Simonite, 'What Really Happened When Google Ousted Timnit Gebru,' *Wired*, 8 June 2021, https://www.wired.com/story/google-timnit-gebru-ai-what-really-happened/.

26 Sara Ahmed, *On Being Included: Racism and Diversity in Institutional Life*, Durham, NC: Duke University Press, 2012.

27 Ahmed, *On Being Included*, pp. 175-176.

28 Ahmed, *On Being Included*, p. 186.

29 Widder and Nafus, 'Dislocated accountabilities in the "AI supply chain"', 8.

As mentioned, there is no single, agreed-upon definition of a *toolkit* that would distinguish it from other formats, such as a guideline or blueprint—terms often used interchangeably. So, for ease, we refer to all of the following as toolkits. We search for commonalities in their framings of the difficult work that Ahmed refers to as 'institutional plumbing' to examine how toolkitification makes what is uncomfortable approachable, the complex manageable, and the irresolvable frictionless.

The first among these is the *Mitigating Bias in Artificial Intelligence: An Equity Fluent Leadership Playbook* (2020), produced by the Center for Equity, Gender, and Leadership at the Haas School of Business (University of California, Berkeley). The Playbook is a 62-page PDF document introducing AI business decision-makers to the matters of DEI in AI. It is accompanied by a website from which users can download the titular 'plays'—identifying necessary 'moves' ('Enable diverse and multi-disciplinary teams working on algorithms and AI systems'), relevant 'players' (such as 'C-suite' or 'Human Resources'), and useful 'tools' (such as the Alan Turing Institute's Diversity Dashboard). Next is the *Action Toolkit on Inclusive AI* (2021), developed by the Women4AI Daring Circle of the Women's Forum for the Economy & Society, in collaboration with UNESCO, the Oxford Internet Institute (OII), Shearman & Sterling, and Price Waterhouse Coopers. While the Action Toolkit is, similarly, a PDF document, it is slightly shorter (only 30-pages long), and aimed at both business and technical professionals, making a case for inclusive AI and introducing some initial measures of success, as well as linking to further, specialized tools. Then, we refer to *A Blueprint for Equity and Inclusion in Artificial Intelligence* (2022), by the Global Future Council on Artificial Intelligence for Humanity under the World Economic Forum (WEF), a 30-page long white paper presenting readers with issues related to equity and inclusion at various stages of the development cycle, and linking to both DEI-relevant tools, as well as application case studies. Finally, we also analyze *A Blueprint for Equitable AI: Building and Distributing Artificial Intelligence for Equitable Outcomes* (2023), from the Aspen Institute's Science & Society team with sponsorship from Google DeepMind. While this last, 34-page document does present ideas for potential strategies to meet DEI goals in AI, it is in fact a report summarizing insights from a series of workshops convened by the Aspen Institute team, and, as such, is the most general and least 'action-oriented' of the selected toolkits. We refer to them as the Haas, Women4AI, WEF, and Aspen toolkits, respectively.

Despite differences in the approaches proposed by these toolkits, we find similarities in how they structure the relationships between different stakeholder groups—business decision-makers, developers, policymakers, as well as users of AI systems—and individual tools and methods to achieve the goals of DEI in AI. They frame the complexity of DEI in AI in terms of several dialectical tensions: they aspire to comprehensiveness while being comprehensible to various stakeholders in the development process; being research-informed, easily digestible and jargon-free; actionable but not simplistic; and necessary yet playful.

Comprehensive (and Comprehensible)

The first common feature of the toolkits we selected is their intended audience: they are designed to be used, at least seemingly, by everyone in the AI ecosystem – not only design-

ers, data scientists, software engineers, but also business decision-makers, board members, and policymakers. The WEF toolkit, for instance, explicitly addresses 'managers and teams responsible for the different stages of AI development, as well as decision-makers from all sectors part of the AI ecosystem' and also includes suggestions for governments, while the Women4AI 'instrument' has been 'created for C-suite executives, technologists, HR managers, board members, developers, engineers and anyone who wants to change practice, policy, strategy and attitudes within their organization towards ethical, inclusive AI'. Only the Haas toolkit targets business decision-makers, but these are understood broadly, to include 'a CEO, a board member, an information / data / technology officer, a department head, a responsible AI lead, a project manager'. And yet, despite this broad spectrum of the toolkits' intended users, all four toolkits address only those who are already present at the metaphorical design table, rather than those who are still missing—the stakeholders who are most likely to bear the brunt of the negative impact of AI development and whose involvement in the design process the toolkits are supposed to encourage.

Related to this seemingly broad spectrum of intended users is another consistent feature of our selected DEI toolkits: they all acknowledge that the challenge of making AI more equitable and inclusive extends beyond technical questions of data bias and needs to be addressed comprehensively at different stages of the development process and in different parts of the AI ecosystem. This is key because the conception of DEI that the selected toolkits embody does not amount to 'bias-eradication'—the toolkits are nowhere near as simplistic and take DEI work seriously, recognizing that it is hard work that must happen at various stages of the design, development, and deployment process. While the WEF toolkit aims to 'paint a comprehensive picture of challenges and opportunities for improvements in equity and inclusion across the AI development life cycle and governance ecosystem', the Haas toolkit notes it is precisely because of the need to intervene at all the stages of the production pipeline that 'addressing bias in AI is an issue for business leaders' rather than technical workers, requiring changes in hiring practices, among others. Women4AI similarly promises to guide users through the necessary steps in transforming both the 'organizational culture' and aspects of the design and development practice, encouraging design teams to be 'as close as possible to the populations likely to use it or be affected by it', while the Aspen toolkit provides suggestions ranging from concrete tips for changing the AI production process, such as 'embedding the topic of inclusivity into training for development team members', to more general ones, such as 'preparing young people for AI through ethical tech education'. Because of this promise of comprehensiveness, the toolkits conflate design with policy: they merge different genres, methods, and perspectives to ensure that they remain the only necessary entry point to the question of inclusive and equitable AI for anyone—business decision-makers, regulators, or software developers.

As the toolkits aspire to comprehensively tackle issues of equity and inclusivity, it is crucial to highlight that each toolkit serves as a meta-toolkit, linking to more specialized tools, methods, and guidelines. For instance, the WEF toolkit links its users to the *AI Fairness Global Library*, where 'other knowledge resources from leading institutions can be found to deepen the topics presented', while the Women4AI toolkit includes a list of other toolkits for 'technical audiences that seek to improve the ethical and inclusive practices of AI systems', including

the Microsoft's Responsible Innovation Toolkit and PwC's Responsible AI Toolkit. The apparent convenience of equitable AI toolkits is related precisely to this conception of comprehensiveness: they are meant to be designed for *everyone*, include information on *all aspects* of the equity and inclusivity challenge, and gather (or link to) *everything*—all the necessary tools and methods—one requires to tackle this challenge. This *comprehensiveness* the toolkit creators have in mind is meant to acknowledge the complexity of the issues at stake, but not foreclose their *comprehensibility*; on the contrary, *comprehensiveness* in this context becomes synonymous with *comprehensibility*. It implies not information-overload, but total parse-ability, making the questions of DEI 'accessible' to actors not usually burdened with DEI-related work.

Informed (but 'jargon-free')

The selected toolkits are informed by a vast amount of research and consultations with experts, and the toolkits' creators make this critical work purposefully explicit, detailing the processes that led to the toolkits' creation. This suggests rigor. The Aspen toolkit, for instance, presents the insights drawn from discussions of 'two diverse groups of experts', including the legal scholars Lilian Edwards and Sandra Wachter, and the data scientist Cathy O'Neil—well known for their work on technology regulation, privacy, and feminist data science. The Haas toolkit similarly draws from 'academic literature and experts across disciplines – spanning sociology, philosophy, engineering and more', including the sociologist Gina Neff, the computer scientist Stuart Russell, and the Managing Director of the AI Now Institute Sarah Myers-West. The WEF toolkit, in turn, was created, by the Global Future Council on Artificial Intelligence for Humanity, whose members include Angie Abdilla, specializing in indigenous knowledges and their relation to technology production, and Safiya Umoja Noble, the author of *Algorithms of Oppression* (2018). The critical work of these scholars who are dedicated to exploring how machine learning-based technologies reproduce or exacerbate social inequities would certainly be considered 'inconvenient' by some decision-makers within technology companies because they are radical in the sense of identifying the *root* of inequity, bias, and discrimination. To pull things out by the roots is the sort of work that Sara Ahmed refers to as confronting the 'sedimentation' of institutional practice that does not acknowledge or make room for diversity.

Here comes the toolkit with its promise of 'translation' between disciplines and negotiation between different, potentially conflicting goals. The WEF toolkit, for example, promises to map 'the vast amount of equity and inclusion challenges' in the AI production and governance ecosystem to then integrate them into 'a *digestible* framework' (our emphasis), while the Haas toolkit sets itself apart from other available tools by promising to do the 'crucial translational work' and present 'conversations around "bias" in AI'—which can be, as it turns out, 'muddled and mean or refer to various concepts'—in a format that is 'jargon-free and comprehensive'. The toolkit may refer to key AI ethics experts and institutions to legitimize itself as an instrument of pro-justice change in AI. Yet, the very act of 'translation' or 'adaptation' of the critical insights derived from critical AI ethics work for the purposes of corporate change can, inadvertently, result in the 'taming' of critical, and often radical, positions; likely ridding them of their transformative potential. The logic of the toolkit is that inconvenient or upsetting perspectives—including the views of critical AI scholars whose views informed the development of the equity toolkits in the first place—are toned down, made appealing, and bearable.

Necessary (but Playful); Actionable (but not Simplistic)

The selected toolkits strategically frame the work they facilitate as *essential*, rather than optional. The Aspen toolkit says, '[p]ausing technological development and deployment until all concerns are addressed is not feasible', yet it is 'critical to ensure that processes and institutions exist to champion and implement efforts toward achieving equitable outcomes.' This necessity extends beyond societal value; as the toolkits suggest, making AI more inclusive translates to business value. The Women4AI toolkit highlights that equity and inclusivity in AI development is 'ultimately about helping your organization avoid the risks from biased outcomes and reap the rewards from economies and societies which increasingly expect inclusion as standard'. Likewise, the Haas toolkit underscores that using the tools and 'plays' it collects to mitigate bias in AI is crucial 'to unlock value responsibly and equitably'. If inclusive AI is good for business and if toolkits can help achieve inclusive AI, then it follows that the toolkits are good for business, too. There is a game-like quality to DEI in AI that the toolkits encourage, leveling up as a strategy to unlock rewards for business. The toolkits manage their intended users' expectations, recognizing that not all aspects of the DEI-fulfilling AI challenge are easily and immediately addressable. The creators of the Haas toolkit point out that 'de-biasing' AI fully is 'not achievable', while the Women4AI toolkit acknowledges that developing inclusive AI 'is a journey, not a destination' and the toolkit can only serve as a starting point. Yet, the toolkits tend to strategically highlight what *is* immediately solvable: the Haas toolkit, for instance, suggests that using it will lead to some 'quick wins', as it introduces its users to resources that can have concrete, immediate effects on the AI development pipeline. The toolkits' pedagogy: ensuring that business executives and developers get rewarded on the journey towards inclusive, equitable AI with 'easy wins' and 'low-hanging fruit'. Because if these were not in sight, if there was no promise of eventual satisfaction and fun along the way, the intended users of the toolkits could get discouraged and fail to persevere. Even when the toolkit is a rather dense conference report, its appealing design serves as a promise of both convenience and joy—even if this promise remains unrealized (and, perhaps, unrealizable).

Each of these sets of tensions in the toolkits' framing suggest a desperation wrapped up in a sincere commitment to DEI in AI. Perhaps because DEI is difficult, the authors want to encourage rather than repel the potential toolkit user. Hence promises of comprehensiveness *and* comprehensibility, of simplicity but not being simplistic, of action *and* play, are like treats to lure or even trick the user down the path of DEI; like honey to coat an oddly-shaped, hard-to-swallow pill.

On making AI Ethics Inconvenient

Toolkits are now-ubiquitous material-cultural informational artifacts that organize many of our shared organizational, political, and institutional work. Their ubiquity does not make them benign or mundane, however. In 2021, the Indian government arrested a 22-year-old climate activist and founder of the Indian chapter of Fridays for the Future, Disha Ravi, for assembling an online toolkit for social media action and mobilization to support farmers who had been protesting against the Farm Bills for over a year, camped out on the outskirts of and in the

capital, New Delhi.[30] The Indian government charged Ravi with 'collaborating' to 'spread disaffection against the Indian state' and sedition.[31] Ravi shared the document with Greta Thunberg who tweeted about it, which angered the state even further. In 2011, when former Brazilian president Jair Bolsonaro was a congressperson, he launched a campaign against a school-based education program to combat homophobia, arguing that the distribution of information packages aka toolkits, which he called 'gay kits', in schools might actually 'turn' children gay through exposure.[32] Toolkits can take on many forms, and their potential for political action owes to the speed with which they promise the replication of ideas at scale. These two instances demonstrate how their convenience can be perceived as inconvenient.

We bring that spirit to this critique. Furthermore, at the time of this writing, one of us is designing a toolkit for software developers to fulfill the requirements of the EU AI Act associated with high-risk applications of AI.[33] This analysis of toolkits as convenient media therefore has been developed in parallel with a deep engagement with the affordances of this form, and how its limits might be tested to maintain inconvenience. 'Inconvenience' does not require that toolkit design be user-unfriendly, its messaging pessimistic, or that the form be abandoned altogether. In our practice, we find that it means reconfiguring the system of rewards that the toolkit embodies, ensuring that 'user satisfaction' does not hinge solely on ticking a box or marking a task as complete; it means highlighting that compliance is the bare minimum, a starting point; practically, it means that any task or step that the toolkit incorporates is followed by a 'go further' section—suggesting that there is always more to be done and that the toolkit users can and should do more. A toolkit must inspire an 'ongoing-ness' of work. It also means moving beyond the logic of modularity in where ethics work happens and how it fits within existing workflows; it means facilitating reflection on the complexity of the issues. So, in practical terms, we move away from self-contained 'modules'—sets of tasks to be completed by different teams in a predetermined sequence—and into 'spaces': interconnected areas of concern that different stakeholders must pass through and continue coming back to, throughout software development and deployment. It means highlighting, rather than gliding over, 'inconvenient questions'—for instance, about the end user's meaningful consent and what feminism and decolonial theory can teach us about its elicitation through design.[34]

30 Wikipedia contributors, '2020–2021 Indian farmers' protest', *Wikipedia,* https://en.wikipedia.org/wiki/2020%E2%80%932021_Indian_farmers%27_protest, accessed 22 February 2024.

31 'India activist Disha Ravi arrested over farmers' protest "toolkit"', *BBC News*, 14 February 2021, https://www.bbc.co.uk/news/world-asia-india-56060232.

32 Ed Bracho-Polanco, 'How Jair Bolsonaro used 'fake news' to win power', *The Conversation*, 8 January 2019, https://theconversation.com/how-jair-bolsonaro-used-fake-news-to-win-power-109343.

33 See 'The In-depth EU AI Act Toolkit', *Leverhulme Centre for the Future of Intelligence*, http://lcfi.ac.uk/projects/ai-innovation-praxis/eu-ai-act-toolkit/. The Act classifies AI systems according to different levels of risk they may pose in predefined areas of applications; a system can be classified as a source of high risk if it has potential to adversely impact people's health, safety, or fundamental rights (such as dignity or equality) in predefined areas of use, including biometric identification, law enforcement, and recruitment; producers of such systems are required to implement measures to mitigate the AI system's undesirable societal consequences.

34 Joana Varon and Paz Peña, 'Artificial intelligence and consent: a feminist anti-colonial critique', *Internet Policy Review* 10.4 (2021), https://policyreview.info/articles/analysis/artificial-intelligence-and-consent-feminist-anti-colonial-critique.

Equity, justice, and fairness are rich in friction; they demand a historical, structural, and institutional reckoning; and constant and passionate engagement with actual diversity—of thought, experience, situation, values—with little reassurance of total success. The toolkits we have referred to do acknowledge the complexity of the DEI challenges in AI development, deployment, and governance; as the Aspen toolkit makes clear, there are no 'silver bullets to ongoing challenges'. And yet, despite this recognition highlighted as a premise for DEI work in the AI ecosystem, the messaging of the toolkits for inclusive AI—precisely because they are framed as *toolkits* rather than *reports* or even *guidelines*—points to the paradox that the toolkitficiation of DEI work, and ethics more broadly, is necessarily ridden by. There might be no simple solutions to the problem that structural injustice constitutes, and yet a *toolkit* implies the existence of such ready-made *tools*; a *blueprint* suggests that the boundaries and hierarchies of the AI ecosystem can still be *redrawn*, as long as the teams, companies, and governments adhere to a clear-cut inclusivity template; a *playbook* signals that there are tested tactics and methods, a means of redirecting activity to achieve the desired (and desirable) outcome.

Toolkits might acknowledge complexity and difficulty, but their logic remains that of actionability and convenience. None of the struggle Ahmed talks about—the negotiation with immobilization, culture, language, established practice, human social relations, or organizational workflows—are in evidence here. But meaningful ethicopolitical life is, as Louise Amoore argues in *Cloud Ethics*, precisely about 'irresolvable struggles, intransigence, duress, and opacity, and it must continue to be so for if a future possibility for politics is not to be eclipsed by the output signals of algorithms.'[35] Amoore alerts us that there is more than just the matter of how, and if ,DEI in AI toolkits can deliver on empowering designers and decision-makers to produce ethical technologies: the *expansion* demanded of algorithms to parse, process, and encompass the intricacies and entanglements of human social life, to make accountable, ethical, fair, unbiased, and trustworthy decisions, cannot happen in a vacuum. The algorithms require frequent human intervention to maintain and manage their behavior; this human intervention, in turn, requires its own constant tending-to within shifting and unequal social, cultural, institutional, and organizational arrangements. This is far from smooth, this is hard to automate, but this is the work of our time.

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35 Louise Amoore, *Cloud Ethics: Algorithms and the Attributes of Ourselves and Others*, Durham, NC: Duke University Press, 2020, p. 172.

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Theory on Demand #54
In/Convenience: Inhabiting the Logistical Surround
Editors: Joshua Neves and Marc Steinberg

Convenience is the feeling and aspiration that animates our platformed present. As such, it poses urgent techno-political questions about the everyday digital habitus. From next-day delivery, gig work, and tele-health to cashless payment systems, data centers, and policing – convenience is an affordance and an enclosure; our logistical surround. Driving every experience of convenience is the precarious work, proprietary algorithms, or predatory schemes that subtend it. This collaborative book traces how the logistical surround is transformed by thickening digital economies and networked rituals, examining contemporary conveniences across a wide range of practices and geographies. Contributors examine the ineluctable relation between convenience and its constitutive opposite, inconvenience, considering its infrastructural, affective, and compulsory dimensions. Living *in convenience* is thus both a hyper visible manifestation of so-called late capitalism and a pervasive mood that fades into the background (like the data centers that power it). Bringing the agonistic relation of in/convenience to center stage, this volume analyzes the logistics of delivery, streaming porn, cloud computing, water infrastructures, smartness paradigms, convenience stores, sleep apps, surveillance, AI ethics, and much more – rethinking the cultural politics of convenience for the present conjuncture.

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Printed on demand
ISBN: 9789083412559

Institute of network cultures