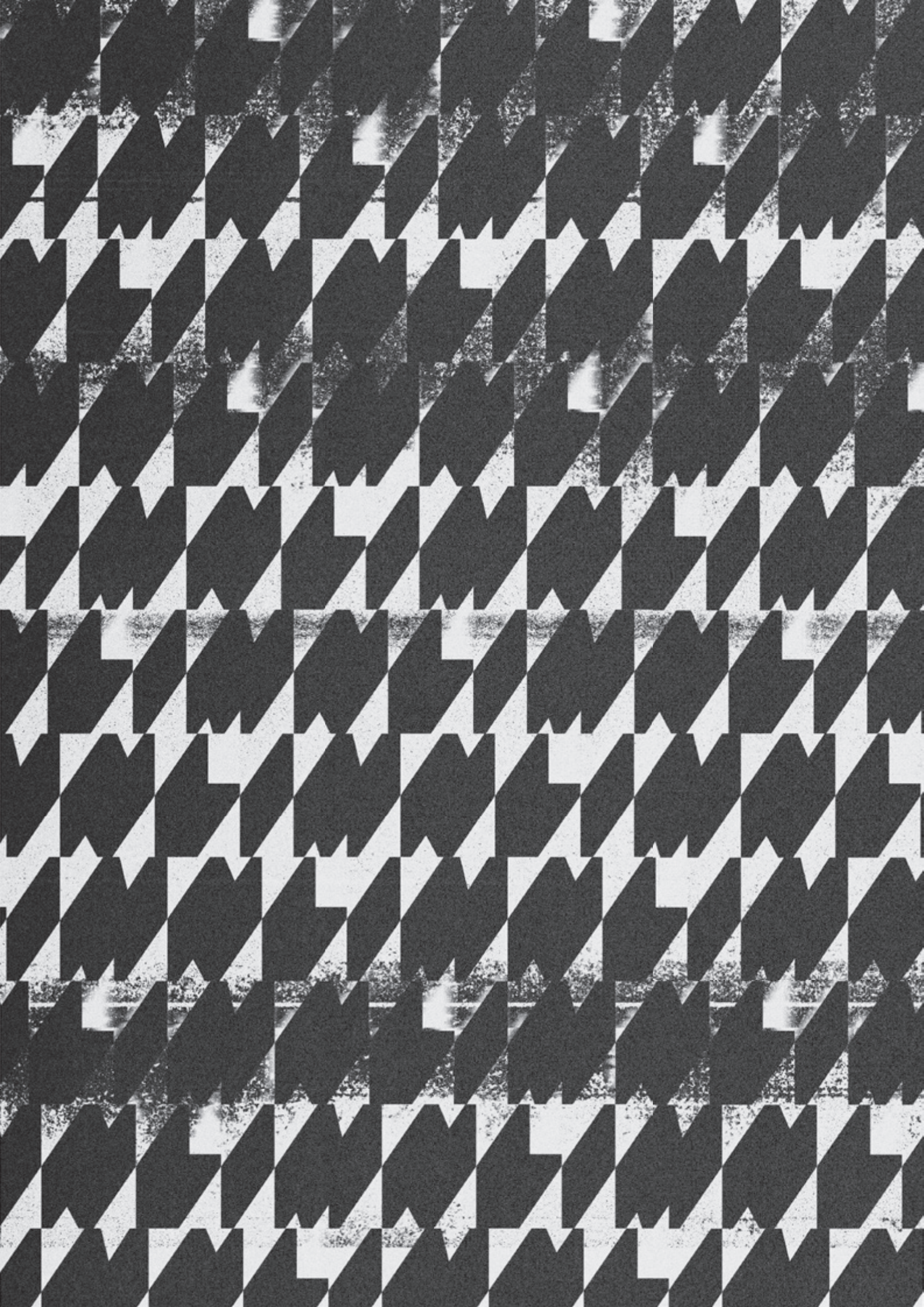
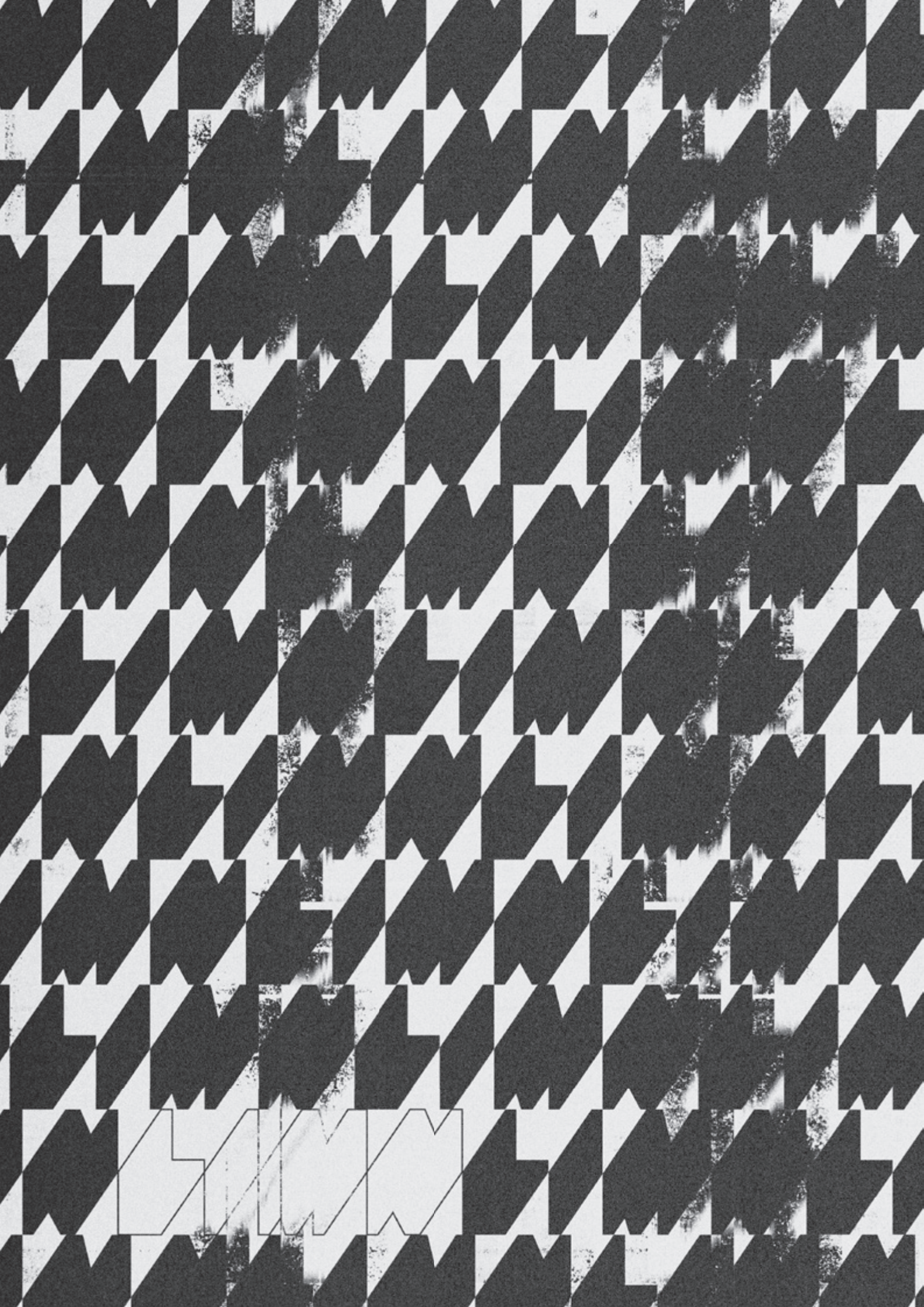








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Limn 14 – This Is Not a Platform
Edited by Ann H. Kelly, Sonja van Wichelen, and Ashley Carse
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***Limn* is an experiment in collaborative inquiry. Published in print and open-access online editions, the journal gathers scholars, artists, and activists to illuminate—or limn—problems emerging at the interface of technology, politics, and contemporary life.**

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THIS IS NOT A PLATFORM

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DIGITAL PLATFORMS and the companies that own them play an out-sized and ambivalent role in contemporary life. They facilitate countless connections and exchanges, while tracking, storing, and profiting from the user data collected in the process. They support novel disaster responses and civic engagement initiatives, but also military and surveillance projects. Dependent on vast infrastructures that strain environmental and civic limits, they can also be used to facilitate sustainability and citizen science.

As models developed in the technology sector are replicated in governance, healthcare, education, and other fields, platforms have become hard to pin down, let alone regulate. As power and wealth become more concentrated, institutions are compromised, expertise is contested, critique calcifies into cynicism, and deliberative politics tilt toward volatility, authoritarianism, and populism.

Limn 14 turns the platform upside down and inside out to recast conversations around this complicated conjuncture. So much has been written about digital platforms that, by now, even the sharpest critiques can feel instantly familiar. Our theme, *this is not a platform*, represents a modest collective attempt to break the spell of recognition—to loosen the hold of a term that has become too stable, too certain. The *not* clears the slate so that we can look again. This issue invites you to do just that, not by advancing a single thesis, but by juxtaposing platforms from a wide range of times, spaces, and domains. Payphones and high heel shoes. Gig work and oil platforms. Bingo halls and Zoom calls. Porn scenes and detox dusts. Machine learning and feedback loops. Like past issues of *Limn*, we have curated this collection to generate moments of surprise for readers and ourselves.¹

How Did We Get Here?

← The platform, seen from below.

1 See Stephen J. Collier et al., “*Limn*: Experimenting with Collaboration,” in *Collaborative Anthropology Today: A Collection of Exceptions*, ed. Dominic Boyer and George E. Marcus (Cornell University Press, 2021).

2 On how platforms reconfigure infrastructures and mediate the circulation of capital, see Jean-Christophe Plantin et al., “Infrastructure Studies Meet Platform Studies in the Age of Google and Facebook,” *New Media & Society* 20, no. 1 (2018): 293–310; and Paul Langley and Andrew Leyshon, “Platform Capitalism: The Intermediation and Capitalisation of Digital Economic Circulation,” *Finance and Society* 3, no. 1 (2017): 11–31.

In the 1990s and early 2000s, the term “platform” migrated from the worlds of architecture and engineering into the ascendant vernacular of software development and, from there, into social media and e-commerce. It became a shorthand for a new breed of organizational and business models designed to facilitate connections and transactions among users of all kinds. Trading on the language of elevation and support associated with the platforms of the past, these new digital platforms promised everything: flexibility, speed, scale, and efficiency—doing more with less and reaching everyone from anywhere. A platform could be a marketplace or a public square. And it could appear to be neutral ground, even as its operators manipulated the scene from below, determining winners and losers.

Digital platforms did more than facilitate exchange: they reorganized it. They became infrastructures that spanned work, consumption, and social life, and then captured the data that all those interactions generated. This model was adopted in new domains. From biometric tracking to gig pricing to the commodification of care, platforms extracted far more than just data—they calibrated bodies, labor, and everyday life. Over time, growth was no longer measured in users alone, but in converting participation into revenue.²

As these systems became pervasive, they also reorganized political life. From the Arab Spring to Occupy to #MeToo, platforms enabled rapid circulation, visibility, and forms of collective expression that materialized new publics. Yet expanded connectivity seemed to go hand-in-hand with shallower forms of engagement; widely circulated gestures of solidarity, signals of alignment, and scenes of participation were only loosely tied to durable institutional change.³

In the 2020s, a chorus of criticism grew. As the mass migration of work, sociality, and politics onto online platforms during the COVID-19 pandemic intensified our dependence, scandals around data extraction and manipulation exposed power asymmetries. Industry defectors, journalists, politicians, and scholars observed how the utopian promise of openness and connection had given way to control, surveillance, and degradation.⁴

Upending the Economy of Appearances

A platform can stage a world that feels complete and internally coherent—an experience that depends on both elevation and concealment. In theatre, for exam-

ple, the stage defines the performance space in ways that help the audience to suspend disbelief. In the wings, out of sight, props are readied and costumes are changed. Beneath the floorboards, technicians monitor the action and pull the levers that let actors move unseen through trap doors and hidden corridors.

We know that platforms are not neutral. We know that they extract, sort, and govern. We know, too, that much of what sustains the platform model—underpaid labor, cheap energy, the earth itself—is concealed. This awareness has played a vital role in diagnosing problems and proposing remedies in the areas of policy, law, and design. And yet, the platform is not just an infrastructure; it's a metaphor for how we know, how we relate, and how we value—a mode of sense-making that is embedded in our interactions, routines, and aspirations.⁵ To refuse the platform, then, means contesting its operations and, perhaps less obviously, short-circuiting a way of thinking that assembles relations too quickly and presents their worth as self-evident.

What would it mean to upend this economy of appearances?⁶ To break the suspension of disbelief? In 1929, the surrealist René Magritte painted a curving stem connecting a wood-brown bowl to a black mouthpiece. Beneath, he inscribed, *Ceci n'est pas une pipe* (This is not a pipe). This work, *The Treachery of Images*, doesn't just remind us that appearances are unreliable. It unsettles the ease with which word, image, and object are made to coincide. The painting offers something immediately recognizable, then withdraws it. This is not an invitation to decode the image, but a challenge to confront the contradictions that hold it together.

The pieces that follow are not about platforms—not exactly. They are about what platforms obscure. What they enable. What they suppress. What leaks, slops, and rots. This is a geography of the glitchy, the broken, the repurposed. An archive of unexpected workarounds and anti-platform curiosities. And perhaps, among the ruins, the first sketches of a post-platform politics. *

3 On the sociopolitical affordances of platforms, including their role in structuring publics, governance, and asymmetries of power, see José Van Dijck, Thomas Poell, and Martijn de Waal, *The Platform Society: Public Values in a Connective World* (Oxford University Press, 2018); Daniel Curto-Millet and Alberto Corsín Jiménez, "The Sustainability of Open Source Commons," *European Journal of Information Systems* 32, no. 5 (2023): 763–781; and Zeynep Tufekci, "The Medium and the Movement: Digital Tools, Social Movement Politics, and the End of the Free Rider Problem," *Policy & Internet* 6, no. 2 (2014): 202–208.

4 Cory Doctorow's influential neologism "enshittification" skewers the systematic degradation of digital platforms that takes place when value extraction for shareholders displaces user experience; Cory Doctorow, *Enshittification: Why Everything Suddenly Got Worse and What To Do About It* (Verso Books, 2025). See also: Tim Wu, *The Age of Extraction: How Tech Platforms Conquered the Economy and Threaten Our Future Prosperity* (Penguin Random House, 2025).

5 Tarleton Gillespie, "Is 'Platform' the Right Metaphor for the Technology Companies that Dominate Digital Media?" *Nieman Lab*, August 25, 2017.

6 Anna Tsing, "Inside the Economy of Appearances," *Public Culture* 12, no. 1 (2000): 115–144.

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The hidden substrates of machine learning

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**PLAT
FORM
OB
SCU
RANT
ISM**

Alondra Nelson



↑ Photograph of the National Security Agency's Utah Data Center, taken by an employee of the Electronic Frontier Foundation during an airship flight.



CHATGPT IS A PLATFORM. The chatbot is infrastructure. Thousands of applications now build on OpenAI’s application programming interface, creating a dependent ecosystem of developers, startups, and enterprises.

When OpenAI positions ChatGPT primarily as a conversational interface, it obscures this platform identity, one that extracts value not only from user data and app store partnerships, but from the planet itself.¹ Like earlier platform companies—Uber, Facebook, Amazon Web Services—AI platforms systematically render invisible the infrastructures that make them possible. These hidden foundations include workers in the Global South who rate AI outputs for a few dollars per day, uncompensated creators whose work trains AI models, public water systems that supply data center cooling, and communities that bear the environmental costs of mineral processing and electronic waste.

Advanced artificial intelligence is often described as an ethereal technology—an immaterial power floating in “the cloud.” But clouds have weight. Behind every chatbot prompt lies a material reality that extends deep into the earth.

The rhetoric of immateriality distracts us from what is apparent in markets and geopolitics. Seven United States-based technology companies now account for nearly a third of the S&P 500’s value, their AI ambitions inflating market capitalizations into trillions of dollars. Without these firms, US economic output would have contracted in recent quarters. The entire economy is now tethered to cloud promises that analysts increasingly describe as a bubble waiting to burst.

Platform obscurantism operates through misdirection.² It trains our attention upward, to the cloud, to imagined utopian futures, while extraction happens all around us. What if we got our heads out of the clouds? What if we looked down instead? Understanding the political and ethical stakes of AI requires excavating what platforms work so hard to bury.

Substrates are foundational materials, like the silicon wafers upon which circuits are etched—the physical base of computation. The AI political economy is composed of multiple, layered substrates, including geological, temporal, imaginary, and epistemic ones. AI platforms rest on these and other substrates. Tracing these hidden foundations reveals where power concentrates and where it might be contested.

1 Kate Crawford, *Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence* (Yale University Press, 2021).

2 Marc Aidinoff et al., “Five Theses on the Gravity of Platforms,” Institute for Advanced Study, 2024.

Geological Substrate

Consider the mine. From the vantage of deep time, deep learning is a geological phenomenon. Cobalt, lithium, nickel, and rare earth elements are extracted from strata that condense millions of years of planetary history. These minerals are reanimated through circuits, chips, and data infrastructures, transforming geological time into computational capacity.

This geological substrate tracks the *longue durée* of extractivism documented by scholars of empire and resource economies. Howard French has traced extraction across African, Caribbean, and American colonies. Modernity, he argues, was built on the plunder of the earth—a process that reordered human societies as much as it rearranged geology.³

Thea Riofrancos extends this framework to the present by examining lithium extraction in Argentina, Chile, and Bolivia. Her research in the Andean region reveals a pattern: northern nations secure minerals needed for “clean” technology while southern communities bear the environmental costs. The promise of sustainable futures, she demonstrates, often rests on intensified extraction in the Global South.⁴

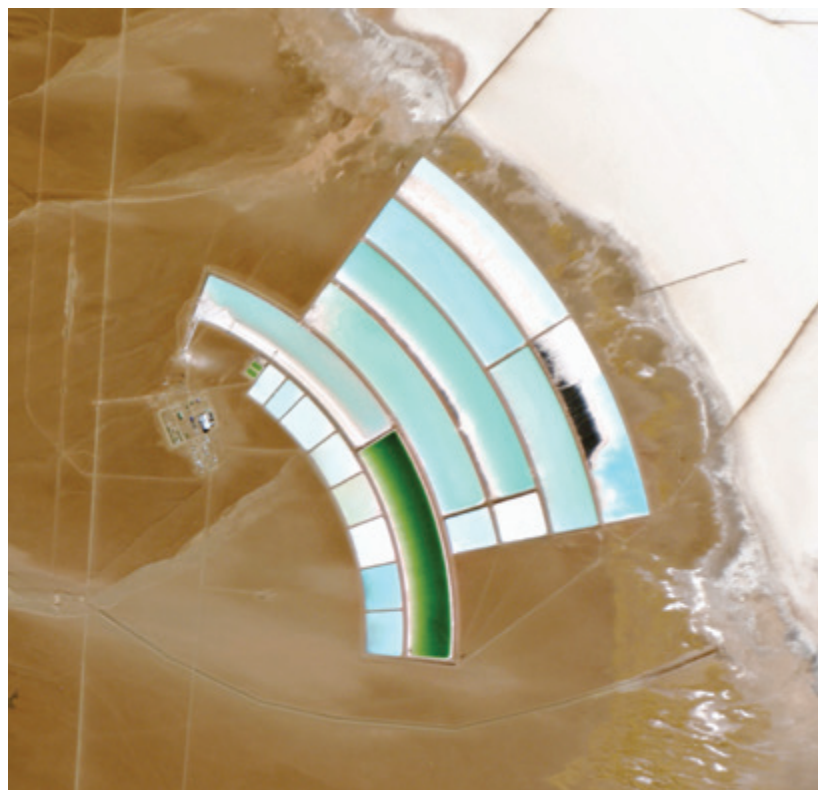
AI development extends this lineage. Critical minerals are to the algorithmic economy what gold was to empire and what oil is to industrial modernity. All are resources that become essential global interdependencies.

The so-called “critical minerals supercycle” has entangled national industrial policies, private capital, and planetary ecosystems.⁵ Argentina’s

3 Howard W. French, *Born in Blackness: Africa, Africans, and the Making of the Modern World, 1471 to the Second World War* (Liveright, 2021).

4 Thea Riofrancos, *Extraction: The Frontiers of Green Capitalism* (W. W. Norton, 2025).

5 Tatiana Carayannis, Naima Kane, Marie-Therese Png, and Alondra Nelson, “Summary Report: Workshop on the Geopolitics of Critical Minerals and the AI Supply Chain,” Science, Technology, and Social Values Lab, Institute for Advanced Study, 2025.



→ Salar de Olaroz Lithium Mine, Argentina by Planet Labs.

lithium fields: water depletion in arid lands. The Democratic Republic of the Congo's cobalt mines: exploitative labor, environmental devastation. Chile's Atacama salt flats: brine extraction conflicting with Indigenous water rights.

These sites have become hinge geographies in a reconfigured global economy. Not peripheral zones of AI development. Constitutive ones.

The benign language of "training models" and "machine learning" conceals what this actually requires: finite reserves of water and minerals, energy-intensive processing, and human labor at every stage. The platform ideal perfects this erasure, treating extraction sites as mere supply chains rather than the material foundation of computational power.

Temporal Substrate

Resource extraction has worked through conquest and enclosure, the seizing of space. AI platform extraction works additionally through the manipulation of time, the seizing of futures. Industry narratives of urgency, competition, and existential risk compress the horizon of deliberation. Policymakers are told that regulation must not slow innovation, that data must flow without friction, that the benefits of the AI future are too abundant to pause.

This temporal logic demands sacrifice zones, communities whose past and future are deemed expendable in the name of an accelerated present.

In Southaven, Mississippi, xAI built its Colossus 2 data center to train Grok. Twenty-seven gas turbines were installed without air permits. The largely African American community had already endured decades of industrial pollution, their lungs carrying the residue of past extractions. Now they breathe emissions from turbines burning methane to power machine learning. The future collapses into a toxic present.

An NAACP lawsuit identifies what this negative externality represents: environmental injustice compounded by purported algorithmic urgency. In the age of AI, the civil rights struggle extends into the fight to breathe.⁶

AI platforms accelerate this logic while obscuring what they accelerate. By abstracting computational processes into frictionless and often dialogic interfaces, platforms compress the distance between desire and fulfillment. The temporality of the click, the keystroke, the prompt.

Yet beneath this immediacy lie vastly different timescales: the geological time required to form minerals, the generational time of communities disrupted by mining, the long horizons of environmental recovery, and real-time energy consumption of computation.

All are collapsed into a perpetual present of instant response.

Slowing down may be the most radical act against platform obscurantism. To pause amid the rush for critical minerals and computational dominance is to reclaim the possibility of collective choice. To insist on time for excavation and examination.

In that pause, power relations become visible. Dependencies become negotiable. Sacrifice zones become refusable.

Urgency is itself a technique of extraction, a way to exhaust the present for the future, while foreclosing deliberation about what we build, how we build it, and who pays the price.

6 "NAACP, SELC, Earthjustice Threaten Lawsuit over xAI's Unpermitted Gas Turbines in Mississippi," press statement, NAACP, February 13, 2026.

Imaginary Substrate

Every mineral rush depends on speculation—not only in markets but in imagination. The AI economy is propelled as much by sociotechnical imaginaries as by hardware. Much of the infrastructure expansion today rests on hypothetical futures: visions of artificial general intelligence, sentient systems, and boundless productivity that have little empirical grounding yet immense narrative force.

These imaginaries constitute their own kind of substrate, a foundation of belief that supports material extraction. They do not merely describe technological futures—they produce them, shaping investment flows, labor relations, and international policy. They also deflect attention from the material and political present: the waste streams, energy consumption, and environmental externalities that make AI possible.

Platform companies have always trafficked in futures. Uber promised autonomous vehicles, Facebook pivoted to the metaverse. AI platforms amplify these speculative dynamics by linking technological development to existential narratives about intelligence, consciousness, and human obsolescence.

Just as early modern alchemists dreamed of transmuting base metals into gold, today's AI evangelists promise to turn data into value. Both rely on the enchantment of transformation. Both conceal the bodies, both human and mineral, on which that transformation depends.

The more dazzling the promised future, the less visible the extractive mechanisms. And so communities sacrifice water rights for promises of progress, nations race to secure minerals for intelligences not yet built, and workers breathe methane emissions to train systems whose benefits remain speculative.

Epistemic Substrate

At stake is not only what is being extracted, but who knows what is being extracted. As Riofrancos observes, the sites of resource extraction are also sites of epistemic contestation, places where definitions of “critical” minerals, “clean” energy, and “responsible” AI are negotiated. This constitutes another substrate: the infrastructure of knowledge production itself.

Governance frameworks, whether the EU's due-diligence acts or US legislation like the Critical Minerals Security Act, often lack effective enforcement. Voluntary standards dominate, and local communities are tasked with monitoring compliance without meaningful authority. This mirrors AI governance itself: a proliferation of principles with few mechanisms of redress.

Epistemic asymmetry is built into the AI stack. Corporations invoke trade secrecy to withhold model data and energy metrics, even as they extract publicly available knowledge and natural resources. Researchers attempting to audit the environmental impacts of Microsoft's data centers or OpenAI's model training are denied access. Communities near cobalt mines cannot trace which AI companies purchase their minerals.

By attending to the materiality of artificial intelligence, we see that “the cloud” has weight.

Mineral opacity and algorithmic obscurity reinforce each other. Both insulate powerful actors from scrutiny, transforming public goods into private assets. Where earlier platforms obscured labor relations and data flows, AI platforms add layers of geological and epistemological concealment, making it nearly impossible to trace the full supply chain from lithium brine to language model.

This is obscurantism as knowledge regime: a systematic organization of knowing and not knowing that protects extraction while mystifying its operations. It exemplifies what I term “algorithmic agnotology”: the strategic production of ignorance through technical inscrutability, selective transparency, and the deliberate framing of the AI stack as too complex to interrogate or govern.⁷

⁷ Alondra Nelson, “Algorithmic Agnotology: On AI, Ignorance and Power,” paper presented at IASEAI Conference, February 2026.

The Work of Exposure

The challenge is not only to imagine alternatives but to build countervailing power against platform obscurantism. This requires us to recognize where leverage actually exists.

Resource-producing countries in the Global South control substrates that AI companies cannot do without. This dependency creates negotiating power if wielded collectively.

Strategic coordination around mineral pricing, processing requirements, and environmental standards could shift value capture in supply chains that currently extract wealth while externalizing costs.

Making substrates visible is not merely an analytical exercise but a political one. What platforms conceal, policy and collective action can reveal. Reconceiving extraction as relation rather than resource requires institutional capacity: technical expertise to trace supply chains, legal infrastructure to pursue accountability, and financial mechanisms to make noncompliance consequential.

Transparency and audit mechanisms in mining and oil extraction have often fallen short, weakened by voluntary compliance and inadequate enforcement. What distinguishes AI obscurantism is the speed at which dependencies form, and the layers of technical, geological, and informational complexity that conceal them.

Yet accountability can emerge through strategic litigation, as the NAACP’s lawsuit against xAI demonstrates, and through whistleblowing by workers who refuse to be complicit in concealment. Such interventions bring hidden infrastructures into public view.

Still, these struggles for exposure never fully resolve. They are as enduring as extraction itself, requiring sustained contestation at every layer of the AI stack.

Exposure itself must become infrastructure: transparency mandates with enforcement power, independent audits with legal standing, and public access to data currently held as trade secrets. What lies beneath the surface can become the ground for a different politics of intelligence. The weight of the cloud can be measured, can be accounted for, and can be made to matter. *

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Eighty-five,
there goes our
social lives!

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BIG TECH AT THE BINGO

Ella McPherson

Eyes down.



Number fifteen
One-five, fifteen.

Number six.
Number six.



Twenty-five.
Two and five, twenty-five.



THE NUMBERS POUR from the bingo caller in a streaming monotone as she leans against the podium in her company-issued, smart-casual uniform. She reads randomly generated numbers from a screen, glancing out at the players' tables between calls. Close to the microphone, as if she was lulling in a child's ear, her voice is intimate and calming, bordering on boring. It would indeed be soothing were I not panicking over my screen: an electronic tablet glowing with multiple bingo cards and dozens of numbers, demanding that I jab and dab matches before the caller utters the next number.

Maeve looks at me knowingly. She's worked her whole adult life with children, and I can tell I'm about to get patiently educated. She leans over and whisper-reminds me of this game's rules, her 1920s bob swinging forward and her blue-green eyes magnified by her glasses. Maeve's sparkly nails flit between her tablet and mine as she dabs numbers I missed—all while playing twice as many cards as me, waving and winking at her friends, and sipping her wine.

Maeve seems to know everything and everyone here. At London's Wood Green Bingo she's famous—famous for being friendly and famous for being lucky. I'd asked to come along because so many of her stories are about the bingo. What was this place of conviviality, risk, drama, and skill?

Sitting beside her in a pink chair at a laminated table full of inscrutable bingo paraphernalia, I understood. By the time we left, she had introduced me to the charming cashier, swapped updates on the health and children of several friends, and taken me on several emotional roller-coasters of hope and despair. We gossiped. We dined. She won fifty quid.

But I only got to the Wood Green Bingo twice. In my front hall one day, Maeve dropped a bombshell: the place she'd been going for decades was closing soon. It was going to be replaced ... by an app! Later she texted: "There goes my social life. 🤖 x."

Despite its community feel and community origins, British bingo is a largely commercial enterprise. Escalating costs and declining revenue, sharply exacerbated by the UK's strict COVID-19 lockdowns, are impelling companies to pivot from what the industry calls *land bingo* to online bingo apps and websites.

Behind a plethora of branded spaces like Mecca Bingo, Foxy Bingo, and Lucky Cow Bingo are a smaller number of bingo software platforms like Pragmatic Play and Playtech. Many in the business see these technologies as the future. Mecca's website, for example, states: "Although bingo halls are still around, they have largely been eclipsed by online bingo, with 85% of players choosing to go the online route rather than attending a physical bingo hall."

Many land bingo players, however, are not letting their bingo halls go gentle into that good night. They want nothing to do with online bingo's techno-optimistic values of convenience and progress. They are raging against the closure of their halls because of the values their walls protect:



**Number fifty-six!
Was she worth it?
(Crowd: Every penny!)**



**Fifty.
Five-o, five-o,
it's off to work we go!**



**Number forty-one.
Forty-one, time for fun!**

1 Carolyn Downs, "Two Fat Ladies," *History Today*, July 2007.

2 Carolyn Downs, "Mecca and the Birth of Commercial Bingo 1958–70: A Case Study," *Business History* 52, no. 7 (2010).



**Number two,
me and you, number two.**



**Seven, seven,
lucky seven.**

the defense of the vulnerable, the sociality of emotion and of luck, the glamour of public entertainment, and the distinct culture that is British bingo.

One fading element of this culture is British bingo lingo: oft-rhyming and sometimes-rude nicknames for each number derived from military language, popular culture, and Cockney slang. The media often blames its disappearance on the "woke brigade," but I suspect a more prosaic reason: standardization and speed in the pursuit of profits. That, and the fact that bingo slang evokes community, critique, and resistance—concepts that don't jibe with shareholder returns.

The long history of bingo in Britain hinges on women, who have invented and popularized community numbers games, both as operators and as players.¹ These games of chance can be a side hustle that supplements working-class household incomes—or at least provides the dream of doing so.

Widespread informal and charity bingo meant that, as soon as British gambling laws relaxed in 1960, existing communities of players were ripe for profit. Companies that had made their fortunes commercializing working-class British leisure time folded bingo into the mix, often marketed as "affordable glamour."²

And glamorous it was. Commercial bingo halls often occupied historic buildings—soaring churches and grand cinemas. The stages from which bingo callers entertained, frequently shoulder-to-shoulder with celebrity guests, were dramatically draped and festooned with balloons. The callers also dressed for the occasion, like Ricky in his dicky bow, and they themselves became celebrities: Ricky Denton, North London's most famous caller, starred in a 1999 BBC documentary about the contest for National Bingo Caller of the Year.

Over a coffee at McDonald's, Ricky—fast-talking, with charismatic consonants—described leaving the bingo hall at the end of his shift and finding a line of women waiting to chat. Mothers, workers, and pensioners could glam up and strut out for a night that was thrilling yet safe, circumscribed by its low stakes and sustained by its community.

The bingo community was, and still is, about neighbors and regulars, callers and waitstaff, customers and cashiers. It is about care and exchange, noticing and joviality, and the sociality of emotion. As one longtime player explained it, "You enjoy everything more when someone is with you. The competition. The excitement when you want one number, and it's big money, and your heart—oh my god! ... It's a lovely feeling when you have won or are waiting for just one number. All your friends get excited with you. You win, and they cheer!"

Maeve wins a lot. She once won so much money that she splurged on a family holiday to Florida and put her children through university. She brought an aura of luck when she walked through the bingo hall's

65

**Sixty-five,
old age pension, sixty-five!**

**Nine, nine,
doctor's orders!
(Crowd: Cough, cough!)**

3 Downs, "Mecca".

9.

doors. "I was always winning," she told me. "Everyone said, 'Oh let me rub you!' I was like a cat. They were rubbing my shoulders. But it got me to Spain and Turkey, so I didn't care!" Maeve's luck was shareable; as much as it belonged to her, it also belonged to the community.

When land bingo players talk about their community, they often mention the pensioner regulars who spend winter afternoons in the bingo hall, warmed by the subsidized heat and inexpensive food. They worry, frowning, about all those they lost track of during the Covid closures.

With the rise of bingo-for-profit, the game became a community practice operating on a commercial platform, though this analog platform was hardly noticeable beneath the laughter and sparkle of a night out. In fact, bingo's wholesome community aspects were highlighted by profiteers as a way to stave off gambling regulation.³ But regulation has eaten away at bingo's bottom line all the same.

In 2007, England banned smoking in enclosed workplaces, following closely behind the rest of Britain. Profits tanked as, instead of feeding the slot machines or buying drinks, smokers stepped outside between games for a quick cigarette—or stayed away altogether. In the years between the smoking ban and the Covid lockdowns, the number of bingo halls in the UK halved.



← The author (left) plays with friends at Mecca Bingo in Wood Green, London, a few months before it closed in 2024.



**Fifty-four,
fifty-four, man at the door.**

**Sixty-two,
turn the screw, sixty-two.**



**Sixty-seven,
stairway to heaven.**



**Eighty-five,
stayin' alive, eighty-five.**



**Number sixty,
grandma's getting frisky!**

Covid closures took the next bite out of land bingo. When halls reopened, soaring energy prices compounded losses by making heat and light in bingo's cavernous halls very costly. Between the pandemic and now, bingo halls have declined by a further quarter.

In Mecca's 2024 annual report, its parent company, the Rank Group, announced a strategy of "estate rationalisation" coupled with the development of a bingo app. Customers have gradually been pushed out of halls and onto apps as the commercial bingo platform model moved online.

Mecca's messaging portrays this shift in a positive light, coaxing players online with platform promises. We can see the familiar techno-solutionist discourse of convenience on its website: "Many of our members prefer playing online bingo as it offers the same excitement of bingo in a club, but you can do it anytime, anywhere. Games at Mecca Bingo play round the clock, so if you work night shifts or you are an early riser—you'll always be able to get into a great game of online bingo!"

The move to online bingo is framed as inevitable. After noting that bingo has its roots in the 1500s, Mecca's website goes on to state: "Technology has come a long way since then, and the way that we play bingo has evolved with it"—lucky for the bingo platforms, unlucky for the bingo landlubbers.

Land bingo players have weathered profit squalls before. They watched lucrative slot machines encircle their halls. Some players gave these a wide berth; a few lost their life savings. They witnessed rationalization hollowing out hallowed traditions. Skill and autonomy in the bingo profession, with the amiable caller at its pinnacle, were flattened into simplified

and interchangeable roles, with identically uniformed workers rotating between the bar, the stage, and the bins.

Bingo ball blowers were replaced by electronic random number generators. Paper cards were displaced by tablets that auto-play. The decline in human error that once worried callers and players alike was cold comfort for the decline in human expertise as these machines paved the way for the platformization of bingo.

In the end stages of this transformation, every aspect of bingo is mediated by a platform. This was the future that the Wood Green Bingo players and workers were facing. Maeve told me there was talk of a petition against the closure. There was mulling over meeting members of parliament. Groups were organizing carpools to Cricklewood Bingo—much further away, but with very lucrative prizes. In their organizing and their resistance, these land bingo players kept good company across time and space.

The first (and most famous) instance of bingo resistance dates back almost twenty years, to the threatened closure of Islington's Essex Road Mecca Bingo following the smoking ban's profit shock. To raise awareness about the importance of the neighborhood bingo hall to the community and about the lives of pensioners, players formed a rock band.

They declared themselves the oldest rock band in the world, measured by the cumulative age of its members. Named the Zimmers, after the brand of walkers, they eventually made it all the way to the semifinals of *Britain's Got Talent*. As they shuffled onstage for their audition in drab overcoats and arranged themselves for a saccharine rendition of "What the World Needs Now is Love," judge Simon Cowell rolled his eyes. Suddenly, the record scratched. The Zimmers flung off their coats, revealing heaps of gold bling, pulled on baseball caps at jaunty angles, and started boisterously rapping to the Beastie Boys' "(You Gotta) Fight for Your Right (To Party!)."



← The Zimmers' *Britain's Got Talent* audition.



Number five, dead alive, number five.

One night, I'm in Newcastle. It's darkly autumnal, concrete gray and slippery-shiny with drizzle. I stand at an intersection, waiting for the light. I look at the small group of university students in front of me and smile at their colourful costumes: argyle sweater-vests diamonded in reds and greens, striped saddle shoes, an assortment of wigs, and incongruous pirate gear. They are splitting up at the end of their night. "Anna, message me when you get home," one says.

A mustachioed man in his late twenties with an umbrella suddenly stops, delighted. He points at the Henry Hoover box one of the prep-pirates is hoisting. "Have you been at Bongo's Bingo?" he asks. They nod and grin.

How on earth did he know?

I realize that the whole scene—the costumes, the cheer, the household appliance prize being lugged home in the rain—are instantly recognizable to those in the know as the cultural institution of British bingo.

"I love it!" he laughs, then salutes and walks on by. *

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PHOTO CREDITS

p.26: Photo by Ella McPherson

p.28: Video still from from <https://www.youtube.com/watch?v=-m0EZ0502dM>

How the porn scene mutates across platforms

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The background of the page is a reproduction of the painting 'Rain, Steam, and Great Bridge' by the English Romantic painter J.M.W. Turner. The painting depicts a steam locomotive crossing the Maidenhead Railway Bridge over the Maidenhead Railway Cutting, with figures in the foreground. The scene is set in a hazy, rainy atmosphere. The title 'METASTATIC CONTENT' is overlaid in large, white, sans-serif capital letters across the center of the image. The author's name 'Hannah Wohl' is in the top right corner in a smaller, white, sans-serif font. The page number '31' is in the bottom right corner in a white, sans-serif font.

Hannah Wohl

METASTATIC CONTENT



AS THE “RULE 34” INTERNET MEME GOES, “If it exists, there is porn of it.” One of the most widely consumed forms of digital content, porn now circulates almost exclusively online—via studio websites, video-sharing tubesites like Pornhub, and subscription-based social media platforms like OnlyFans. Since the rise of the internet and the demise of feature-length porn films, the porn industry has been reorganized around the production of “scenes”—sexually explicit videos only twenty to forty-five minutes long.

Studios contract directors, crew, and performers to produce these scenes, paying each a flat rate. Scenes are then uploaded to the studio’s website; many are subsequently pirated and circulated across tubesites by third parties. Performers also work independently as content creators, collaborating with one another to produce their own scenes—called “content trades” or “collabs”—for subscription-based platforms where users subscribe to individual performers’ accounts.

As scenes travel from the hands of directors and content creators, through websites and social media platforms, and onto the screens of users, they give rise to other cultural objects that travel in different ways. Drawing upon ethnographic fieldwork on the porn and adult content creation industry, I explore how platforms shape and are shaped by the movement of three objects that would not exist without the porn scene, but are irreducible to it. By showing how these objects replicate and transform across platforms, I argue that content doesn’t merely go viral—it metastasizes.

The Promo Post

Studios and performers use X (formerly Twitter) and other social media platforms to post promotional content—promo—an image or a video accompanied by text telling viewers where to watch a scene and linking the studio’s and performers’ accounts. Promo is deliberately generated during the production process. Before shooting a scene, directors take stills—photographs of the performers in each sexual position they plan to enact. During content trades for OnlyFans, where users expect less technical polish, stills are usually taken during filming for efficiency—often by one of the performers themselves, while holding the camera for point-of-view (POV) footage.

Studios and performers also produce behind-the-scenes (BTS) videos—short recordings, usually only a couple of minutes long, in which the performers address the camera to discuss the scene they are about to shoot or have just shot. Directors instruct performers on what to say, such as making sure to name the studio, but performers may also film their own BTS on their phones.

← Taking stills for promo during a studio shoot.

Because performers, especially women, often have far more social media followers than studios, studios want performers to post promo on their own social media accounts and are more likely to rehire them if they do. However, this is not contractually obligated, and performers will not post promo that they deem to be damaging to their individual brand. One female performer told me:

There's some things where it's like they're done really amateur, and whatever sets they've used, or whatever thing is posted, it's horribly unflattering—which is fine. I've accepted that. I have no control over the content that's out there. You can just use my image and do whatever with it. But some of those I'll just like instead of retweet.

As independent content creators, performers also use promo to cross-pollinate followers across one another's accounts, and to draw users to their own various accounts on multiple platforms, especially OnlyFans. The same performer went on to explain how this approach differs from promo for studio projects:

My collabs, of course, I'm the one making the money off of that. So I will definitely promote those. I'll do a Twitter post, an OnlyFans mass message to everybody who subscribed, plus everyone who has subscribed in the past and their subscription has expired. ... Even if they don't want to resubscribe, maybe they'll go buy this one video. And that's why you follow everybody that follows you. And then that way you have access to all the people that subscribed.

To drive traffic effectively, creators must understand how users navigate different platforms. For example, OnlyFans has limited search functionality, so creators must rely on other social media platforms to bring users to their OnlyFans accounts. Creators must also navigate the regulatory thickets of multiple platforms. TikTok and X prohibit direct links to OnlyFans, so a creator instead has to post an aggregator link page on their bio that

includes their OnlyFans page, conforming to the “two clicks away” rule. TikTok bans nudity and most sexual suggestion; Instagram permits risqué imagery but no nudity; X is the only major platform where explicit content is allowed as long as it's tagged and consensual. In this way, promo moves the user from one creator's account to another within the same platform, and from one platform to another as the user follows a single creator across multiple platforms.

Promo is a *derivative* of the scene, included in the flat rate for producing the scene, and consumed only in reference to the scene. It travels where the scene cannot and brings back users. As it does so, it enables the scene to spread across networks of accounts embedded within networks of platforms.

“I mean, I’ve been doing this for a hundred thousand years. I’ve never met a person that ever told me, ‘Yes, I watched a pornographic film from beginning to end.’”

The Softcore Scene

Softcore porn depicts sex without visible genitalia. Studios produce and distribute softcore scenes so that their content can travel even more widely across platforms. They sell these scenes to hotels and cruises, where they are aired on pay-per-view television platforms, and to websites in countries with more restrictive obscenity laws. As this suggests, platforms are subject to institutional and state regulations governing what kinds of content they can host and where that content can travel.

As with stills and BTS, a softcore scene is bundled into the flat rate that performers receive for shooting a hardcore scene. Typically, performers shoot the softcore scene directly after filming the hardcore scene. Performers reenact the same positions but only simulate penetrative sex, posing so that their genitalia are not visible on camera.

The edited softcore scene contains the same non-pornographic introductory dialogue filmed for the hardcore scene, combined with the softcore version of the sexual interaction. Yet this introductory scene would not exist without the softcore version. As one director explained to me:

Some of those movies also get repackaged. They get sold to Showtime and places like that. So there's a certain level of actual scripted dialogue. The story needs to have a beginning, middle, and end, whereas a lot of the other stuff we do is more vignette-oriented, where one scene doesn't have anything to do with the scene following it. They're self-contained, which is essentially what happened when porn moved away from DVD into just individual content sites. It was like, "Well, maybe people don't want to watch [the scripted dialogue]." I mean, I've been doing this for a hundred thousand years. I've never met a person that ever told me, "Yes, I watched a pornographic film from beginning to end."

... But when you're making softcore porn for a different market, then you need those story elements, because you're taking all the hardcore sex out. So now it's a different demographic or a different viewership watching that product. Even though it's the same product, it's just repurposed.

The softcore scene is a *composite* of the hardcore version and its softcore reenactment. The scene, in effect, mutates to conform to regulations—allowing it to travel further, across more platforms and wider geographic space.

The (Counterfeit) Clip

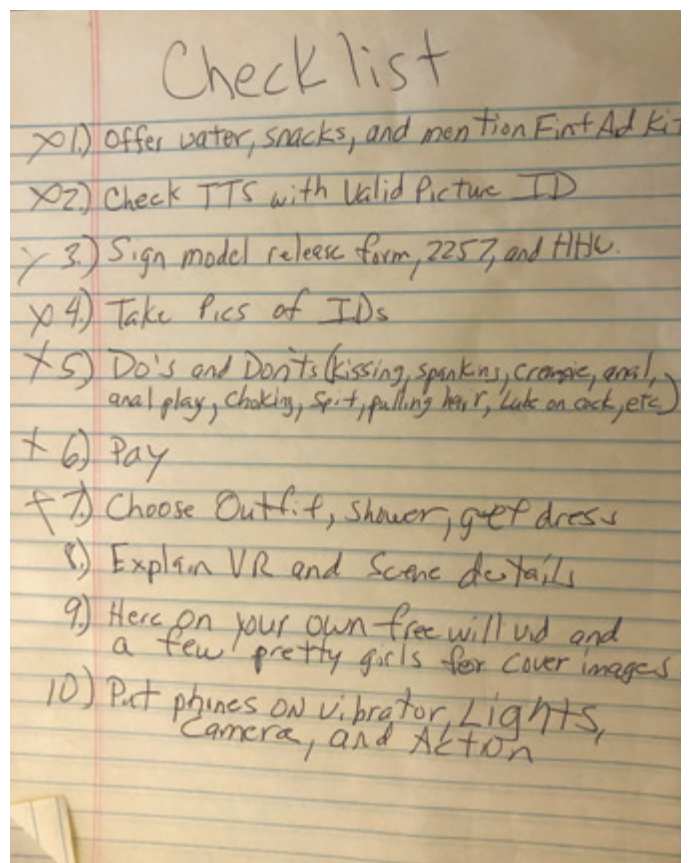
The clip is a short segment of a scene, or several segments spliced together, usually containing part of the sexual interaction, uploaded as a stand-alone video.

One form of clip is what's known as an ad scene. Ad scenes are produced by studios, and they are publicized on studio websites as standard scenes. But the primary function of ad scenes is to serve as banner ads—digital advertisements embedded in webpages. A studio produces a banner ad by editing an ad scene into a GIF: multiple moments of the scene spliced together into a short clip. The studio then pays tubesites to post the banner ad in order to drive traffic to the studio's website.





- ↑ Taking stills for promo during a studio shoot.
- ↖ Coordinating positions during a studio shoot.
- ← Filming an OnlyFans collab.
- Director's checklist before recording a shoot.



Unlike other scenes, where performers are typically allowed to stray from the script, studios script ad scenes tightly to produce the series of moments that they plan to splice. The ad scene is often deliberately staged as an outrageous scenario to serve as clickbait. On a panel at XBIZ, the porn industry's main trade convention, a director explained the logic to the audience:

Somebody's trapped in the washing machine. They're stuck in a window. There's some certain thing going on. And of course, the rationale behind that is these twelve seconds are going to be so outrageous, you're going to go, "Oh my God, I need to see how that turns out," and then click on it, right?

Studios and performers also truncate regular scenes into clips to upload to social media and tubesites. As with promo and ad scenes, these clips function as advertisements for full scenes, meant to entice the user to purchase access. But unlike promo, users often watch these clips in lieu of the original scenes.

Users can also become creators, not by making scenes, but by making new clips that they post to tubesites. Done without the authorization of the scene's legal owners, this is piracy. Counterfeit clips threaten the value of the original scenes because users may deem the clips sufficient to watch instead of the originals. To protect the value of their work, studios and performers contract companies to monitor platforms and to request platform moderators to remove counterfeits.

But this work is never done, and the threat is never fully vanquished. A clip can be endlessly reproduced, re-uploaded, and copied onto other platforms. Authorized and unauthorized creators alike struggle to control how these objects move across platforms. The clip is a *fragment* that is strategically severed from the original and further metastasizes it.

Coda

When a porn scene is posted online, it quickly replicates across platforms. But it does not remain whole and unchanged. Its derivatives, composites, and fragments move through alternative channels across digital and geographic space. These transformations accumulate over time, such that the scene is no longer a singular object, but one that replicates and mutates indefinitely.

No single actor controls this spread. Instead, it unfolds through distributed agency across a network of human and technological actors: performers and studio employees who post promo, fans who screen-record and share, algorithms that surface certain fragments over others.

In this way, the scene metastasizes, breaking away from the original body and seeding itself across new sites—where it continues to reproduce, mutate, and circulate. Its life is no longer anchored to a single upload. Instead, it is sustained by the platforms that keep its fragments in motion. *

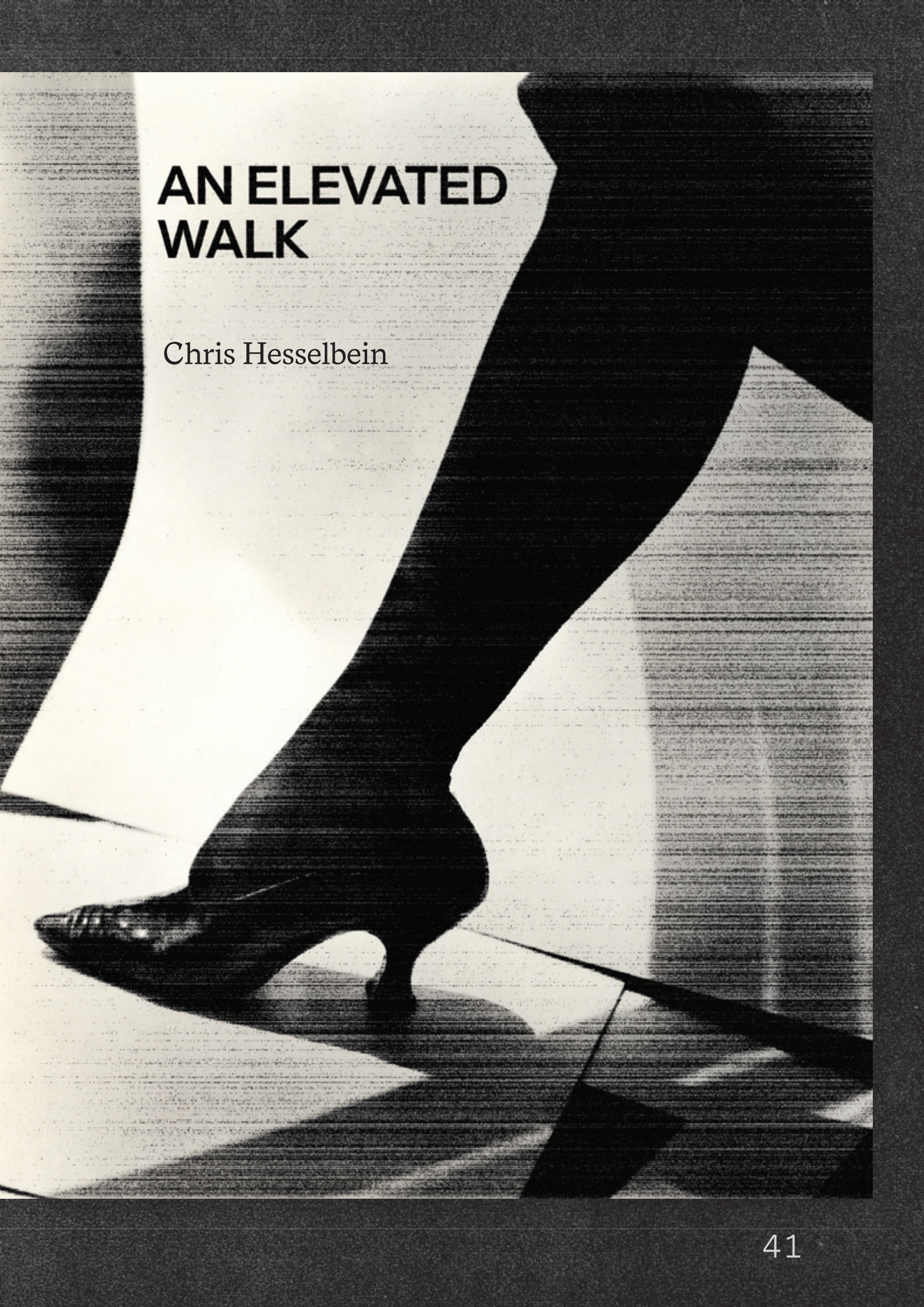
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PHOTO CREDITS

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On making high heels work

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AN ELEVATED WALK

Chris Hesselbein



← Mastering the high-heeled walk can bring joy and pain.

A HIGH-HEELED WALK can be truly spectacular. A fashion model strutting down the runway, a drag queen doing cartwheels, a businesswoman striding down a crowded, cracked sidewalk. High-heel wearers know that their shoes are not just a visual spectacle but also a deeply corporeal and affective experience, a continual reminder that they are sensate human beings. High heels elevate the wearer to a higher plane. Legs and buttocks reshaped, spine straightened, shoulders back and head held high, the transformation is physical and psychological. At work, high heels can heighten authority; at leisure, they can signal taste, confidence, or readiness for a fun night out. That distinctive gait—poised, deliberate—indicates an embodied presence that is performed step by step.

This is true, of course, only if you’ve mastered the high-heeled walk. But how is that done? Where do you start? What is a good walk and what does it accomplish?

Let’s start with the obvious. Put on high heels and you feel it immediately—first in your toes and the ball of your foot, then your entire foot. The sensation creeps up through your ankles, knees, and hips before settling in the lower back. Now walk. Not just on smooth floors, but over uneven pavement, sloping sidewalks, and slippery surfaces. Ankles wobble, calves tighten, toes burn, and balance requires constant attention. Even watching someone else struggling in high heels can make the body tense sympathetically. The elegant, upright posture forced on you by the high heels boosts your confidence. Briskly and effortlessly overtaking pedestrians while weaving your way through the city’s crowds can bring pure joy—and attract admiring glances. And, when the night ends, there is the distinct, undeniable pleasure of taking them off.

Apparel research has emphasized designers and their creative genius. Far less attention has been paid to the consumers of their products. While living and conducting research in New York, I sought to understand how high-heel wearers negotiate the sociomateriality of their shoes, their bodies, and the built environment. I began by approaching “catwalk coaches”—often former models or dancers, but also yoga instructors or bodywork therapists—who give high-heel instruction to models and others looking to improve their walk. As time went by, I found many others eager to recount their high-heeled experiences—even to a complete stranger. They opened up their closets, showed me their shoe collections and demonstrated their walks, took me shoe shopping, shared their high-heel hacks, and related deeply personal, sometimes embarrassing, and even intimate memories of wearing high heels.¹

High heels come in many styles, heights, and sizes, all bringing distinct pleasures and pains. The quintessential heel is the stiletto: slender, tall, iconic, and, for many, the most demanding to walk in. At the opposite end of the spectrum is the kitten heel, its modest height often derided as a concession to ease and comfort. As this distinction suggests, “high heel” is a slippery term. And, what immobilizes one wearer feels effortless to another. For every individual, some shoes instantly feel right; others never do.

1 Chris Hesselbein, “Walking the Catwalk: From Dressed Body to Dressed Embodiment,” *Fashion Theory* 25, no. 3 (2001): 367–393.



What counts as “high,” then, depends on the individual and the social context. And height, though important, is certainly not the only factor when selecting a shoe. Between the stiletto and the kitten heel lies a wide assortment of options: blocked or chunky heels, platform or wedge heels, boots both high and low. Not to mention all the brands, makes, materials, and colors. The sparkly buckle of a Blahnik. The red sole of a Louboutin. That dependable office staple, the black pump, or the towering height and imposing heft of a platform shoe, or that perennial symbol of summer, the raffia wedge. Men also wear shoes that add stature, though “elevator shoes” are designed to disguise their lift, while Cuban heels or cowboy boots advertise a particular performance of masculinity.

Each of these has different implications. A felicitous choice enhances appearance and signals financial means, taste, and sartorial know-how. An ill-chosen heel exposes poor judgement—of the occasion, of your outfit, of what others deem appropriate. Success is possible, but failure lurks. Your identity stands—or falls—on your shoes.

High heels do not simply work; they must be made to work. The encounter between a mass-produced shoe and an individual foot is not always a happy one—especially at first. Dedicated wearers therefore employ modification techniques that can be described as “breaking in.” Even as the body shapes the shoe, the shoe also reshapes the body. This mutual reconfiguration—and its frictions—can cause all manner of discomfort, pain, and even lasting damage. Yet we persist until the shoes become our own. A broken-in pair carries both body and memory.

But why wear shoes that make walking difficult, even painful? How does such footwear, long criticized by medical experts and feminists alike, manage to hold its ground? Why do so many women persist in wearing heels, and why do drag queens and trans women often *insist* on wearing them? Are high heels ridiculous and unhealthy—or do they actually empower and elevate?

To be conventionally feminine means not only buying and loving high heels but knowing when to wear them and, above all, how to move in them.² Many learn high-heeling early through the visual regimes of fashion and popular culture—the examples set by the likes of Naomi Campbell, Bugs Bunny in drag, and Carrie Bradshaw. Equally formative are grandmothers and mothers, or that aunt, family friend, or teacher who tells you it’s time to start walking like a real woman. Certain life events and transitional moments are expected to be navigated in heels; some workplaces and social occasions require them. Women in positions of power are rarely seen without them. High heels are nothing short of paradoxical: they are as showy, artificial, and spectacular as they are demure, natural, and mundane.

Research on the body and clothing may provide additional insights. Writing in the 1930s, the anthropologist and sociologist Marcel Mauss famously observed that “the body is man’s first and most natural instrument.” Although Mauss did not elaborate on the relationship between bodily techniques and apparel, he did observe that Parisian women had started to walk more like American women because of the nascent film industry. Alert to the influence of new media technologies on embodiment,

← When it comes to heels, choices abound and signal a great deal about the wearer.

2 Iris M. Young, *On Female Body Experience: “Throwing Like a Girl” and Other Essays* (Oxford University Press, 2005).



↑ When the night ends, taking high heels off is a distinct, undeniable pleasure.

3 Marcel Mauss, "Techniques of the Body," *Economy and Society* 2, no.1 (1973): 70–88.

Mauss was less perceptive when it came to other technologies. Several pages later he observed, "Nor can I understand how women can walk in high heels."³

In fashion studies, clothing and shoes are no longer treated as mere protection from the elements but as culturally charged, gendered commodities. Fashion and footwear are unapologetically capitalist forms of production and consumption. Why else would we have millions of types of shoes, more than could ever be justified by their utility? Why are women, in particular, expected to own so many shoes and care for them so deeply? Perhaps it's because high heels can make women feel authoritative yet feminine, powerful yet fashionable, able to cast themselves in different roles and embody different affects merely by changing their shoes. The paradoxes of the high heel mirror the many contradictions of feminine embodiment.

Walking in high heels is no easy feat. It involves obstruction and friction. It demands attention, endurance, willpower, and a certain amount of irrational exuberance. Yet, for many, this is precisely the point. High heels compel corporeality, forcing you to acknowledge weight, balance, surface, vulnerability. They sharpen your awareness of ability and limitation, of posture and perception, of attitude and discipline. They alter not only how one walks but how one is seen, and how one sees oneself. In this way, high heels make palpable the points where body meets world. They lift the body even as they expose its precarity. This is how culture gets under our skin—step by step, for better or worse—becoming an enduring yet ever-changing part of our selves. Objects that intensify embodiment rarely go out of fashion. They endure because they elevate sensation as much as stature. *

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Aspirational health
is not cheap

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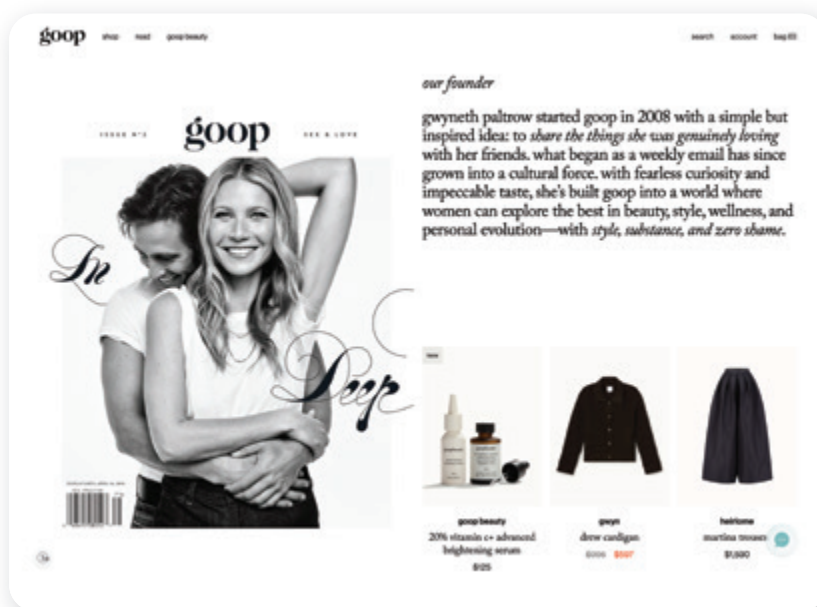
Shiloh Krupar

**BIG
WELLNESS**

AND

**GOOPY
GOVERNANCE**

LIFESTYLE BRAND GOOP commands a lucrative corner of the \$4 trillion global wellness industry, packaging high-end holistic services and celebrity-curated shopping with off-the-beaten-path doctrines about beauty, nutrition, and “glow.” Movie star Gwyneth Paltrow parlayed a newsletter—once filled with recipes, health tips, and travel recommendations—into this \$250 million empire. Today, *goop* spans a website, a print magazine, beauty and supplement lines, pop-up boutiques, and health summits costing upward of \$5,000 per ticket—all offering visions of personal optimization amid a crowded field of influencer platforms devoted to fitness, spirituality, and slimness.



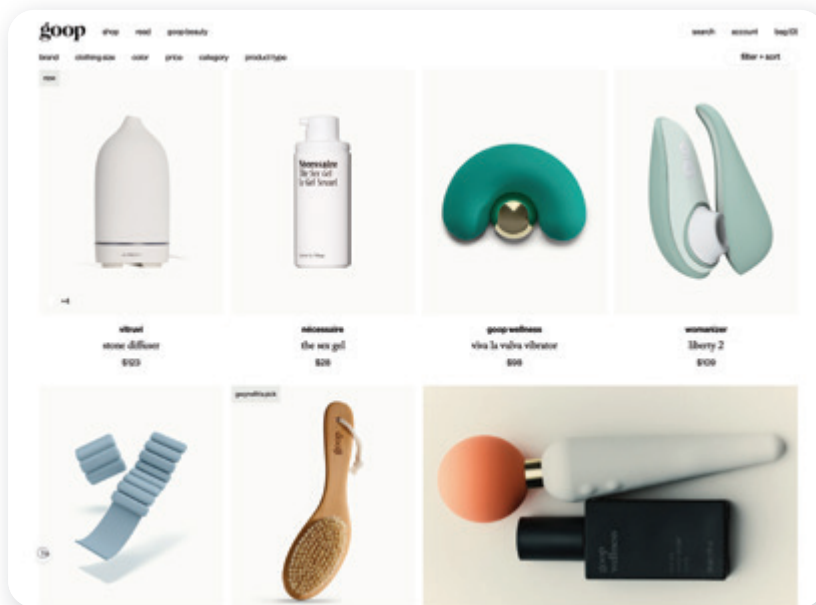
← Gwyneth Paltrow, nicknamed “GP,” is commonly referred to as the “OG” of the wellness and beauty space.

Thriving in the largely deregulated market of supplements and personal care, *goop* has featured everything from jade eggs for vaginal detox to its own Science and Regulatory Wellness Portal. The brand promises an enhanced, recombinant life through eclectic philosophical appropriations, “clean” food, and e-commerce, irrespective of government guidelines or scientific verification. As its twentieth anniversary approaches, *goop* has become a bellwether of influencer-led health governance. And in a landscape of unstable health care provision and absent social safety nets, even the US federal government has become a platform for Big Wellness.

Boosted by influencer culture, “wellness” typically denotes the proactive optimization of physical, mental, emotional, and spiritual life—a holistic alternative to curative medical strategies. It gestures toward a plural, globally inflected understanding of health, while demonstrating a malleability that helps drive its market power. As a nebulous ideal, wellness is able to fuel a vast industry of commercialized self-care that converts insecurity and desperation into a demand for premium remedies. With

energy healing, boutique fitness memberships, meditation apps, at-home DNA tests, and vitamin IV drips, the idea of wellness reframes health as an endless task of self-improvement.

Through deep-cleanse fasting and detox dusts, *goop* even commodifies depletion itself, selling self-imposed elimination as a lifestyle. *Goop*'s content dramatizes the difficulty of fasting and purification, aligning spiritual abnegation with the exclusivity of its curated goods. What religious studies



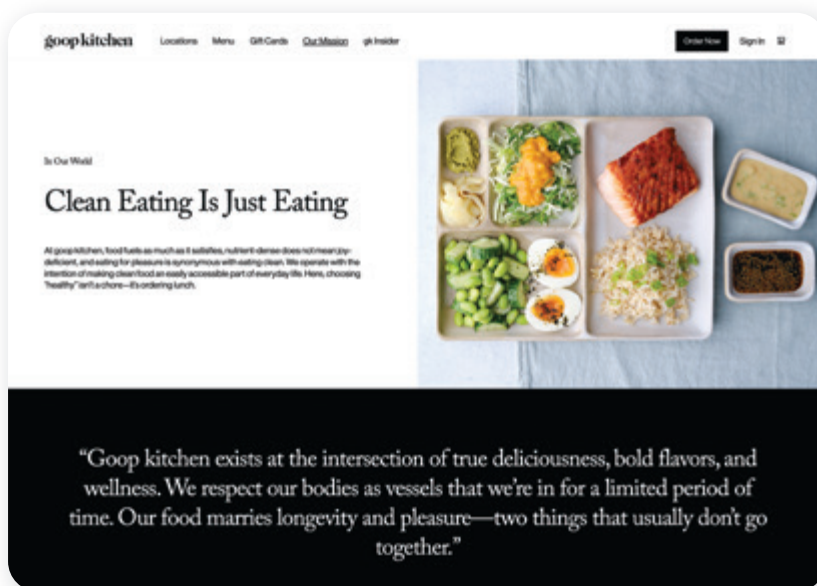
← *goop*'s mission: "follow our curiosity wherever it leads—then run it through our taste, discernment, and network of vetted experts. the goal? to share what we find with thoughtful clarity and unflinching honesty."

1 Dana Logan, "The Lean Closet: Asceticism in Postindustrial Consumer Culture," *Journal of the American Academy of Religion* 85, no. 3 (2017): 600–628.

scholar Dana Logan terms "ascetic accumulation" becomes a marketing strategy: disciplined self-denial framed as the path to optimized human potential.¹ The virtuous individual accomplishes health through devotional purchases and transactional well-being.

This rhetoric of personal responsibility grants businesses like *goop* free rein to shape health markets, generating enormous profits from the moral equation of physical attractiveness with righteousness. And wellness gadgets and diagnostic tools—from menopause magnets to at-home genetic tests—can dodge regulations when they market themselves as non-medical or low-risk and do not claim laboratory-level accuracy. Loopholes in the federal oversight of herbal supplements also enable companies like *goop* to evade the scrutiny applied to drugs and medical devices. In an era defined by deregulation and mistrust, the wellness industry relies instead on personal testimonials, anecdotal evidence, intuition, and celebrity endorsements to supply affective credibility, often displacing professional expertise or clinical evidence.

Paltrow personalizes and legitimizes this process through content centered on her own experiences. In *goop*'s "Food Stamp Challenge," Paltrow attempted to subsist on \$29 of groceries per week. The brief exercise converted food scarcity into a stage for moral uprightness, sympathy, and upgraded recipes for boxed staples—and translated political struggles into aesthetics. Paltrow ultimately gave herself a C, a grade that revealed less about poverty in the United States than the fact that aspirational wellness is not cheap.



← goop kitchen's quality assurance: "bringing much needed clarity to the term 'clean' with our own defined standard, goop Certified Clean. If you see GCC used to describe something on the menu, it means that item has no refined sugars, processed foods, gluten, dairy, seed oils, corn, peanuts, or preservatives."

2 James E. Causey, "I Doubt Trump's Ag Secretary Would Eat Her Own Meal Plan," *USA Today*, January 25, 2026.

↓ In January 2026 US Secretary of Agriculture Brooke Rollins and US Health and Human Services Secretary Robert F. Kennedy Jr. announced new 2025-2030 Dietary Guidelines that emphasize "real food" as a nutritious and affordable way to eat on roughly \$3 per meal.



By cosplaying the burden placed on women to manage limited resources while sustaining family health, Paltrow sidestepped the more urgent question of why food insecurity persists in the United States in the first place. As grocery prices climb, the response from Washington follows the same logic. US Secretary of Agriculture Brooke Rollins recently urged Americans to eat healthier on \$3 per meal, with a meal consisting of “a piece of chicken, a piece of broccoli, a corn tortilla, and one additional item” from the White House’s updated food pyramid—recasting systemic deprivation as a matter of discipline and choice.²

To be fair, *goop*’s techno-gadgetry and lifestyle spirituality attempt to address genuine and well-documented gaps in conventional medicine—failures that have disproportionately harmed Black, Indigenous, and other women of color. Yet the brand’s marketing works by exploiting the vastly unequal health and education systems, fears surrounding sexual health and fertility, and misogynistic beliefs that women’s bodies are unclean and must be socially surveilled. Leveraging ambivalence toward scientific authority, *goop* claims to be “providing information without judgment” and “just asking questions” (a practice so common in the influencer-scape that it has earned the rude sobriquet of “JAQing off”). The company ventriloquizes patient-centered health care’s language of consumer choice, presenting a supposedly innocent à-la-carte menu that lets users select what’s right for them within a free-market paradigm.

Consumer sovereignty is reinforced through *goop* product labels that signal agency and discernment: “for your enjoyment” (no solid science backing), or “ancient modality” (an old concept not yet proven), or “rigorously tested” (PhDs and doctors agree). When criticized for promoting pseudoscience—from vaginal steaming to bee sting therapy—Paltrow reframes the critique as an affront to female empowerment and body positivity, casting aspiration and self-care as feminist virtues, and converting public disdain into a self-appreciation exercise.

↓ Paltrow has said she participates in a “Fight Club” groupchat of female CEOs, while Joe Rogan serves as premier commentator for the Ultimate Fighting Championship (UFC) organization. Fashion media company Haloscope featured the comparison on their website in December of 2025.

Goop’s blended business and media platform complements an ascendant “manosphere” of podcasts and dubious product trials that equate pain with bravery and “body hacking” with being superhuman. Current trends in men’s wellness culture include “hardness culture” and “jelqing” (penis stretching). The one-stop-shop digital dispensary HIMS hawks erectile dysfunction drugs, hair-loss remedies, and other direct-to-consumer personal care products. And the multi-platform podcaster, Spotify content partner, and JAQ-off enthusiast Joe Rogan endorses “alpha brain” pills, protein “maxxing,” and hormone-optimizing cold plunges, marshaling a never-ending and wallet-draining quest for masculinity and peak performance.



3 Michelle Ruiz, “Gwyneth Paltrow on Motherhood, MAHA, Meghan Markle, Making Out with Timothée Chalamet—and Much More,” *Vanity Fair*, March 18, 2025.

Meanwhile, under a recently reined-in focus on beauty, nutrition, and fashion—accompanied by mass layoffs and severed budget retail partnerships—*goop* has quietly retired its overt sexual wellness branding. Customers once courted with “This Smells Like My Vagina” candles and gold-plated vibrators were deemed insufficiently loyal;³ a \$145,000 settlement over unsubstantiated health claims hastened the pivot.

As the company’s brand refresh flushes away the residue of New Age sex-goddess-hood, *goop* peddles limitless detox opportunities for the entire pre-pregnant to pregnant body spectrum, tapping into resurgent white pronatalism—a target market that spans Silicon Valley’s transhumanists to the Heritage Foundation’s tradwives. Even as the *goop* blog advocates progressive policies like paid maternity leave and calls attention to oft-ignored conditions such as antepartum and postpartum depression, its brand content converges with the fertility anxiety and womb surveillance of the “Make America Healthy Again” agenda (MAHA) led by the influencer-socialite and US Health and Human Services Secretary Robert F. Kennedy Jr.



↑ Under MAGA and MAHA influencers Donald J. Trump and RFK Jr., government proposals contradict the regulatory agencies they are meant to reform.

Once peripheral, the Big Wellness industry now overlaps with the vaccine denial lobby that currently occupies federal health offices—promising efficiency, access, vitality, and quality of life, while leaving intact the structural deficits of inadequate health insurance, food insecurity, and other inequities. Its deregulation mantra operates as paranoia and promise, invoking institutional mistrust in order to refute evidence, logic, and accountability. Health is reframed not as a public good but a provocation: a theater of incendiary claims that erode social protections while disclaiming responsibility.

When President Trump falsely attributed autism to Tylenol, anti-vax influencers-turned-advisors were furious that vaccines were not targeted as the culprit. This is entrepreneurial contrarianism as governance: regulatory debate reduced to JAQing off, long-standing research consensus rejected as dogma, and critical thinking displaced by performative skepticism. What should be a public process of civic engagement and collective care becomes another platform to be monetized.

As Paltrow and RFK Jr. promote goat milk cleanses and raw milk shooters, rejecting over a century of accrued scientific knowledge about pasteurization, the MAHA Commission advances food industry deregulation and dismantles federal barriers to unpasteurized milk sales. Under the leadership of RFK Jr., MAHA touted “gold-standard science” in a 2025 report.⁴ That report was found to contain AI-generated citations of non-existent studies.⁵ “Make our children healthy again” strategies include relaxing infant formula regulations (“Operation Stork Speed”), directing federal nutrition programs to focus on national breastfeeding rates, and treating the resurgence of measles and other preventable diseases as matters of personal freedom. Television host and Centers for Medicare and Medicaid Services official Dr. Oz heralds robot-performed ultrasounds on pregnant moms as the solution to rural America’s lack of OB-GYNs. RFK Jr. maintains that wi-fi causes cancer and “leaky brains.”

Paltrow’s own words illustrate the incoherent ambivalence of influencer governance best, “What is actually meant to be incendiary and what is actually meant to be policy?”⁶ *

4 MAHA Commission, *The MAHA Report*, May 2025.

5 Caitlin Gilbert, Emily Wright, Fenit Nirappil, and Lauren Webber, “The MAHA Report’s AI Fingerprints, Annotated,” *Washington Post*, May 30, 2025.

6 Ruiz, “Gwyneth Paltrow.”

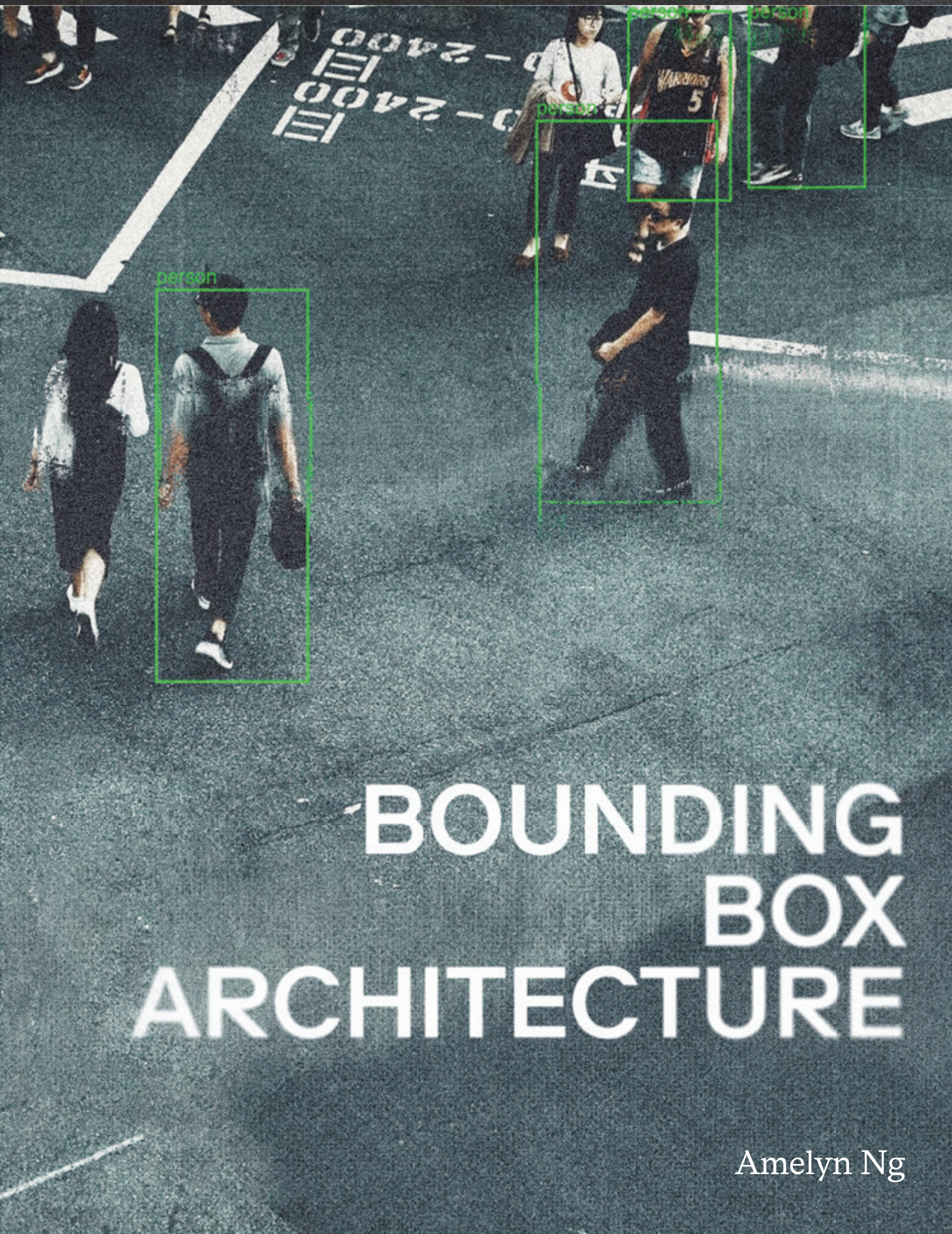
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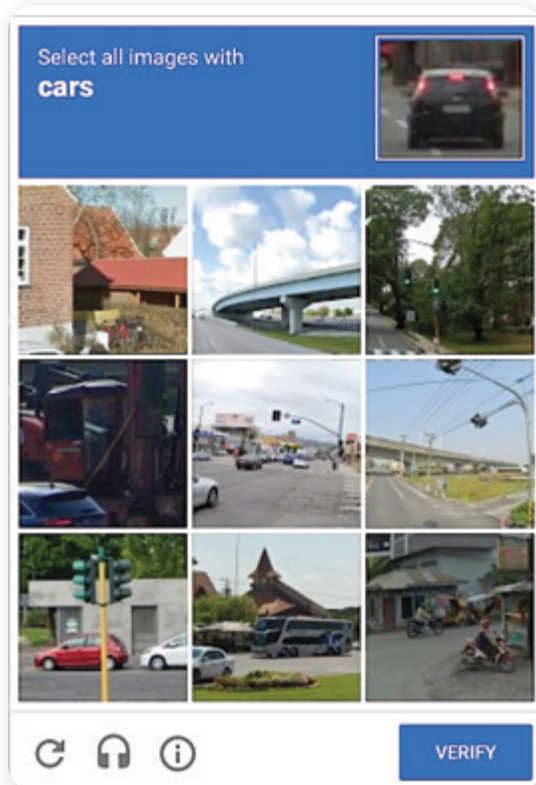
Seeing the relationships
that leak from the frame

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BOUNDING BOX ARCHITECTURE

Amelyn Ng



↑ An example of Google's reCAPTCHA dialog.

ALONG THE PATH to developing computer vision, the built environment is surveilled, framed, and tagged through bounding boxes. The bounding box is an annotative device used in AI training—a rectangular frame temporarily drawn over an image in order to isolate an object or “region of interest.” By labeling each box with a classification—*car, tree, desk, bed, laptop, person*—bounding boxes form a basic vocabulary for identifying things in images. In the race to train deep learning models to identify and discern ever larger aggregates of objects in the real world, rectangular frames now relentlessly pepper surveillance footage of rush-hour traffic, factory assembly lines, crowds of pedestrians, and domestic settings, breaking visual information down into localized, machine-readable parts. As computer vision develops, these frames wrap ever tighter around the edges of their subjects in the form of polygons and automatic segmentation masks.¹

This kind of image classification is not new. Over the last decade, most internet users have unwittingly trained Google's AI models through the dreaded pop-up dialog known as reCAPTCHA (Revised Completely Automated Public Turing test to tell Computers and Humans Apart). Presenting a grid of banal street scenes that demand to be identified—*select all images with traffic lights!*—the wearisome web security test doubles as a free training platform for machine learning and AI benchmarking.²

Often invisible to the end user (or hidden in plain sight), bounding box architecture structures a kind of “platform seeing,” in which images in massive datasets are “not simply quantified, but labelled, formatted and made ‘platform-ready.’”³ To see by platform is to apply its classifying logics to everything, everywhere—and to guess based on probabilities and built-in assumptions. The innocuous bounding box is, in fact, a black box of training decisions that proliferates profiling and surveillance systems, and attempts to best-fit the world through algorithmic verification. But even as AI models are invoked as totalizing systems of classification, “no universal standard is possible.”⁴ In its attempts to distinguish signal from noise and order from disorder, these definitive borders enforce a poverty of relations between ultimately “leaky subjects.”⁵

Boxes are not even limited to detecting visible objects. They can form zones of prediction based on past records, such as reported crime data, which can then grossly exaggerate crime alerts while appearing authoritative. Take the now-defunct PredPol, a notoriously racist predictive policing platform that covered neighborhood maps with 500-foot by

1 “Image Annotation Guide: Types, Techniques & Best Practices for Machine Learning,” Sama.

2 “By Typing Captcha, You Are Actually Helping AI's Training,” *Associated Press*, November 27, 2020.

3 Adrian MacKenzie and Anna Munster, “Platform Seeing: Image Ensembles and Their Invisibilities,” *Theory, Culture & Society* 36, no. 5 (2019), 5–7.

4 Geoffrey C. Bowker and Susan Leigh Star, “Classification, Coding, and Coordination,” in *Sorting Things Out: Classification and Its Consequences* (MIT Press, 1999), 158.

5 Elisa Giardina Papa, *Leaking Subjects and Bounding Boxes: On Training AI* (Sorry Press, 2022), 6.

6 Jackie Wang, *Carceral Capitalism* (MIT Press, 2018), 242–243.

7 “Ghost Workers in the AI Machine,” Communications Workers of America, accessed October 26, 2025.

8 Samuel Stewart-Halevy, “Shortcuts,” *e-flux Architecture*, January 26, 2018.

500-foot boxes, drawing “temporary crime zones” around areas where crime was expected to occur. When “merely passing through one of the red boxes” can “constitute probable cause,” it matters who and what the box enframes.⁶

The bounding box is also a sign that a vast amount of work has taken place. The chore of data annotation—repetitively outlining, tagging, and describing objects in millions of training images—has a human cost that remains largely invisible.

Consider the (problematically named) Amazon Mechanical Turk platform, a digital sweatshop for AI data classification and content moderation. It crowdsources gig workers around the world to perform menial and extremely underpaid annotation tasks without access to employer protections or a minimum wage. This class of hidden figures—what the Communications Workers of America union (CWA) has called “ghost workers in the AI machine”—is conveniently left out of the frame of computational recognition.⁷ Worker-led activist groups such as Turkopticon have emerged to fill the gap and to advocate for online data workers who face unfair treatment, rejected tasks, and suspended accounts.

I wish to recast the bounding box as a device that irrevocably binds the graphical with the spatial and the social—that is, as a relational rather than classificatory technique of visualization. In architectural drawing, the edges of plans and sections are cropped by an invisible rectangle, or views are condensed with break-lines so that they fit on a single sheet. Such “shortcuts” imply continuity between drawings without representing every inch of a building.⁸

Along similar lines, the comic panel might be understood as a bounding box in the realm of sequential narrative. Panels accumulate on a page as a deliberate composition of spaces over time, inviting the eye to read not only what is contained by a single panel, but across a spatial sequence. Graphic artists such as Richard McGuire and Chris Ware use panels within panels to collapse different temporalities of lived experience into depictions of architectural space. Winsor McCay’s comic innovations, dated over a century ago, shatter the bounding box altogether.

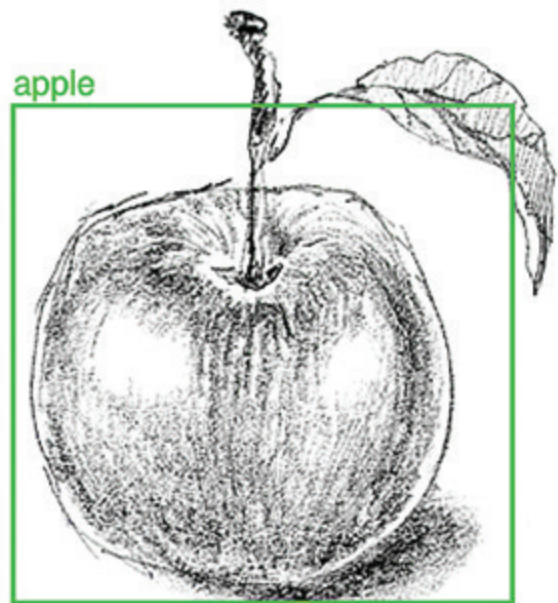


→ Cartoon strip by Winsor McCay, 1905.

9 The “Training Task 01” cited in the following comic is a real training question from the Amazon Mechanical Turk platform. See “We Are the Foundation of AI Models!,” Turkopticon, June 2, 2023.

The following graphic essay offers a series of windows into the everyday life of an annotator working from home. Drawn from reports conducted by Turkopticon and CWA’s interviews with US-based data workers, it plays on the relentlessly classifying gaze of the bounding box, as well as the many computer windows that mediate remote work.⁹ The comic points out a fundamental mismatch between the contents of data work and its precarious social contexts: the unpaid bill, the unrefilled medication, the child in the next room, the exhausted mother, and the atomization of gig work.

The comic format ultimately calls the bounding box into question, and rejects “platform seeing” in favor of a partial, specific perspective into human relationships. In my own tests, cartoons and comics seem to prove particularly difficult for general-purpose AI training platforms to detect. May the comic genre sow more seeds of playful, willful platform resistance. *



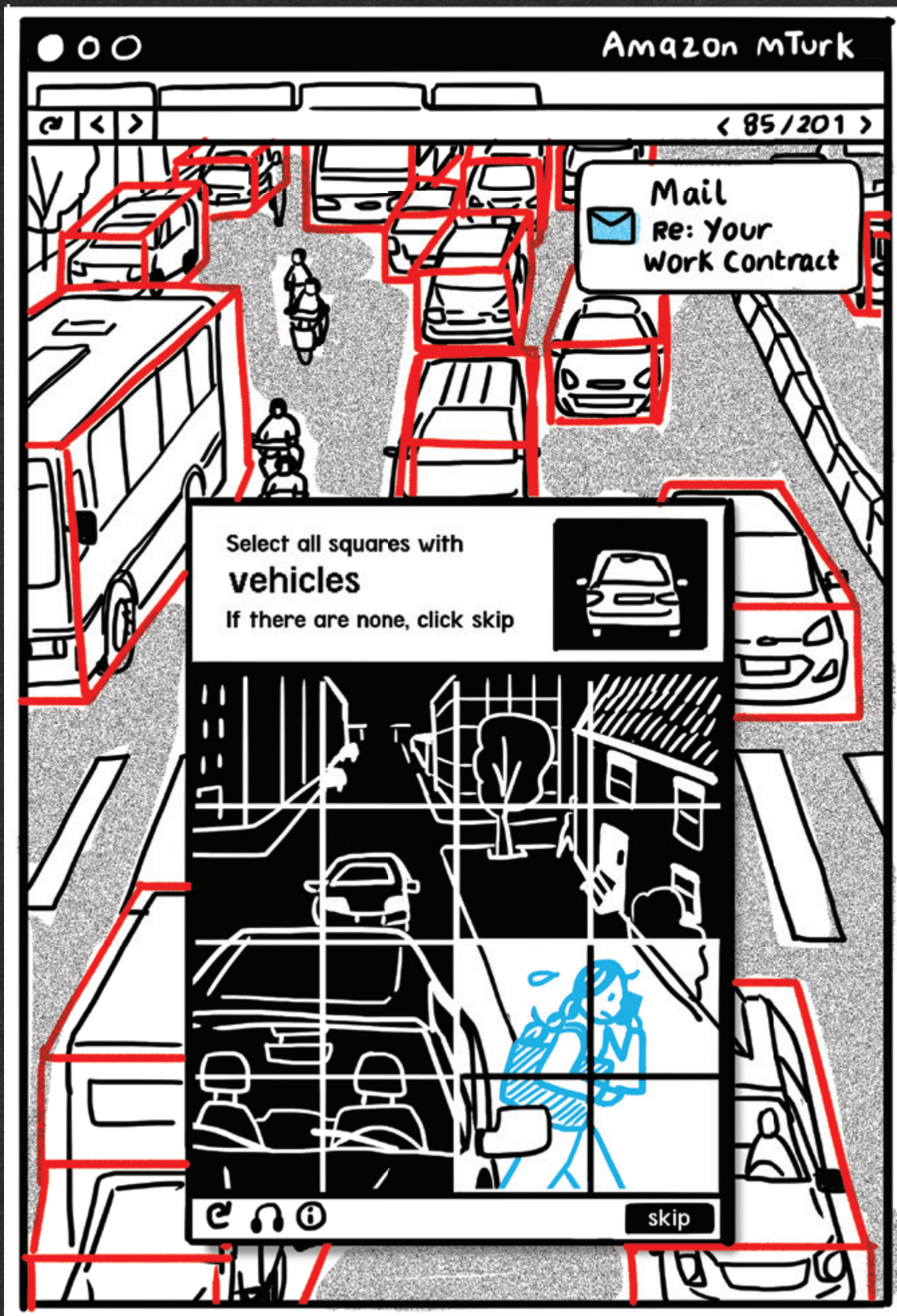
↗ Given its predilection for realism, AI fails to detect a simple cartoon outline.



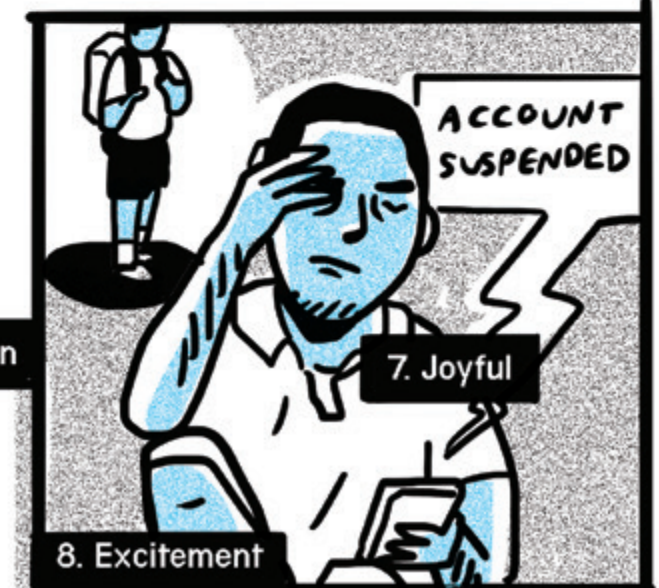
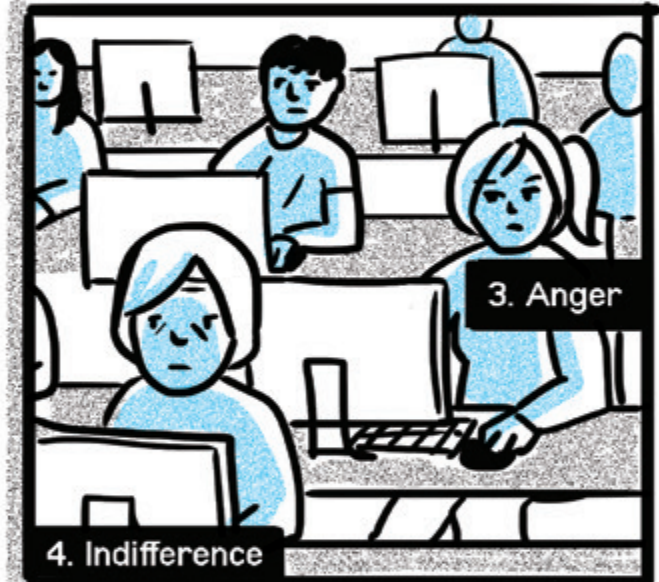
AMELYN NG is an architect, cartoonist, and Assistant Professor at Columbia University Graduate School of Architecture, Planning and Preservation. Her most recent work on architecture and media includes "Storing Architecture in the Climate Breakdown," *Thresholds* 54 (2026), and "Seeing Like a Doorbell," *Avery Review* 75 (March 2026).

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- p.58: Screenshot of Google's reCAPTCHA by Amelyn Ng
- p.59: Winsor McCay, *Little Sammy Sneeze*, September 25, 1905
- p.60: Image by Amelyn Ng



TRAINING TASK 01: What is the emotion expressed in the following sentence?



This is an automated message.

We regret to inform you that your data-work contract will not be renewed next month.



You will continue to be paid

phone

at the rate of \$2.15/hour

letter

bottle

pill

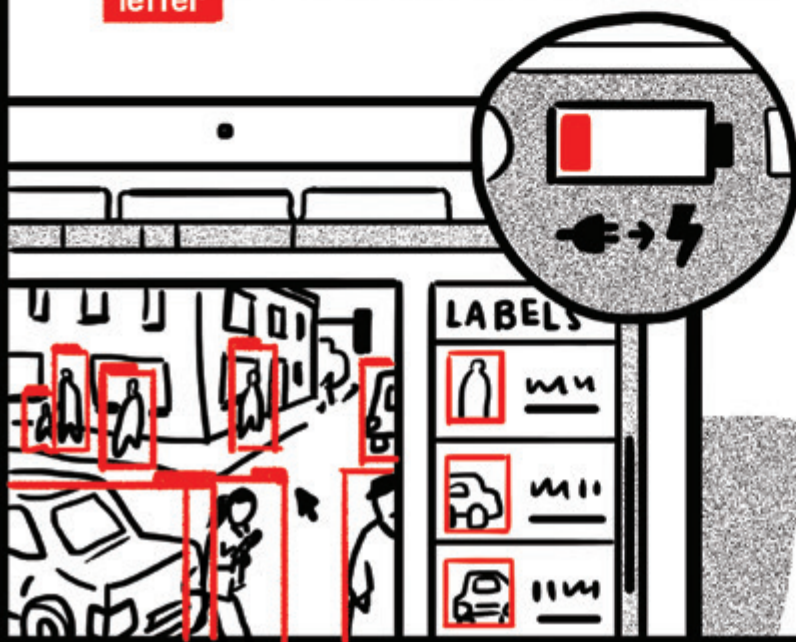
medicine

pill

until the termination of your contract.

letter

takeout-container



... MOM?

Thank you for your —



UN Live's promise of
social repair through
teleconferencing

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CLIMATE CHANGE CHATTER INSIDE THE BOX

Juan Llamas-Rodriguez



↑ The Mexico City_Portal in December 2019, back when it was hosting long-distance meetups facilitated through Twitter.

1 Juan Llamas-Rodriguez, "Portals, Platforms, and Other Standards of Global Communication," *Media Fields Journal*, no. 17 (2022).

2 Shared_Studios portals have been rebranded before. For instance, the Portals Policing Project at Yale Law School used them from 2016 to 2018 to connect highly policed communities.

IN SUMMER 2022, I published an article about Shared_Studios, an organization that created "portals"—retrofitted shipping containers equipped with Zoom—to host curated conversations and music jams that would "connect people across the world." I concluded by admitting that I was curious how these steel boxes for transnational teleconferences would hold up, now that we have grown accustomed to—perhaps even tired of—virtual boxes as our default mode of communication.¹

Later that year, I had the chance to address that curiosity during my first visit to Mexico City after the COVID-19 lockdowns were lifted. I had previously visited the installation known as "Mexico City_Portal" when it was run exclusively by Shared_Studios, but this time I noticed that it had been painted a new shade of blue, with "Museum for the United Nations," "UN Live," and the IKEA Foundation logo stenciled in white.

After walking by the portal every day for a week, I saw the door slightly ajar on a Thursday afternoon. I met the curator in charge—let's call her Lluvia—who had been working with the portal since 2018. She said they had shut down for the first year and a half of the pandemic, and that, after this rebrand, they were part of a network operated by UN Live (an independent institution based in Denmark that is not affiliated with the United Nations). Though the portal still hosted conversations and music sessions, their focus had shifted to climate change.²

She invited me to join a conversation happening inside the portal at that very moment. The person sitting inside—let's call her Veronica—was a climate activist in Mexico City and one of the new curators hired for the rebranded project. On the screen was a curator in Denmark and another person. Veronica explained that they were in the middle of considering two questions: Who is missing from the discussions around climate change? Who needs to be invited into the conversation?

"Migrants," I said, "especially those who have been displaced by capitalism's deleterious effects on their homelands." Everyone nodded. There was no follow-up, just a general consensus about the need to include "diverse voices." The conversation struck me as very casual. No one seemed to be taking notes or keeping any record of what was being discussed. My preliminary conclusion was that *having the conversation* seemed to be the goal in itself.

I excused myself and, on my way out, asked Lluvia when the portal would be open again. She told me that they had three sessions scheduled the next day: Palestine at 9:00 a.m., South Africa at 10:00 a.m. and the Netherlands at 11:00 a.m.. I told her that I would be back the next morning.

* * *

I arrived shortly after 9:00 a.m. on Friday. Inside the portal I found Lluvia and two other women waiting for the other side to connect. I asked if we were waiting for the Palestine portal and, to my chagrin, Lluvia said, “No,

they can’t make it. We’re connecting with Iraq.” I noticed that, apart from the portrait mode screen, the interface was almost identical to the Zoom interface on my computer. “Ugh, they are not using the link,” Lluvia said, but she answered the call nonetheless.

On the screen was a young woman whom I’ll call Nadia. Maybe twenty years old, she was the curator for the Iraq portal. Five young men, also in their twenties, came in and said hello. After some small talk it became evident that none of the men spoke English, so Nadia had to translate—or summarize—everything they said into English, and everything we said into Arabic.

Lluvia suggested we start the music jam. It was clear this would not be a talking session. One of the women in the Mexico City portal, Dulce, a professional musician, played a famous Mexican folk song on her guitar. When she was done, everyone clapped. Dulce began playing a second song when, suddenly, the Iraq feed cut out. Lluvia struggled to get them back online for a minute, then gave up. “Their internet must be down,” she said matter-of-factly.

While waiting for the Iraq portal to come back online, I asked Lluvia questions about the project and how the UN Live rebrand was going. When I brought up the issue of language, she told me that most sessions rely on participants speaking some English or curators translating haphazardly, as Nadia had done. Curators had been asked to keep the sessions “light,” focusing primarily on music until more specific programming was put in place. I asked Lluvia what she thought of this rebrand and she admitted that she preferred the older model. The UN Live leaders had asked that all conversations be solely focused on climate change—to the extent that, if participants go off on a tangent, curators must redirect the conversation to the topic at hand.



↑ The portal in December 2022, after it was rebranded as the Museum for the United Nations—UN Live.

I wondered how the network leaders would even know if conversations went off track. Lluvia explained that each session has a dedicated Zoom meeting link, which both sides use to log on instead of calling each other directly through their personal meeting rooms. The dedicated meeting link is set up to record automatically—without the usual Zoom alert—and to upload the final recording to UN Live’s cloud storage.

Suddenly, Nadia and the young men reappeared, and Dulce began another song on the guitar.

* * *

“Communication sometimes masquerades as the great solution to human ills,” wrote John Durham Peters in 1999, yet we often mistake communication for a “semantic or psychological” problem rather than a “more basically political and ethical” one.³ In the conversations facilitated by UN Live, there is no semantic problem to address: plenty has been said about the stakes of climate change. Channeling a call for action into a strictly structured, platform-mediated conversation struck me as a turn toward inaction.

The platform itself plays a role in this. After the isolation of the pandemic lockdowns, video teleconferencing platforms were “no longer simply concerned with bringing the distant near,” according to Gary Kafer. Rather, they have “entered into our historical present armed with a promise of social repair.”⁴ That promise is ever-present in UN Live’s foundational claim that what is most missing from climate change action is talk. The implication seems to be that, now that the video teleconferencing platform is there to facilitate that talk, *something* might happen.

UN Live’s first major event, just a month before my visit to the rebranded portal, was COP27, the United Nations Climate Change Conference. They had set up a Shared_Studios portal outside the event’s main venue in Sharm El Sheikh, Egypt. This launched the company’s “Global We” program, which sought to enable “young people and communities most affected by climate change to have two-way conversations with world leaders, who have the power and means to accelerate the decisions we need to protect our planet.”⁵

This framing assumes that what prevents world leaders from caring is the fact that they have not heard from young people or underrepresented voices. Meanwhile, the call to join the collective “Global We” enacts a flattening of responsibility. Stating that “we” should all care about climate change because it affects “us all” ignores the uneven distribution of harm that already existing climate disasters wreak on disenfranchised communities in the Global South.

After learning that the meetups are recorded, without the participants’ explicit consent, I better understood UN Live’s former CEO, Molly Voss Fannon, when she stated that their goal was “building a collection” of “actions.”⁶ In its recorded form, the once live conversation event becomes an object stored for future use.

3 John Durham Peters, *Speaking into the Air: A History of the Idea of Communication* (University of Chicago Press, 1999).

4 Gary Kafer, “Zoom in the Past Conditional,” *Jump Cut: A Review of Contemporary Media*, no. 60 (2021).

5 Museum for the United Nations—UN Live, “Join the Global We,” accessed November 7, 2023.

6 Lameez Omarjee, “This ‘museum’ is connecting people across borders to tackle the climate crisis,” *News 24*, November 20, 2022.

7 Museum for the United Nations—UN Live, “Celebrating #InternationalDayofDemocracy today,” X, September 15, 2023; Museum for the United Nations—UN Live, “Imagine a life where we could feel at ease when contemplating the planet’s health and our future on it,” X, June 15, 2023.



↑ The curator and three participants, including the author, looking at themselves on the portal’s wall screen during a call failure.

8 Museum for the United Nations—UN Live, “Press Release: Global We Conversations: Empathy, Connectedness, and Cultural Influence Can Drive Urgent Climate Action,” November 29, 2023.

In its first year, UN Live released promotional videos showing understandably upset people in places like Indonesia, Ethiopia, Brazil, and Barbados voicing their concerns to a screen in a shipping container. By that point, they were not speaking directly to “world leaders” as originally proposed, but to other civilians like themselves.⁷ Their concerns were collected by UN Live and edited into two-minute videos, centered on keywords like “caring” and “worry.”

The conclusion of these videos seems to be: Join them. Add your own story of frustration.

* * *

In November 2023, UN Live released a report stating that, based on three thousand of its recorded conversations across twenty-five locations worldwide, processed “through AI tools and deep human listening,” they have concluded that the global climate crisis should be “guided by empathy, social justice, and human well-being.”⁸ This suggests that the recordings are intended not only to “build a collection” for the figurative museum but also to mine data about what transpires in these conversations for the organization’s own market research.

UN Live’s promise of social repair through teleconferencing depends on a platform in the most basic economic sense: the initiative acts as an intermediary that brings together concerned parties (such as climate activists in two different cities), extracts their emotional and intellectual labor through conversation, and turns it into value.

So here was the ultimate purpose of all that talk: to channel everyday feelings of care, concern, and worry about climate change into hours of recordings—and then to submit

them to an AI platform which consumes enormous amounts of energy and water—only to reach the conclusion that hundreds of people around the world believe that someone, somewhere, should do something. *

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PHOTO CREDITS

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Communicative space
is a forgotten remedy

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**THE PAYPHONE
AND THE
COFFEE STAND**

Pablo J. Boczkowski

↓ Entrance to the *Hospital de Emergencias Psiquiátricas Torcuato de Alvear*.



↓ Walkway to the residency offices.



To Fred Turner, time traveler

Volver

I crossed that street almost every morning from 1990 to 1994. The gate behind the bus stop is the entrance to the *Hospital de Emergencias Psiquiátricas Torcuato de Alvear*, a public mental health facility located in La Paternal, a working-class neighborhood in Buenos Aires. During those years, I did my residency training in clinical psychology at the hospital. I left the country immediately after concluding the residency to pursue a doctorate in science and technology studies at Cornell University in the United States. Then, for almost three decades, I turned my professional attention to media and society. But a few years ago, I decided to connect my first and second careers through an ethnographic study of how and why mental health professionals in Argentina use—or don't use—digital technology in their work practices.

I took this picture (above left) during my fieldwork for the project, just as I was about to enter the hospital for the first time in twenty-nine years. To say that it was a momentous experience is an understatement.

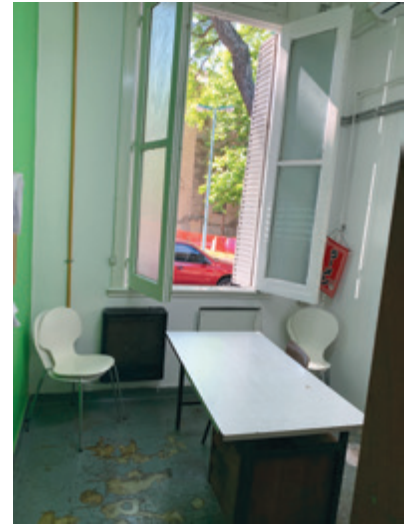
↓ Entrance to the residency offices.



↓ Print files in records office.



↓ Old consultation room.



When I stepped into the hospital grounds and walked along the walkway to the shack that housed the residency office, I felt like I was going back in time. It seemed like yesterday that I closed the office door and walked those fifty meters one last time before leaving for the States. I felt a disjuncture between the unchanged space and the changed self that ended up being both personally disconcerting and intellectually generative.

My host for the day, a former supervisor who has since become one of the longest-serving psychiatrists at the hospital, guided me through different units. In several administrative offices, it appeared that, even in our age of mobile devices, social media, and generative artificial intelligence, paper was still a dominant medium of communication and record-keeping. Some of the consultation rooms looked almost identical to the ones where I saw patients back in the early 1990s. For a moment, past and present fused, and I found myself experiencing again the world I had once inhabited.

↓ New cafeteria.



↓ New consultation room.



But not everything had stayed the same. Newer spaces such as outpatient consultation rooms and an indoor cafeteria brought me back to a present populated with desktop computers, wireless devices, plasma television sets, air-conditioning, fresh paint, and modern furniture. The coexistence of material cultures from two different historical periods in one place reminds us that the contemporary landscape—of which digital platforms are a powerful symbol—is not inevitable.

Re-Conocer

Perhaps nowhere was the presence of the past more evident than in the proximity of the new indoor cafeteria and a nonfunctioning payphone less than twenty meters away. When I did my training, the payphone was the epicenter of social life in the hospital. Since no professional, staff, patient, or family member had mobile devices, it was the lifeline to the outside world. And, it was adjacent to a small outdoor coffee stand where people gathered for cheap coffee and tasty pastries. While the payphone

↓ Old payphone.



is still visible, the coffee stand exists only in the memories of those who were there, like me.

Together, the payphone and the coffee stand afforded communicative practices very different from those that take place on digital platforms. Highlighting the main areas of divergence helps us understand not only what platforms do not provide us, but also what we might be missing because of that void.

Whereas the payphone was a shared point of contact with the outside world, and the coffee stand gathered people around a communal area, today's platforms orient people toward their personal devices and, often, their individual spaces. In the past, interactions were typically fleeting but focused. Nowadays, engagement with platforms is more often prolonged, but fragmented by multitasking. And, while the interactions around the payphone and the coffee stand were embodied and co-located, those that mark today's platforms are typically disembodied and remote.

Back in my days at the hospital, communication with the outside world via the payphone was relatively limited—among other reasons, it was quite costly. That sense of relative scarcity also marked interactions around the coffee stand: professionals and staff were busy, and patients and significant others would stop by and hang out mostly between appointments.

Today, people remain just as busy, yet abundance characterizes both the amount of information that exists on the platforms and the manner in which we consume it—perhaps best illustrated by the practice of doom-scrolling. In my own recollection, the more limited communication of the past seemed sufficient. By contrast, there is a sense today in which the bottomless pit of content and mediated interactions on digital platforms is never enough—which is, in part, why so many people post, react, and scroll incessantly.

Despite the relative scarcity, interactions around the payphone and the coffee stand made it a place of encounter, where a heterogenous collective would coalesce and disband uneventfully as part of the ebb and flow of everyday life. Today's platforms have largely become places of misencounter, in which social life is increasingly characterized by individual angst and interpersonal acrimony.

Questionar

In reflecting on the contrasts between the communicative experiences of yesterday and today, the world of the payphone and the coffee stand must not be idealized. There were many shortcomings related to who had a say and what could be said. It was also, in many ways, a small world, despite how frantic and diverse it might have seemed at times. By today's standards of global reach, temporal acceleration, multimodal expression, and cultural cosmopolitanism, the past looks mundane, quaint, even parochial.

And yet, even considering my incurable proclivity for nostalgia, I cannot help reminiscing about those smaller, slower, simpler communicative practices that we experienced around the payphone and the coffee stand, within a world marked by less psychological pain and more hope. According to my informants for this ethnography as well as epidemiological data, in recent years there has been a significant increase in the number of people suffering from mental health problems, in the intensity of their suffering, and in the despair with which they assess their prognoses—despite considerable advances in psychotherapeutic and psychopharmacological theory and practice.¹ Setting aside the debates about whether the abundance of digital platforms has played a role in this increase, the nexus of the payphone and the coffee stand reminds us of a time in which, borrowing from the lucid prose of Martín Caparrós, we had “so little ... and it was so much.”² *

1 “Mental Illness,” National Institute of Mental Health, accessed on July 3, 2025.

2 Martín Caparrós, *El Hambre* (Planeta, 2014) 9, my translation.

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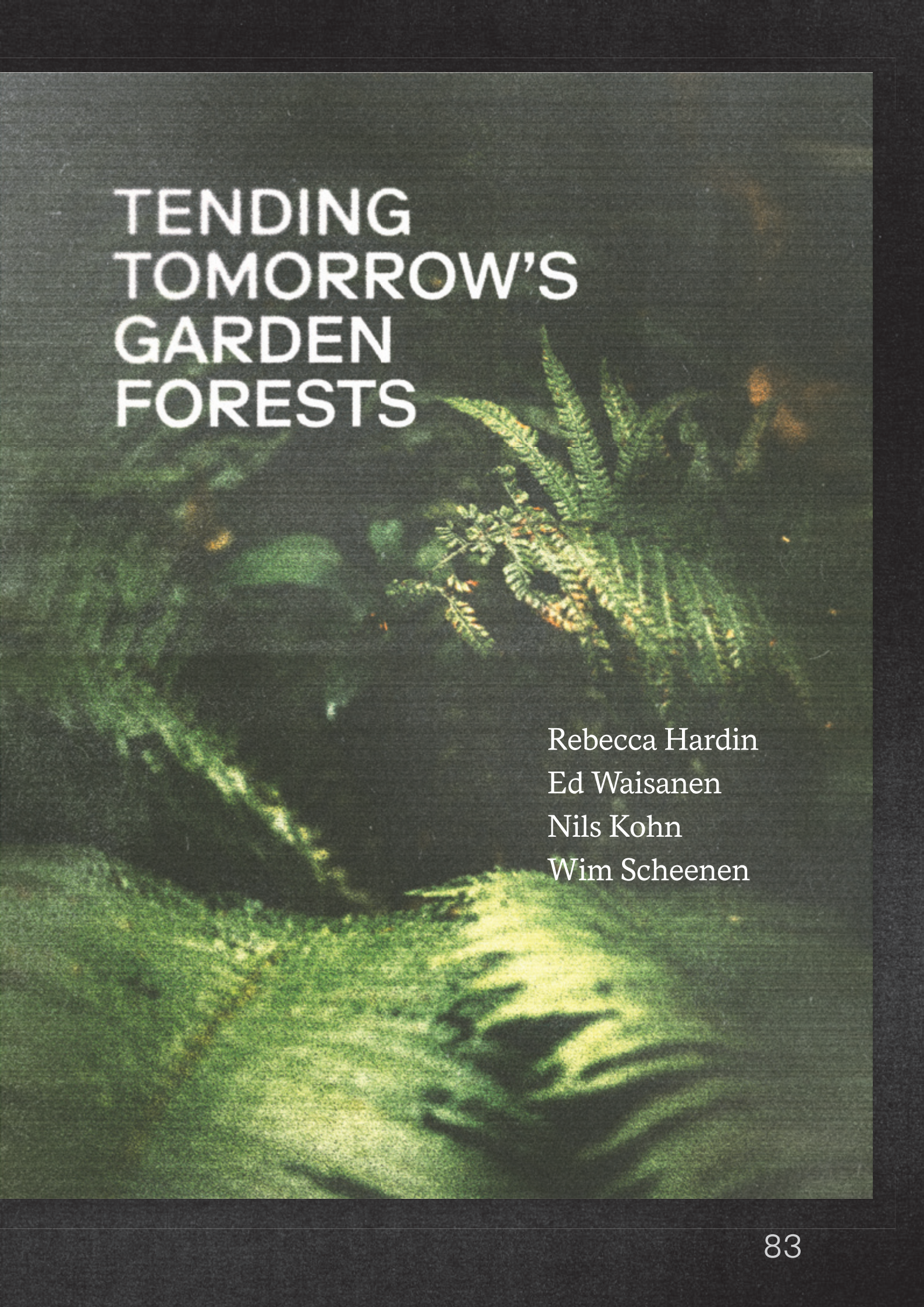
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Learning modules and
the possibilities of
cross-pollination

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[DOI.ORG/10.70312/PKQV](https://doi.org/10.70312/PKQV)



TENDING TOMORROW'S GARDEN FORESTS

Rebecca Hardin
Ed Waisanen
Nils Kohn
Wim Scheenen

1 David Wiley, “Open Education and the Future,” TEDxNYED Talk, March 6, 2010.

2 Mags Amond, “Embedded, Catalytic, Urgent, Embodied—Interpretative Phenomenological Analysis of Openness in Education Testimonials,” *Open Praxis* 17, no. 4 (2025): 821–829.

IN TODAY’S DYNAMIC open educational ecosystems, learning resources can be accessed, adapted, translated, and even transformed—available for free to anyone with an internet connection. The term “open” describes free-to-access textbooks, articles, lectures, and other learning tools that can enable knowledge sharing and make learning more affordable.¹ The people who make and maintain these ecosystems conduct work that is carefully documented, decentralized, and oriented toward complex webs of accomplishment rather than individual visions or restrictive intellectual and institutional property rights.²

Most of these exchanges take place over digital platforms that are themselves constantly evolving—platforms like Gala (www.learngala.com), an open-source web application that enables people to collaboratively create and share open educational resources known as OERs.

Gala’s first multimodal online case study addressed conflicts over wolf hunting in Michigan. Designed as a role-playing simulation for grad student orientation at the University of Michigan, it was also translated into French by scholars in Gabon, where conflict between wildlife and humans is common, and it was deployed there for both education and conservation.

Around that time, Gala also partnered with a case-based learning initiative at Tsinghua University in Beijing to create bilingual OERs and then research their uses in civic, conservation, and campus contexts in China and the United States. OERs thus enable intercultural education practice as well as research integration.

The Garden Forest

³ Meghan Wagner et al., “Gala: An Open-Access Platform for Interactive Learning with Sustainability Case Studies,” *IEEE Transactions on Learning Technologies* 14, no. 6 (2021): 788–801.

Cofounded around 2017 by Rebecca Hardin with student developers at the University of Michigan (and named after a Michigan apple variety), Gala was created to house and share learning content in the field of sustainability science.³ It has since been used to make

learning modules by communities of ecologists, neuroscientists, engineers, and many more. Supported by Ed Waisanen, a former student developer who now oversees platform development and instructional design, Gala has branched out in its capabilities through a multiplicity of slowly maturing partnerships between its makers and its users. Growth is driven not by strategic leadership, but by trends emanating from the collaboratively created content itself, which opens around us like a forest with a myriad of interconnected elements.



[↑] Gala cofounders and early collaborators, on the “Diag” at the University of Michigan, 2017.

Gala features a “nursery” where modules can be shared among collaborators, and an “orchard” where these modules can then be published as OERs under Creative Commons licenses. This licensing ensures retention of the authors’ rights when material is reused, but it also allows for revision, remixing, and redistribution; together, these are the “Five Rs of OERs.” Retention and reuse are common in open learning environments, while revision, remixing, and redistribution are harder to achieve.

Gala’s agility and adaptive structure, however, advance those latter three Rs within and across libraries of content that is created, reviewed, and curated by learning communities. The platform’s culture of development entails frequent conferrals and visits with colleagues in contexts with less stable, more mediated internet access, such as the aforementioned projects with China and Gabon.

One library on Gala is truly open, in the sense that anyone can make and publish material there. Libraries led by learning communities will sometimes, with the authors’ permissions, adopt material from the open library and develop it further. These connected efforts for the circulation of knowledge mimic cross-pollination in an ecosystem—both deriving from it, and driving it.

As forests, fields, and wetlands all around us become sites for data centers—raising questions about the costs of the virtual frontiers in which we work—it is useful, albeit ironic, to think of digital environments as forests. Archaeology and paleoecology have confirmed that, even in prehistoric



↑ An open-air study space, ringed with student-made plastic bottle planters, at the African University of Management, Libreville, Gabon.

← Mu Ling, a director at Tsinghua University's Policy School, listening in Henan province, China, to a Gala team presentation on case-based learning.

times, some forests were also a bit like gardens. They were, in a sense, tended by humans who moved through their surroundings, modifying soils and spreading plant species to create more benevolent conditions for our own becoming.

The Bats

4 Thomas Nagel, “What Is It Like to Be a Bat?” *Philosophical Review* 83, no. 4 (1974): 435–450.

Thomas Nagel’s 1974 essay “What Is It Like to Be a Bat?” considers the unknowability of the subjectivities of other beings.⁴ Nagel illustrated human limitations in understanding by stating:

Our own experience provides the basic material for our imagination, whose range is therefore limited. It will not help to try to imagine that one has webbing on one’s arms, which enables one to fly around at dusk and dawn catching insects in one’s mouth; that one has very poor vision, and perceives the surrounding world by a system of reflected high-frequency sound signals; and that one spends the day hanging upside down by one’s feet in the attic.

Instead, he argued, we must turn to objective facts “that can be observed and understood from many points of view” if we are to make sense of phenomena beyond our experience—“to know what it is like for a *bat* to be a bat.” More generally, Nagel was musing on the philosophical question of the relationship between consciousness and body, which he summed up by saying, “We have at present no conception of what an explanation of the physical nature of a mental phenomenon would be.”

The essay is poignant to reread at a time when we so closely collaborate with machines—machines not dissimilar to what Nagel calls “robots and automata that behaved like people though they experience nothing.” Fast forward to today, and economic, technological, and epidemiological circumstances have accelerated the proliferation of techniques at our disposal in the pursuit of knowledge sharing.

During the COVID-19 pandemic, as people pivoted to virtual learning like online lectures, Nils Kohn (an educator at the Donders Institute for Brain, Cognition, and Behavior at Radboud University Medical Center, in Nijmegen, Netherlands) noticed a gap in interactive communication between students and teachers. To bridge that divide, he worked with his colleague James Cousins at Radboud, which provides curricular support for the NeurotechEU consortium. That group of nine European universities relies on shared digital curricula, and had been considering how to make them more modular and interactive. The “How to fMRI” learning module on Gala was born when, as Nils described it, “We acquired some Oculus Quest 2 headsets, and a 360-degree camera, then used Cenario VR to bring students stuck at home in the pandemic into the lab virtually.”

↓ The Donders Brain Lab at Radboud University, Nijmegen, Netherlands.



Functional magnetic resonance imaging, or fMRI, is a technique to measure and map brain activity—in effect, making the unknowable known. However, sharing this knowledge poses certain challenges. Nils noted, “We have to block scanners (ordinarily in use for research) for up to an hour to demo for learners, and even then learners standing in a small control room don’t see as much as when they have an enhanced VR experience.” The physical space constraints meant that only learners standing in front were getting high value. He also realized that his in-person intro to the technology had not been consistent from day to day—“whereas on Gala, consistent content that is good, even incrementally reviewed, is better training.”

To demonstrate to the consortium the viability of integrated digital and actual learning environments, Nils and James conducted a trial run for an introductory fMRI course. Feedback was positive, and personal: “I didn’t know MRIs were so loud,” and “I can virtually get in and lie down!”

Some learners during the trial run still requested supplemental in-person experiences. Nils commented on this mixed approach, noting, “A first MRI is a cortisol production event—less so with the virtual experience as intro.” Now dubbed a “digital twin approach,” content like that on Gala complements lecture-based online courses and conventional in-person trainings but does not replace them—relieving pressure on instructors and medical infrastructures, reinforcing learning at various levels, and reducing costs.

The learning modules thus created can also, in open learning systems, contribute to broader innovation. “How to fMRI” and the other Neurotech modules that Gala offers can also be uploaded on Training Space, a new forum for online courses nested within INCF. INCF is a historic open learning platform based in Sweden with a commitment to high-quality, standards-aligned neuroscience training. When the team behind Training Space met with the Gala team in Aberdeen in 2023 to brainstorm interoperability, it wasn’t just people traveling, but also knowledge objects. Assemblages of text, media, and increasingly interactive elements, Gala modules are complex artifacts with surprising capabilities—why *not* think of them as bats, improbable flying mammals able to cross watersheds and spread possibilities like pollen?

Cross-Pollination

While the fMRI module was being developed, Wim Scheenen and Gemma Van der Sluijs of the NeurotechEU team reviewed other content available in the Gala libraries. In particular, Wim loved the modules from the Detroit River Story Lab, a campus-civic-community collaboration that creates immersive case studies of urban wetland sites and tributaries on historically Indigenous lands. Wim was curious about the site-specific research and community conferral that undergirded those modules, and how they gave rise not only to learning materials, but also to blueprints for actual boats and boardwalks in increasingly flood-prone areas. This was an exemplar of tethering the virtual and the real.

“When Wim shared Detroit River modules, with media corresponding to a walk through real places, I adapted it to our MRI lab,” James explained. The NeurotechEU team also drove innovations that have improved Gala for other user communities, such as better features for writing mathematical

gala

← Overview Conversation Deploy this Case



The Rouge River: Redlining, Riverbanks, and Restoration in Metro Detroit

× 13p

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- 5 Population and Development Spread

Introductory Map Activity

Before beginning the case study, it may be helpful to become familiar with the Rouge River Watershed. The following activity is designed to help orient readers with important locations and ideas that will be mentioned throughout the case, as well as with the geography of the watershed as a whole. Using the [interactive watershed map](#) created by the Friends of the Rouge, complete the following activity and familiarize yourself with qualities and key locations of the watershed. The map will also be revisited at the end of the case study. Readers are encouraged to consult the map throughout the case as desired.

A PDF version of this activity can be found [here](#), though access to the online map is still necessary for completion.

2 2 123



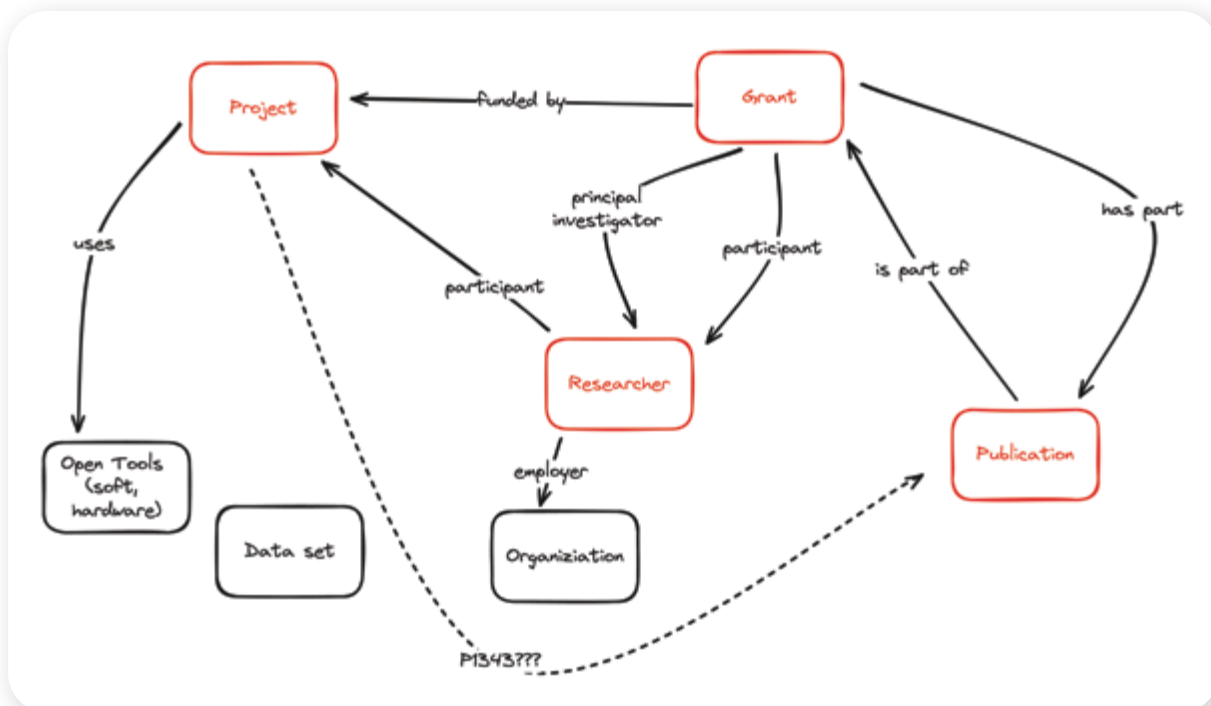
Rouge River Watershed Digital Terrain Map
fotr-rep.maps.arcgis.com

NAVIGATION INSTRUCTIONS:

Move around the map area by left-clicking and dragging across the screen. There is a pullout menu in the upper left corner where data layers on the map can be manipulated. Unless otherwise noted, there is no need to alter the layers for this activity.

↑ A Detroit River Story Lab module in the Gala library.

↓ Gerd Heber's sketch of the knowledge graph for SEEKCommons.



equations, and self-testing features that are consistent with best practices for learning retention.

By early fall of 2024, the fMRI module had moved on from review in the Gala nursery to publication in the orchard. Rebecca Hardin visited Nijmegen to facilitate a hybrid “networkshop” with faculty participants from Turkey, Spain, the Netherlands, Germany, and Sweden. All watched James and Nils share the module on-screen, offering guidance for final revisions.

Before long, the “How to fMRI” module caught the eye of Gerd Heber, a researcher from the Socio-Environmental Knowledge Commons project, or SEEKCommons, which is funded by the US National Science Foundation. He noted that the module’s collaborative, iterative development made it a good candidate for what is known as a knowledge graph. By aggregating module data such as software, patents, grants, and publications, a knowledge graph could be a valuable tool to illustrate the diverse contributions to the module and the knowledge represented therein.

Gerd “borrowed” the fMRI module to demonstrate how a knowledge graph of the kind Wikidata had been developing might be automated for use in Gala. Then he came to Chicago to meet the Gala team and its developers and designers from Atomic Object. Together, the group devised an intuitive user interface.

The resulting prototype was demonstrated at a SEEKCommons network meeting in Berkeley in December of 2024; the feature was then rolled out for a range of Gala content. Authors can now easily enter information that generates interactive Wikidata knowledge graphs. As SEEKCommons lead Rosado Murillo has remarked, this not only supports the struggle to keep web applications like Gala open, but also lets Wikidata “benefit from a simple, delightful user front end.”

Conclusion

The modules on wolf hunting, Chinese lakes, the Detroit River, and fMRI techniques all flutter across oceans and back on currents of hopeful collaborative energy. That such connections occur across such disparate communities through these modules—discoverable as they hang from their feet, trembling with possibilities in their home libraries—seems cause for celebration. Winging their way among classrooms, maker spaces, webinars, and workshops that are connected substantively and socially, not algorithmically, these OER bats and the platforms that shelter and nourish them are shaping ever more integrated open learning ecosystems.

At a time when ecosystems both real and virtual are subject to intensifying dangers, questions about how these platforms can ensure both adequate protection and cross-pollination for their content are only beginning to be asked in practice. We are imagining answers through our ongoing work, co-creating content that is tethered meaningfully to specific lived problems and places, and caring for it as it evolves beyond its original authorship. Embracing connection across both platforms and places, we explore what generosity in education and research can mean for humans seeking to return, in these technology-suffused times, to tending our shared garden forests. *

REBECCA HARDIN is Professor of Sustainable Development and Director of the Gala learning platform at the Pulte Institute at the Keough School of Global Affairs, University of Notre Dame. Her work began with the environmental anthropology of equatorial Africa and now includes the educational anthropology of technologies as they relate to experiential learning.

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Vaccine platforms reveal the
limits of global health's
imagination

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WAITING FOR mRNA



Aishani V. Aatresh

IN 2020, the shot heard round the world sprang not from a musket but from a syringe. The first vaccine against COVID-19—in fact, the first three—received emergency use regulatory authorization before New Year’s Eve, less than a year after the World Health Organization had declared a pandemic. Leaders across sectors and around the world attributed the vaccines’ rapid fabrication and widespread distribution to platform technologies: namely, mRNA and viral vector technologies. Instead of designing a bespoke vaccine from scratch, scientists at the US National Institutes of Health, Germany’s BioNTech, and Oxford University had encoded a genetic snippet of the novel coronavirus into a pre-engineered vaccine backbone.

Each of these platforms involved decades of development, yet research that previously had struggled to gain support found new acclaim through COVID-19. As one Oxford scientist recounted to me, “Nobody would ever fund platform development, and we tried ... But there was just this sudden flip.” For example, in 2023, the Nobel Prize in Physiology or Medicine recognized the 2005 breakthrough behind mRNA vaccine platforms—the synthesis of mRNA molecules through a method that averts an inflammatory immune response. The Nobel Committee emphasized that the “impressive flexibility and speed with which mRNA vaccines can be developed pave the way for using the new platform also for vaccines against other infectious diseases.”¹

Indeed, mRNA quickly became a gold standard of pandemic preparedness for politicians and scientists alike. Early demonstrations of support ranged from President Donald J. Trump exalting Operation Warp Speed during his first term in office to Senegalese scientists using the platform to train a “knowledge workforce” for the African continent.

Yet mRNA vaccines have increasingly been shrouded in controversy. US government agencies curtailed several mRNA-related programs in 2025, while more long-standing criticism has decried mRNA’s ultra-cold storage requirements, high costs, and potential side effects such as myocarditis. Dubbed the “Louis Vuitton” of vaccines by its makers, mRNA has been criticized by some as an inaccessible product. For others, “flexibility and speed” has prompted questions about regulatory oversight. The Oxford-AstraZeneca viral vector vaccine has been portrayed as “the people’s vaccine” in contrast with concerns about the usability of mRNA around the world, yet it has also been an object of scrutiny. It was never authorized by the US Food and Drug Administration, and regulators elsewhere reconsidered emergency approval in light of concerns about vaccine-related blood clots.

1 The Nobel Prize Organisation, “Press Release: The Nobel Prize in Physiology or Medicine 2023,” October 2, 2023.



↑ Vaccines memorialized in the National Museum of Scotland.

Popular discourse often reduces vaccine controversies to misinformed publics, self-interested politicians, and unwarranted obstacles to technological progress. Yet decades of scholarship in science and technology studies shows how risk assessment and regulation, and the making of credible public knowledge more generally, are inseparable from the ways in which societies expect power to be exercised and justified.

In this vein, vaccine platforms simultaneously stabilize ideas of what disease *is* and normative ideals about how it *ought* to be managed. They embed assumptions about what it means to be prepared for a pandemic, the distribution of that responsibility, and the authority to define how people should perceive disease threats in the first place. Global public health leaders imagine vaccine platforms to be capable of addressing any pathology, for any person, anywhere. Nonetheless, vaccine platforms falter when their makers' underlying assumptions do not align with differently situated and often tacit ideas about injustice and progress.

Portrait of Disease X



↑ An overgrown sign at the University of Oxford from a viral vector vaccine trial.

The phrase “platform technology” often conjures images of social media or Silicon Valley. Like their digital counterparts, biotechnologies increasingly represent the complexities of life through code. Both are predicated on modularity; vaccine platforms target a new pathogen by swapping out one genetic sequence for another while retaining the same biochemical skeleton. These two types of platforms also take shape in relation to users who play a part in making them. For people’s immune systems to learn how to recognize a viral infection, their own cells must produce portions of the pathogen’s proteins from the genetic information encoded in a vaccine, unlike traditional vaccines that deliver pre-formed fragments of weakened or inactivated viruses.

Delivering the “flexibility and speed” applauded by the Nobel Committee also depends on new forms of epidemiological research, especially high-resolution genetic sequencing, that entail new modes of classification. R&D for vaccine platforms often groups viruses into families. These categories capture statistical relationships between genetic sequences, defining variants of viruses to track how pathogens mutate when they spread and collapsing thousands of distinct viruses into a mere twenty-five clusters.

The World Health Organization is one in an emerging group of global health institutions that champion this taxonomic approach to vaccine development. In the broadest move yet to simplify epidemic risk, these

2 Alanna Shaikh and Paul Nuki, “Beware ‘Disease X’: The Mystery Killer Keeping Scientists Awake at Night,” *Telegraph*, March 10, 2018.

institutions have advanced the concept of a “Disease X” to represent the universe of unknown pathogens that may someday cause an outbreak.² Imagining disease in this way, public health actors aim to prevent a potential pandemic by rapidly sequencing a pathogen sample, situating a virus within a constellation of known families, and loading a sequence into a preconfigured vaccine platform.

In Search of Lost Time

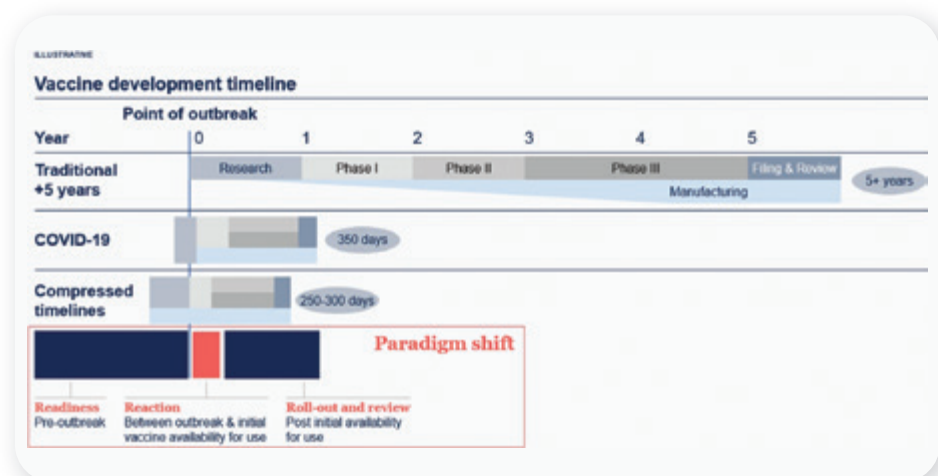
These framings of uncertainty in vaccine science gained traction following a historic Ebola epidemic in West Africa from 2013 to 2016. Responses to the epidemic provoked widespread criticism—primarily, that the World Health Organization had moved too slowly, and that market failures had delayed vaccine development that could have proceeded further prior to the crisis. With aspirations to respond more rapidly to future outbreaks, public health leaders breathed institutional life into the Disease X paradigm and founded the Coalition for Epidemic Preparedness Innovations (CEPI) in 2017.

With offices in Norway, England, and the United States, CEPI funds efforts to accelerate vaccine research, development, and distribution worldwide. CEPI links preparedness to rapid technological development: the faster vaccines can be developed and deployed, it argues, the more effectively the world can respond to emerging threats. The record-breaking speed of COVID-19 vaccine production thus represented a major victory for CEPI, but it has also underscored the institution’s conviction that the world needs to move faster. In 2022, this diagnosis gave rise to CEPI’s 100 Days Mission, with the goal of vaccines being ready for authorization and scalable manufacture within 100 days of identifying a pathogen with “pandemic potential.” The modularity of virus families and vaccine platforms—especially mRNA—is a central pillar of this initiative.

The 100 Days Mission strives to accelerate vaccine development by framing *responses* to any outbreak as a form of preparedness.³ Seen through CEPI’s emphasis on speed, the uncertainty of a Disease X creates opportunities to expand knowledge about viral diversity and optimize

3 Aishani Aatresh, Nicole Lurie, and Richard Hatchett, “Accelerating Vaccine Development: The 100 Days Mission,” in *Principles and Practice of Emergency Research Response*, ed. Robert A. Sorenson (Springer, 2024).

→ CEPI’s 100 Days Mission.



vaccine platforms for new targets, whenever and wherever the opportunity arises. Epidemic preparedness, in this framework, emphasizes the capacity of institutions to collect and leverage information about *any* infectious disease event, rather than predict and mitigate one specific disease at a time.

This mode of rapid containment and the accompanying representations of disease that CEPI advances are inextricable from a faith in market mechanisms as the right way to understand and redress inequity. With platform modularity, CEPI aims to eliminate global distribution problems—to address differences and challenges across space through changes in time. It attempts to guarantee access for anyone who needs a vaccine in the event of an emerging pandemic by deploying vaccines and containing the disease before demand outstrips supply. Doing so, in CEPI's view, requires increasing and incentivizing any efforts to develop vaccine candidates—in part through the Disease X-oriented consolidation of epidemic threats.

The World as Laboratory

CEPI is not alone in seeing promise in vaccine platforms. Governments, corporations, and research institutions, increasingly on the African continent, view platform modularity as a means to address pathogens long “neglected” by the Global North, and to control the direction of vaccine research. The wish for greater choice has driven a wave of investment in designing mRNA vaccines locally, building biomanufacturing facilities, and training biotechnology workers.

Moderna, BioNTech, and Oxford have also expanded the use of their respective vaccine platforms in tandem with such initiatives, but attempts to create markets that drive rapid technology development have proven far from seamless. According to one official from the Africa Centres for Disease Control and Prevention, Moderna simply “changed their mind” about plans to build an mRNA manufacturing facility in Kenya. Moderna, for its part, described the decision as a “pause” while the company “determines future demand.”⁴ Meanwhile, the century-old Institut Pasteur de Dakar in Senegal negotiated a deal with BioNTech to license the German company's mRNA platform and produce vaccines for pathogens in Africa, only for the deal to fall apart over disagreements about who would own the resulting vaccines.

These frictions suggest that representing the world's peoples primarily as vaccine producers or vaccine consumers elides crucial questions about power and politics, as well as the concerns people have about their own lives. Vaccine platform R&D both bridges and leverages the differences between pathogens, people, and places in order to accelerate science, while demanding that these disparate parts abide by a single framework to understand and manage disease—one “time zone” for all. However, speed can obscure other ways to evaluate the virtues of a vaccine, and societies may “keep time” in different ways.

CEPI's platform of choice is mRNA because it seemingly promises market “success” through the shortest formulation and manufacturing times, compared to other vaccine development approaches. Yet mRNA requires ultra-cold storage capacity that remains scarce in many parts

4 Moderna, “Statement on Kenya Manufacturing Facility,” April 11, 2024.

of the world that CEPI aims to reach. The rapid rollout of COVID-19 mRNA vaccines also assumed a negative valence against other long-standing delays in global health. As one leader of a civil society organization in Senegal told me, low- and middle-income countries “have too many emergencies to solve ... Everything is an emergency in a low-income country.” A Senegalese scientist echoed these concerns: “When you’re waiting here for ten to fifteen years”—for efforts to address social problems that preceded COVID-19—“then there’s some guy over there in Europe with this—you want to vaccinate me with that? Am I a guinea pig?”

Reflecting on these dynamics, one member of the Developing Countries Vaccine Manufacturers Network (a CEPI partner) offered me another take on the limits of speed:

There is a big hype on mRNA. People are just building up the stories that mRNA will become a success story and, you know, transform the whole thing. What happened in COVID? It took six shots of mRNA vaccine to bring results, and that immunity was waning so quickly, disappearing within a few days. So I think we cannot just put all eggs in one basket and say that mRNA is the messiah for everything.

What matters is not the specific number of shots or the duration of immunity, but the fact that such concerns exist. The modularity of mRNA and other vaccine platforms is meant to universalize the problems of emerging infectious diseases and the potential to address them. Yet insofar as the entitlements that people count on and the powers they believe in remain contested,

the research and understandings of risk and obligation that platforms advance—however rapidly—do not amount to a shared sense of reality.

Put differently, vaccine platforms represent and address a gap that is at once cognitive, material, moral, and political. Strife around vaccine platforms involves disagreements about the nature of this preparedness gap, and the responsibility to mind it. For these platforms to work, not only their developers but also those at the receiving end must deem a given gap worth minding in the first place. Where platforms encounter obstacles, the path forward may require a step back—to reconsider how the gap should be defined, not only how it should be closed. As a London Underground announcement reminds passengers, architects of preparedness might “stand back from the platform edge.” *



↑ Institut Pasteur de Dakar, Senegal’s main vaccine producer.

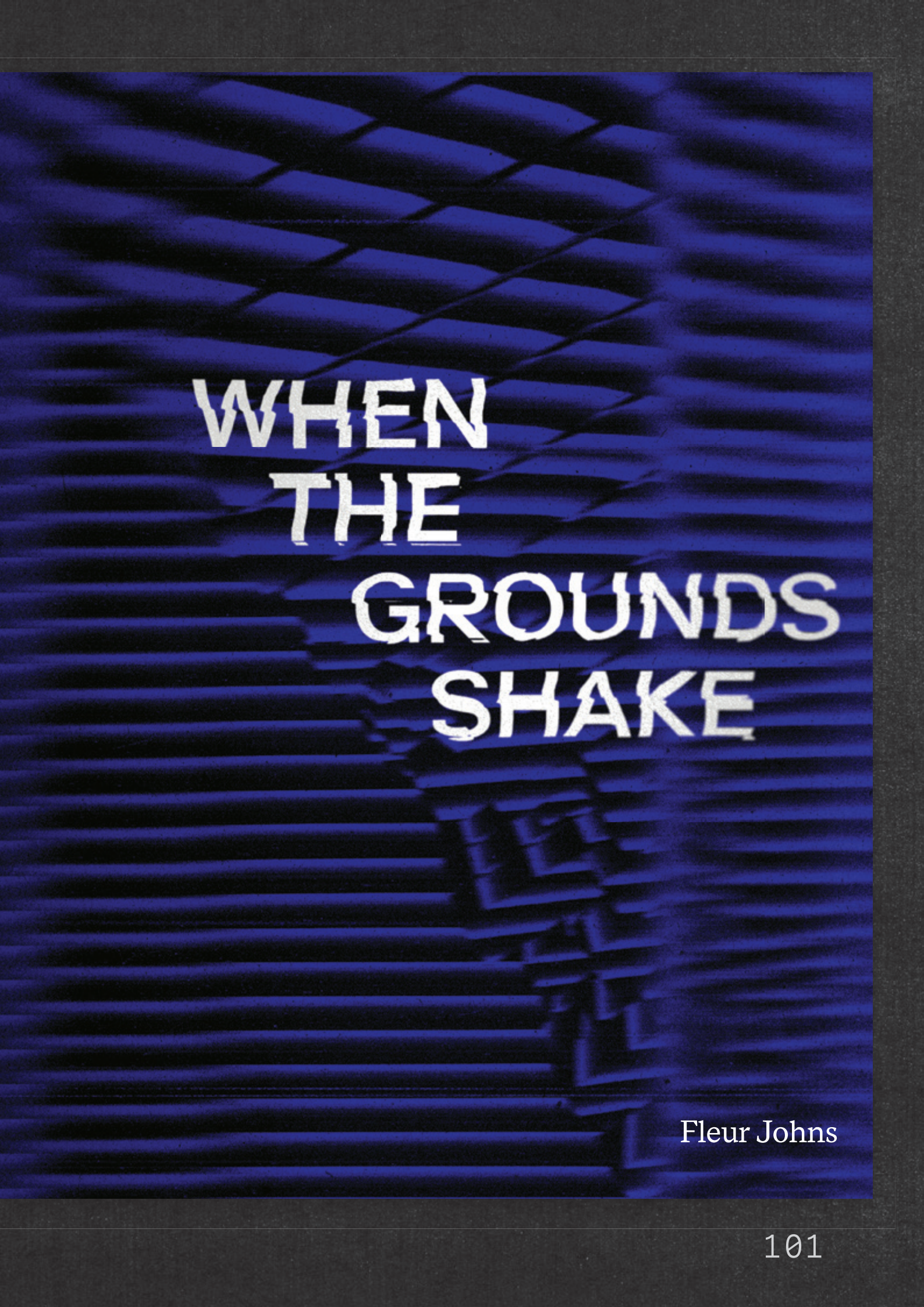
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The promises and parasites of tsunami prediction

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WHEN THE GROUNDS SHAKE

Fleur Johns



← Fishing boats beside the shoreline in Palu, Indonesia near a displaced mosque.

1 Sven Harig et al., “The Tsunami Scenario Database of the Indonesia Tsunami Early Warning System (InaTEWS): Evolution of the Coverage and the Involved Modeling Approaches,” *Pure and Applied Geophysics* 177, no. 3 (2020): 1379–1401; BMKG, “Indonesia Tsunami Early Warning System,” accessed January 23, 2026.

2 Jonatan A. Lassa, “Reviewing Indonesia’s Tsunami Early Warning Strategy: Reflections from Sulawesi island,” *The Conversation*, October 3, 2018; Shotaro Tani and Erwida Maulia, “Indonesia’s Tsunami Warning Blamed as Death Toll Reaches 1,200,” *Nikkei Asia*, October 2, 2018.

IN SEPTEMBER 2018, a magnitude 7.5 earthquake shook Sulawesi, an Indonesian island that is home to nearly 17.5 million people whose livelihoods mostly depend on agriculture and fishing. Tsunamis followed; large waves struck central Sulawesi, at Palu and Donggala. More than 1,300 people were killed and nearly 60,000 were displaced. In the aftermath, reports circulated in the press and online about the failure of Indonesia’s early tsunami warning platform, InaTEWS, and about the practices of misuse, neglect, and disassembly that may have contributed to it not operating as intended.

Recalling the etymological link between “platform” and “ground plan”—as in a political position or party platform—one might say that the grounds of InaTEWS were literally and figuratively shaken. Alongside the geomorphic fissures it exposed, the Sulawesi earthquake also cracked open questions about the foundations upon which InaTEWS and comparable platforms are built. What plans do such platforms advance? On what grounds are they constructed? What valuations are embedded within? Who or what are they designed to secure—and when and how are those grounds shaken or remade?

InaTEWS was developed and installed by the Indonesian government, with German, Malaysian, and US support, after the 2004 Indian Ocean earthquake and tsunami. It is a multi-sided information exchange platform that is interoperable with a range of software and hardware. InaTEWS assembles digital data from a seismographic sensor array and GPS network on land, a system of tide gauges and buoys at sea, and CCTV coastal surveillance. Using satellite-based communication, this data is processed through German-designed seismological software to feed a decision-support system known, apparently without irony, as TOAST (Tsunami Observation And Simulation Terminal). Incoming real-time data interacts via TOAST with a database of historic scenarios to generate warnings.¹

In the aftermath of the 2018 earthquake, it was revealed that the Indonesian meteorology, climatology, and geophysics agency BMKG (*Badan Meteorologi, Klimatologi, dan Geofisika*) had relied on InaTEWS to issue a tsunami warning predicting relatively small waves shortly after the initial earthquake. Few people received the resulting text message alerts, however, because telephone and electrical infrastructure had already been damaged (and many of those who did receive a warning were unsure how to respond). Around thirty minutes later, BMKG lifted the warning, relying on data from the nearest operating tidal gauge, hundreds of kilometers away, which detected only a minor swell.²

As it turned out, none, or very few, of the twenty-two nearby buoys tethered to the ocean floor and designed to transmit wave height data were operational. Media reports suggested they had not been maintained,



3 Anjali Singhvi et al., “What Went Wrong With Indonesia’s Tsunami Early Warning System,” *New York Times*, October 2, 2018; “‘None of the 22 Buoys Are Functioning’: Tsunami Warning System Might Have Saved Lives in Indonesia,” *National Post* (Indonesia), October 1, 2018.

4 Lassa, “Reviewing”.

5 Tasha Wibawa and Farid M. Ibrahim, “Tsunami Early Detection Buoys Haven’t Worked for Six Years: Disaster Agency,” *ABC News* (Australia), October 1, 2018.

6 Doug Bock Clark, “Why the Tsunami in Indonesia Struck Without Warning,” *New Yorker*, October 4, 2018.



↑ National Oceanic and Atmospheric Administration (NOAA) Tsunami Warning Buoy being secured for maintenance.

← “Smart buoy” AI image developed by UC-Davis’s Tahoe Environmental Research Center depicting a ‘smart buoy’ Image created with Blender AI.

7 Michel Serres, *The Parasite*, trans. Lawrence R. Schehr (Johns Hopkins Press, 1982).

8 Agence France-Presse, “Indonesians Loot Markets After Tsunami Creates Shortage Of Food, Water,” *NDTV World*, September 30, 2018.

9 Serres, *The Parasite*, 35, 75, 80, 168.

or had been damaged by fishers tying their boats to them, or had been stripped by “vandals” and “thieves”—as reporters dubbed those who stole the costly sensors or hauled away entire units to sell for scrap. Prevailing accounts cast InaTEWS as having been rendered useless by this combination of factors. As one commentator remarked, “Not everyone is convinced a tsunami detection system is essential.”³

At the same time, the Indonesian government was criticized on the grounds that they “never allocated enough money” for maintenance; the system was said to be “broken” thanks to a “bureaucratic mess.”⁴ Failure was thus attributed to familiar human and governmental shortcomings. Meanwhile, the platform itself seemed to be insulated from blame. InaTEWS was lauded as a “well-designed sensor network that could provide critical information.”⁵ To some, the obvious next step was further automation and safeguarding—placing additional sensors on the sea floor, at greater remove from fallible humans and neglectful institutions.⁶

Michel Serres’s account of parasitism in social relations offers a different perspective.⁷ In *The Parasite*, Serres elevates the parasite from a marginal nuisance to the generative condition of order itself. Serres argues that systems only function through asymmetry and interference—that is, through an irreducible presence that feeds, disrupts, and transforms. What appears as corruption or disorder is thus revealed as the very motor of change.

The fishers who tied their boats to InaTEWS’s smart buoys and the people who stole hardware to sell for scrap *were* making use of the InaTEWS platform—though not in ways consistent with its design. Their use was parasitic. Like those who looted markets in Palu after the tsunami, they prioritized their own survival over the platform’s promised communal benefits.

Sulawesi was affected at the time by food shortages attributed to drought, as well as economic volatility. Anticipating shortages and distribution problems, wholesalers and intermediaries within Indonesia’s food supply chains engaged in anticipatory stockpiling and sudden selling, generating food price surges that trav-

elled quickly across the archipelago. As some Palu looters told reporters at the time, “There has been no aid, we need to eat.”⁸

By signaling dependence on others for sustenance, feasting on the system without restraint, and disregarding the state’s investment in securitizing the future, the actors responsible for the damage to the InaTEWS equipment departed from the logic of exchange relations that is premised on forgoing something now in expectation of later return. In Serres’s terms, they did not reject the platform’s logic so much as “cross” it, making the platform into a “diagonal” by enlisting it in a noncompliant form of exchange. “Expelled” as cheats, they nevertheless “invent[ed] something new.” By misconstruing the platform’s value—deliberately or otherwise—they generated what Serres calls “abuse value,” expressing a different configuration of relations, if only for a brief and noisy time. Rather than drawing life from the platform, they injected their own life into it.⁹

InaTEWS was meant to enroll Indonesians in an internationally sponsored project of futurity in which all would have a role. The *Tsunami Early Warning Service Guidebook for InaTEWS*, a 2012 public handbook, emphasized that community members, and not just various government agencies, “are responsible for making the necessary preparations to save themselves from earthquake and tsunami risks” and “for passing on accurate information and guidance to others.” The handbook went on to say that “continuous cooperation of all stakeholders” was needed to ensure the platform’s “future development and maintenance” and to move Indonesia toward a future of “better preparedness.” Preparedness, above all, meant sustained engagement with the InaTEWS platform.¹⁰

Indonesian coast-dwellers were expected to make themselves valuable to the platform by dedicating their labor to its “future development and maintenance.” Meanwhile, some had other uses for InaTEWS—or at least for its smart buoys, as described above. Ironically, this parasitic usage exemplifies the continuous engagement that many platforms seek to inculcate in their users. However, these actors’ use was of the platform rather than for it; they intercepted the relations on which the platform was predicated, without making themselves useful to it. Consequently, they were devalued and labeled criminals or vandals. Indonesian officials did not regard “ordinary people where the buoys [were] installed as stakeholders”; their actions were not seen as “serious feedback to the system.”¹¹ The abuse of the platform was lamented as “a heartbreak” and “a tragedy for science.”¹²

For the “vandals” of the InaTEWS buoys, this “tragedy” was productive. It exposed the trade-offs that had been made without their input: investment to secure flows of “accurate information” that might save lives had been set against the immediate “need to eat.” Rather than performing the data-generative, value-generative modes of engagement that the InaTEWS interfaces encouraged, they repurposed the platform to other ends—which may have cost 1,300 lives. Heroes they were not. Yet in acting as they did, they threw open difficult questions: Who or what are “life-saving” platforms such as InaTEWS for? What kinds of lives do they aim to save? What kinds of relations do they make and unmake? And how can these questions be posed to a platform so well-intentioned and so firmly grounded in scientific consensus?

As the story of InaTEWS demonstrates, digital platforms are typically built to secure themselves—physically and normatively. In this sense, perhaps, they are also parasitic, because they persist only insofar as their hosts remain engaged. For data-hungry platforms like InaTEWS, those hosts include sensors, buoys, gauges, and all those stakeholders and communities drafted into “continuous cooperation.” Platforms reproduce within these hosts, optimizing until “the inevitable point when the host dies.”¹³ They are also predicated on the differential valuation of various users and modes of engagement. These tactics prove highly resilient, reinforced by manuals and guidelines that normalize them. Even so, parasitic interruption can shake the foundations of a platform, burrowing beneath it to lay bare who or what it values—and who or what is expendable within the world that it helps to shape. *

10 Jaya Murjaya et al., *Tsunami Early Warning Service Guidebook for InaTEWS*, 2nd ed. (2012), v, 22.

11 Jonatan Lassa, “When Heaven (Hardly) Meets the Earth: Towards Convergency in Tsunami Early Warning Systems,” *Indonesian Students’ Scientific Meeting Conference Proceedings*, May 1, 2008, 216.

12 Wright, ““None of the 22 Buoys.””

13 Serres, *The Parasite*, 168.

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Decommissioning an oil
platform can be as hard
as building one

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SUS PEN DED

Ava Rawson

END INGS

The Cromarty Firth in northern Scotland, with its sheltered location and deep waters, has become a site for decommissioning retired North Sea oil and gas platforms.





The little that is left of Brent Charlie.
Workers in high-visibility uniforms at
the base of one of the legs highlight the
platform's immense scale.





The demolished remains of Brent Charlie.





THE DEATH of an offshore oil and gas platform may mark the end of several decades of fossil fuel production, but the consequences of extractivism endure. Extending into geological timescales, these platforms' afterlives outlast the corporate entities that once wrought value from them. Obscure in their productive life, nestled in the ambiguous and inaccessible "off-shore," the reterritorialization of these monolithic platforms embodies an immense scale of labor, capital, and waste. Offshore, platforms devolve through decommissioning, plugging, and abandonment procedures. Once on shore, the platforms slowly shrink as they are painstakingly deconstructed into growing piles of rubble.

Hydrocarbon extraction first began in the North Sea in 1967. Extractive output peaked in 1985 at 2.63 million barrels of oil per day. By now, the region has been "drilled to death," as a longtime industry interlocutor described it to me. The oil and gas industry has transformed the oceanic subsurface of the United Kingdom's continental shelf into an infrastructurally dense industrial zone, leaving behind 12,000 nonproducing legacy wells, over 1,500 platforms, 45,000 kilometers of pipelines, and nearly 900 inactive wells that have yet to be decommissioned.¹ The cost of decommissioning these installations is estimated at £44 billion.²

The 1998 Oslo Paris Convention (OSPAR) Decision 98/3 first mandated the decommissioning of disused offshore oil and gas installations. As a signatory party of the convention, the UK government adopted the 1998 Petroleum Act; this consolidated a discordant regulatory landscape by reforming model contract clauses and, crucially, establishing a national-level legal mandate for the permanent plugging and removal of disused offshore oil and gas infrastructure. However, before these policies were implemented, many North Sea platforms had been built without consideration for how they would eventually be dismantled.

Despite the inevitability of ruination made clear by the boom-and-bust cycles of capitalism and the obviously finite nature of subsurface fossil fuel reserves, before Decision 98/3, industry pioneers built extractive infrastructure based on an ideal of infinitely productive potential. Decommissioning these installations has presented immense challenges. Older structures can contain obsolete technology or other site-specific features, which require significant capital and time to dismantle. Additionally, their scale and weight results in enormous quantities of waste; conceived under the conceptual banner of a limitless carbon modernity, these structures were built for permanence. The record for the heaviest structure ever moved is held by the Gullfaks C platform, which commenced commercial extraction in the Norwegian North Sea in 1986. Weighing between 1.4 and 1.5 million metric tons, the platform has yet to be decommissioned.³

1 Benjamin Pullen, Aaron Cahill, and Daniel Arnold, "Differentiating Legacy Wellbores in the Scottish North Sea Using Multi-Criteria Decision Analysis with a View to Minimising Containment Risk for Carbon Capture and Storage," *International Journal of Greenhouse Gas Control* 1, no. 42 (2025): 104336; Victoria Masterson, "What to Do with Ageing Oil and Gas Platforms—and Why It Matters," World Economic Forum, April 2, 2024; Rebecca von Hellfeld and Astley Hastings, "An Approach to Assessing Subsea Pipeline-Associated Mercury Release into the North Sea and Its Potential Environmental and Human Health Impact," *Royal Society Open Science* 11, no. 3 (2024): 230943; Bee Smith, "Offshore Petroleum Licensees Must Decommission Wells in a Timely and Cost-Efficient Way, in Accordance with Their Licence and Other Statutory Obligations," North Sea Transition Authority UKCS Suspended Well Stock, November 8, 2024.

2 North Sea Transition Authority, "UKCS Decommissioning: Cost and Performance Update 2025," accessed March 18, 2026.

3 Guinness World Records, "Heaviest Man-Made Object Moved," accessed March 29, 2026.

Similar challenges plagued the Brent oil and gas field, which began extraction in 1976. Each of Brent's four platforms was roughly equivalent to the Eiffel Tower in height. Brent Charlie, the last, largest, and heaviest of the four platforms, was brought onshore for decommissioning in 2024. Its topside was, to use Shell's language, "brought home" by the *Pioneering Spirit*, the largest construction vessel in existence. Even this enormous vessel needed to be widened to accommodate the platform's size.

Decommissioning offshore oil and gas infrastructure in the North Sea, one of the harshest marine environments on Earth, demands nearly as much technological innovation and capital as it took to enable extraction at the bottom of the ocean in the first place.

Platform Liabilities

Prior to the late 1990s, decommissioning was not a priority for the industry. The idea that oil would run out was conceptually reduced to merely a "blip in the production curve," as one of my interlocutors noted. It wasn't until after the ratification of the 1998 Petroleum Act that the industry realized they were "on the hook" for decommissioning costs.

However, due to the complex ownership histories typical of offshore oil and gas infrastructure in the region, mandatory decommissioning can be difficult to enforce. Throughout the productive life of a given installation, there are often several owners, depending on the scale of the reserves and the extractive capacity of the site. In general, larger operators possess the capital and technological capacity to extract from larger reserves. When confronted with the natural decline in profitability of a traditional bell-shaped production curve, companies will abandon sites to pursue opportunities elsewhere, often selling to smaller operators. Scavenging for second, third, and fourth-time hand-me-downs from large operators, companies specializing in "late life well management," like vultures, seek to extract value from a downward production curve.

And yet, it is the final owner who assumes the financial liability to decommission. Unable to generate capital from dwindling reserves, the pattern of serial ownership can result in the cost of decommissioning outweighing an operator's total value. When an operator thus becomes insolvent, bankruptcy severs ownership, as well as the obligation to fund decommissioning, effectively orphaning the site.⁴ This leaves platforms financially stranded and with no clear pathway for decommissioning aside from the government taking on the liability, at the taxpayers' expense.

Through the sale of mature platforms that loom over depleted reserves, the platforms' original operators disentangle themselves from the legal requirement to decommission, and from the costs associated with the inevitability of the platforms' eventual deconstruction. Yet, this evasion of liability for aging infrastructure is also evident beyond obstruction through sales. Conceptually, decommissioning is obscured through euphemisms like "late life well management" and "well integrity management," which invoke productivity, vitality, and life, rather than more relevant descriptors like decline, depletion, and death.

4 Caura Wood, "Orphaned Wells, Oil Assets, and Debt: The Competing Ethics of Value Creation and Care Within Petro-Capitalist Projects of Return," in "Energy and Ethics", ed. Mette High and Jessica Smith, special issue, *Journal of the Royal Anthropological Institute* 25, no. 1 (2019): 67–90.

Delaying death-by-decommissioning can be accomplished through expensive technological interventions—known as enhanced oil recovery—such as injecting CO₂ or chemical polymers, or flooding wellbores with low salinity water to artificially induce pressure and revitalize extractive capacity. While such strategies have been a strategic focus in the North Sea for over a decade, they are inaccessible to stakeholders faced with declining profitability. Eventually, these operators either run their installations at a loss, or they cease production to leave sites in “suspension,” staving off the high costs of decommissioning, while buying time in the hope that technology to revive the sites becomes more affordable.

While the North Sea Transition Authority (NSTA) allows for up to two years of suspension, there has been a dramatic rise in the number of installations exceeding this guideline. In 2025, nearly 900 wells were in violation of the two-year suspension limit, accounting for almost half of all wells scheduled to be decommissioned before 2030. This statistic reveals the material consequences of the tension between the legal requirement to decommission and the high costs associated with doing so. The resulting administrative limbo fails to address the immediate reality of platforms that are no longer productive, namely, the potential hazards of unplugged or improperly plugged wells to the surrounding marine ecosystems, and the increased carbon dioxide and methane emissions resulting from such sites.

This neglect is also having serious repercussions on the efficacy of long-term decommissioning plans in the region. While the North Sea is a comparatively mature productive sector, the decommissioning supply chain is still nascent. This means that while decommissioning service companies are emerging—along with the requisite supply vessels, personnel, and cranes large enough to handle the scale of offshore oil and gas infrastructure—the industry is not yet firmly established. And, with so many operators reneging on their decommissioning deadlines, the NSTA recently warned licensees that the supply chain is reacting to this inactivity by leaving the North Sea.⁵ Plugging and abandonment contracts have not been issued on the scale that contractors had anticipated, prompting decommissioning companies to seek more secure opportunities elsewhere. If deferrals continue, this reduced capacity could raise decommissioning costs in the region by another £4 billion.⁶

The abrogation of liability evident within the layered iterations of ownership, as well as the negligence of the tail-end operators in meeting decommissioning deadlines, both demonstrate a pervasive devotion to cost avoidance. Yet ultimately, such attitudes may significantly raise the overall cost of decommissioning oil and gas infrastructure in the North Sea. Despite international law’s straightforward notion that the polluter pays, there is a lack of legislative precision regarding how exactly the full complement of a platform’s operator history may be held accountable for environmental damage, and to what extent this responsibility can be enforced.

When we consider energy futures, we must also reckon with the costs intrinsic to ending fossil fuel modernity. In doing so, we encounter not only the dizzying scale of technical complexity and waste produced in the removal of offshore oil and gas platforms, but also the convoluted socio-legal landscape that is made visible through their demise. *

5 North Sea Transition Authority, “Cost Estimate”, 2025.

6 North Sea Transition Authority, “NSTA Warns: Decommission Permanently Inactive Wells Now or Face Cost Hikes and Possible Fines,” July 10, 2025.

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We have heard about the
emperor's clothes,
but what about the
sovereign's appetite?

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Kriti Kapila

THE HUNGRY SOVEREIGN

THE PAPER TRAILS and traps of India's bureaucracy are legendary. The Indian state is not so much an iron cage as a vast, papyraceous web of documents—certifying a recipient of welfare, a legible citizen, or a legitimate voter, tracing the many stages of official decision-making and every layer of approval, logging every transaction, and registering the rightful owner of every parcel of land.¹

In the late 1980s, early forays of the state into new computing and telecommunication technologies saw the conversion of physical files into their digital counterparts. Thus, “e-governance” in India was born, wherein existing bureaucratic techniques, forms, and practices were reconfigured as siloed virtual services. Land records were the first to be digitized, followed by bank transactions, utility bill payments, vehicle registrations, passports, driving licenses, and tax returns. The techno-optimism of e-governance was accompanied by a heady mix of discourses on efficiency and transparency that stoked the neoliberal fire blazing at the turn of the century.

Since then, an uncontained appetite for data has transformed India's bureaucratic state, first into a digital state, and then more recently into what I call a “platform state”—and with that change has come an insatiable drive to devour long-standing settlements between the state, citizenry, and capital, and ultimately the body politic.²

1 For instance, Akhil Gupta, *Red Tape: Bureaucracy, Structural Violence, and Poverty in India* (Duke University Press, 2012); Tarangini Sriraman, *In Pursuit of Proof: A History of Identification Documents in India* (Oxford University Press, 2018).

2 Kriti Kapila, “The Platform State: India After Aadhaar” (forthcoming).



← “File Room” by Dayanita Singh.

3 Kriti Kapila, *Nullius: The Anthropology of Ownership, Sovereignty, and the Law in India* (HAU Books, 2022); Ranjit Singh, "Give Me a Database and I Will Raise the Nation-State," *South Asia: Journal of South Asian Studies* 42, no. 3 (2019): 501–518.

The presumed affordances of speed and incorruptibility awakened the state's appetite to digitize ever more points of contact between itself and its citizens. Buoyed by the prevailing techno-optimism as well as a nascent techno-nationalism, in 2009 the state rolled out a biometrics-based identification system called Aadhaar. Initially restricted to welfare recipients, its ostensibly non-duplicable biometric data was seen as a technological fix for the corruption and leakages that had long plagued India's public distribution system. By 2014, however, Aadhaar had become a de facto requirement for all citizens and residents. Far exceeding its original size, purpose, and remit, it had morphed into the largest identification infrastructure the world had ever seen.³

Aadhaar flattened the multiaxial diversity of the Indian citizenry (language, region, culture, and so on) into universally capturable biometrics (name, gender, address, date of birth, iris scan, fingerprints, facial scan), and generated a database of unique twelve-digit numbers. The successful encompassment of over one billion people into Aadhaar was not an end point however, but a crucial milestone that only intensified the state's drive to use biometric identification in new spheres. In a radical first, in 2014 the Indian state allowed the use of Aadhaar, in the form of a new hybrid technology, eKYC (Electronic Know Your Customer), for accessing not just government services and welfare, but also private services.

A remote, real-time digital identification process, eKYC began the transmutation of Aadhaar from a state identification platform into an authentication technology for commercial transactions—a pivotal change that upended the prevailing settlements between the state and citizens of India as the state identification framework began to be used in the service of private profit.

This potential for interoperability across domains acted as a catalyst for the creation of the governance behemoth India Stack, the backbone architecture of India's new Digital Public Infrastructure. The Stack is imagined as a total governance ecosystem aimed not just at digitizing, but at *digitalizing* the state-citizen relationship. Digital governance under India Stack is composed of discrete yet compatible platforms: Aadhaar (the identification layer), Unified Payments Interface (the digital payments layer), DigiLocker (the digital dossier for state documents), and Sahmati (the consent layer). Each layer uses Aadhaar as its base and is interoperable with other layers in the Stack. This architecture enables seamless cross-platform integration and communication: a lender can access an applicant's banking history, retrieve their relevant documentation, secure consent for access to their data, and verify their identity—all in one swoop. And new layers and ancillary technologies continue to develop apace. Notably, while e-governance technologies like Aadhaar may have been developed with the help of private enterprise, they are wholly owned by the state. On the other hand, each layer within India Stack, apart from Aadhaar, is owned by private capital.





← Baby's first Aadhaar.

← Cashless Gods.

Aadhaar whetted the state's appetite for data as a new comestible, and this appetite came accompanied by a rhetoric of data sovereignty. India Stack is positioned as the edifice for generating sovereign data—based in the citizenry, but controlled by the state, and used for far more than mere statecraft. Aadhaar reduces every citizen to a set of data points, enabled by the state and open for exploitation by private providers and state alike. This data circulates through banks, fintech firms, lenders, and insurers, generating profit while gaining access to ever more granular aspects of everyday life, and deepening the state's capacity for surveillance and control. The proliferation of data allows both state agencies and private actors to act upon populations in real time—restricting access, erasing rights, approving credit, flagging risk, suspending benefits, or triggering investigation. Administrative and political erasure—through database exclusion, deletion, or procedural invisibility—is becoming a reality, as illustrated by recent controversies around the Special Intensive Revisions of electoral rolls, and citizenship adjudication under the National Register of Citizens and the Citizenship Amendment Act of 2019.

As hunting grounds expand to feed the data-hungry sovereign, more governmental technologies are being developed—all based in Aadhaar—to swallow hitherto unmetabolized aspects of citizens' lives. These include cashless transactions under the Unified Payments Interface, the aggregation and storage of every citizen's documentation in DigiLocker, and so-called open banking (or more precisely, open lending) coordinated through Sah-mati. And ever more new ancillary technologies rise in the shadow of the Stack, including facial-recognition-based digital passports for humans (DigiYatra) and biometric identity cards for cattle (Pashu Aadhaar).

Appetite morphed the bureaucratic paper state into a digital state, paving the way for the platform state. The digital state converted existing objects and practices—land records, bill payments—into electronic form. The platform state, by contrast, creates new objects and relations in its own image. It does not just register persons and things; it renders citizens as digital assets, and day-to-day existence as a series of infinitely recombinant digital dossiers. The unbounded appetite for data and datafication has altered the nature of the state itself, into a meta-platform *par excellence*; the platform state abandons its paternalist persona, and instead exposes its citizenry to capital's unchecked appetite. The state now exists primarily as force, while sovereignty and profit become ever more blurred.

The Indian state has long transacted across the public-private boundary, from colonial governance through e-governance. What distinguishes the platform state is that commercial capacity is no longer auxiliary to state capacity—it is constitutive of it. Governance now depends structurally on private infrastructures and venture-backed innovation. The state seeks total encompassment not only by digitizing what exists, but by generating new digital subjects, practices, and dependencies—while digitally erasing others. The platform state's aspiration to complete sovereignty is unattainable, yet its pursuit intensifies the appetite. This sovereignty wishes not only to consume what is already there; it produces more to consume, opening its mouth wider and wider.

"Might sovereignty be devouring?" asked Derrida.⁴ For him, sovereignty rested on the distinction between humanity and animality, and on the sovereign's capacity to limit its appetite—to avoid collapsing into the figure of the beast or the cannibal.⁵ In Indic theology, a voracious appetite or an all-consuming impulse triggers cosmic destruction. At the end of an age (*kalpa*), the world is destroyed in a great flood (*pralaya*) that swallows everything on earth. Vishnu, the god of creation, rests on the coils of the Great Serpent, or Shesh Nag, the sole survivor of the pralaya, who also holds the earth aloft. *Shesh* means "remains" or "remainder," and it is Shesh Nag who provides the first substance of life, a part of its own body, with which Vishnu creates the world anew.⁶

The myth illuminates a structural limit. Even the most devouring sovereignty cannot eliminate the remainder. In the platform state, holding multiple Aadhaar cards or continuing to transact in cash may appear as system failures. Yet they also serve as brakes on devourment, keeping sovereignty always in a state of incompleteness. *

4 Jacques Derrida, "Eating Well, or the Calculation of the Subject," in *Points: Interviews 1974–1994* (Stanford University Press, 1995), 7.

5 Jacques Derrida, *The Beast and the Sovereign, Volume I*, trans. Geoffrey Bennington (University of Chicago Press, 2009).

6 Charles Malamoud, *Cooking the World: Ritual and Thought in Ancient India*, trans. David White (Oxford University Press, 1998).

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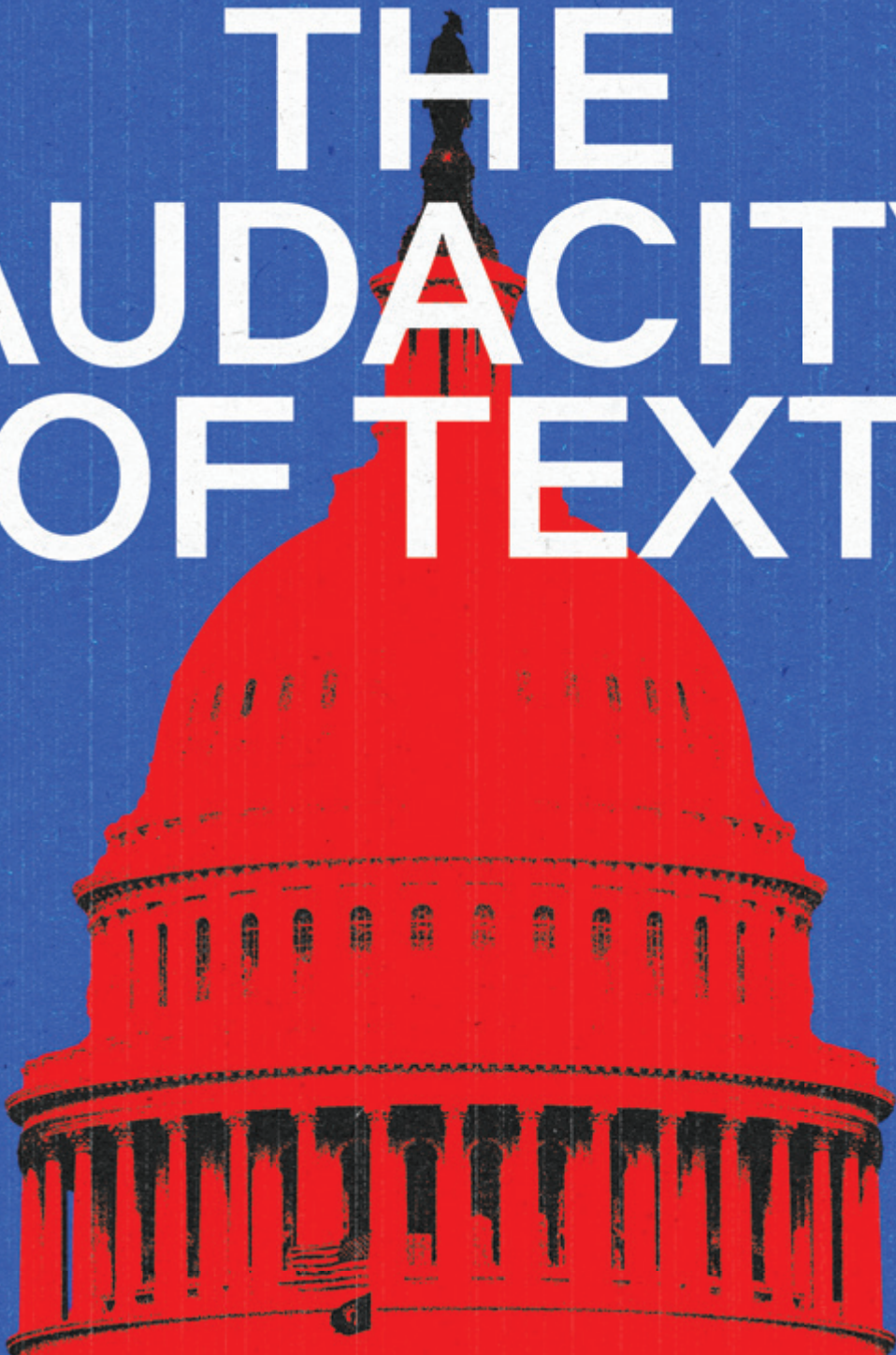
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The digital idioms of democracy

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THIS IS NOT A PLATFORM
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Marc Aidinoff

THE AUDACITY OF TEXT



AMERICANS have long placed their faith in the legal and political Word. The textualist constitutional tradition promised that words could prescribe and enact a social order. Typing away at computer keyboards, some have reiterated that hope with newer media. Perhaps, they have proposed, through the work of code, words can make democratic publics out of dispersed readers. The creation of new reading publics has been the foundational promise of the Intergalactic Computer Network, NSFNET, Bulletin Board Systems, email, the World Wide Web, Web 2.0, the Network Society, and most recently, digital platforms. Critical scholars, in turn, have taught us to read the platforms themselves by decoding their architecture and their codes of conduct, finding traces of hidden labor and dynamic sociality, all in search of new vital politics. But would older forms of politics, the rough-and-tumble of democratic electoralism, remain legible when digitally platformed?

In 1999, political scientists Gerhard Peters and John Woolley believed so. They developed a web platform that aspired to host all of the official words of every American president—speeches, interviews, signing messages, presidential memoranda, executive orders, and press releases. This idea to platform political text was an effort to revive an electoral project, audaciously convening readers around plain text documents in the hope of reinforcing a national democratic public.



← Established in 1999, the American Presidency Project is an online searchable database of presidential words. Home page of the APP website, 2026.

The American Presidency Project (APP) that Peters and Woolley built has become an authoritative source for presidential documents, with, according to their count, as many as 200,000 daily users since 2022. The APP's founders mark its true coming-of-age, however, as the moment when it entered its own archive: in May 2016, after the White House press secretary was asked a question which referenced the APP by name, the transcript of that exchange was duly entered into the database. And although the database contains videos and analysis, plain text is the primary resource. The platform renders tens of thousands of official documents commensurable as HTML markdown text.

Read together, these documents narrate an uncanny political realm of words as deeds. This is an archive of performative politics, in two senses of “performative.” As the philosopher J.L. Austin explained, one can do things with words, *performing* a reality into being. But, as chronically online commentators insist, many words do nothing and are thus, as the kids say pejoratively, “performative.” There are numerous proclamations on the APP platform, almost none ever actually proclaimed. Some changed the world, others did not. In the digital archive, the Emancipation Proclamation is stored alongside National Character Week and American Heart Month pronouncements. Proclamations that function as law are cataloged alongside those that function as symbol.

The APP also comprehensively collects party platforms, the agreed-upon principles of a political party's policy convictions. These resolutions, the result of intense backroom negotiations—and sometimes very public ones—are, in theory, the articulation of what an institutionalized political movement believes. Crafted and voted on every four years at each party's convention to nominate a presidential candidate, they transmute candidates into representatives of larger policy agendas.



← Users can explore the archive or explore analyses of contents. Home page of an early version of the APP website, March 31, 2001. The website is hosted by the University of California, Santa Barbara.

The oldest of these entries in the APP, the 1840 Democratic Party platform, reads today as an anti-platform, devoting its nine resolutions to what the federal government should not do: no interfering in the states, no general system of internal improvements, no national bank, and certainly no efforts to curtail slavery. Still, like every platform that followed, its text can be copied directly into Microsoft Word, which is what Peters did. He counted the words and then graphed them to show the sheer explosion in platform length over the years—and the periodic attempts to rein in these articulations of collective values. There is even an invitation to search across time by keyword to find the trends.

For a digital platform, the APP's participatory asks are minimal, with not much more than a large "report a typo" box on each page, but the sense of a collective and universalizing project is remarkable. The site displays the striking innocence of an earlier digital idiom, in which the commensurability of text on message boards and simple web pages promised a flattened world, and the prospect of equalizing access to written knowledge undergirded many of the hopes for the internet.

There is a similarly innocent optimism to the genre of party platform itself. The dream of a collective governing project, albeit a partisan electoral one, is a noble one. Even though platforms are the sites of so much grubby politicking, they are also proof of a possible accord, of shared and finite prescriptions, bound within language. These words have historically been traded for support. A few sentences could serve as a concession, a mark of respect, or an explicit pander that wins over an interest group or a potentially disruptive faction.

We are more knowing readers now. Party platforms have generally gotten longer, but that wordiness is evidence of a hollowed-out party process that is unable to prioritize.¹ From the voters at the convention to

1 Daniel Schlozman and Sam Rosenfeld, *The Hollow Parties: The Many Pasts and Disordered Present of American Party Politics* (Princeton University Press, 2024).



← Every day, thousands of citizen-users visit the site to understand US politics. Home page of the APP, November 28, 2004.

the non-voters outside its halls—not to mention the researchers plumbing the APP for insights—everyone knows that platforms are aspirational performances, and everyone acknowledges that parties are likely to come up short in practice. We have also lost our naïveté about digital platforms, which have proven to radicalize and exclude. For all its virtues, Wikipedia did not blunt fascism or redeem liberalism.

Ironically, the APP faltered most when confronting the platform most committed to reviving the genre: the 2008 Democratic Party platform, the work of Barack Obama’s campaign. Famously, Obama for America used the framework of social media as a core mechanism for creating its party platform. With my.barackobama.com, often referred to as my.bo, anyone could become part of the campaign. This carefully maintained walled garden sustained a new kind of political community, and cultivated a distinct subjectivity for users—teaching them how to be part of the campaign, to develop the sensibility of local organizers, to generate content for the party platform, and to host local meetings. The ensuing Listening to America initiative included 1,645 meetings with 30,000 attendees in just 25 days of 2008. It mirrored the anti-politics of Obama for America as politics.

Scorning the political machine of the twentieth century, Obama for America worked to offer something new.² In so doing, it presented problems for the American Presidency Project. To capture a democratic authenticity, the 2008 platform document made use of call-out boxes with illustrative quotations from meetings organized through my.bo. These could not be expressed in plain text. Even though the official platform text echoed an older model, the citizen voice broke the flow. In a section on government accountability, one anonymous New Hampshire resident explained, “We the people need to be citizen participants, not consumers of government.” The official language promised to “use new technology

2 Daniel Kreiss, *Taking Our Country Back: The Crafting of Networked Politics from Howard Dean to Barack Obama* (Oxford University Press, 2012); Anna Everett, “Have We Become Postracial Yet?: Race and Media Technologies in the Age of President Obama,” in *Race After the Internet* (Routledge, 2012).



← Shaped by the Obama campaign’s social media use, the 2008 Democratic Party platform used formats that could not be expressed in plain text, presenting problems for the APP. Home page of my.barackobama.com and login popup form, July 31, 2008.

to tap into the vast expertise of the American citizenry, for the benefit of government and our democracy.”

After the election, the Obama administration tried to carry this ethos forward with the crowdsourced Citizen’s Briefing book, in which 44,000 ideas were up-voted by 125,000 users on Change.gov. The administration also maintained a We the People online petitioning platform from 2011 to 2021 with the promise (often delayed or withheld) of “an official response” for the most popular petitions. The National Archives now maintains that website. The remnants of a playful web were there (tongue-in-cheek calls to create a Death Star), alongside the real issues that animated the online community: net neutrality, the Stop Online Piracy Act, and Edward Snowden. Over time, activism and conspiracies that had been incubated on social media platforms migrated to the We the People platform. Calls to investigate Bill and Melinda Gates for crimes against humanity were slowly upvoted ahead of petitions demanding justice for Breonna Taylor.

By 2020, perhaps platforms seemed too dangerous. The Republican Party opted not to go through the work of creating an official platform, while the Democrats produced their longest document to date, with almost twice as many words as in 2008. In 2021, with the techlash in full swing, We the People was quietly deplatformed upon the inauguration of Joe Biden. Platforms were, as the president said and the APP has transcribed, “killing people.”³

As the experiment in merging digital and party platforms is rolled back, we might wonder where else to look for archives of political visions. The temptation is to focus on changing forms and formats. But even as digital platforms continue to mediate our everyday lives, we shouldn’t dismiss content. We should become better readers of partisan politics. The high-stakes work of democratic aspiration is articulated through political documents now stored as deceptively flat text.*

3 After growing frustration with Facebook’s decisions on how to moderate information about COVID-19, President Biden blurted out (and then walked back) this pronouncement. The American Presidency Project, “Pool Reports of July 16, 2021,” accessed April 19, 2026.



← The Obama administration created an online petitioning platform with the promise that popular petitions would receive an official response. Home page of the platform’s website, February 4, 2026.

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When you deposit frozen fish
in someone's safe deposit box

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HOW'S MY FEEDBACK?

Malte Ziewitz

SEARCH FOR ALMOST ANYTHING—books, hotels, teachers, haircuts, dates, doctors, prisons, dishwashers, Italian restaurants, real estate brokers, accountants, sex workers, dentists, board games, or illegal drugs—and there is a platform ready to rate and review it. These feedback systems are widely hailed as engines of transparency and solutions to a range of public problems. They are said to make hidden qualities visible, to hold providers to account, and to broaden participation.

In practice, things rarely work so smoothly.

Platforms such as TripAdvisor, RateMyProfessors, and ReviewCentre have long been plagued by contradictions that undermine their promises. Amazon placed user reviews at the heart of its business model not just because they helped customers, but also because they generated the vast amounts of unique content crucial for search engine rankings. Meanwhile, small businesses, from hotels to cafés, have complained about fake, retaliatory, and misleading reviews posted by disgruntled customers and competitors.

On these platforms, judgment is amplified, circulated, and archived—ironically, with little recourse when something goes wrong. Fake reviews are difficult, often impossible, to challenge. Most complaints are handled by automated systems. And reviews frequently create a lot more work for those affected, who must publicly respond and manage feedback, regardless of its accuracy or intent.

Studying these platforms in the early 2010s, our UK-based research team thought it had a wonderful idea: What if we built a website called *How's My Feedback?* that allowed users to rate and review the rating and review websites? Could we build a platform that would submit these systems to the very logic they had imposed on others?

* * *

Parody, scholars tell us, is a powerful debunking tool. At its simplest, parody places a secondary text alongside the original and repeats it with a twist.¹ (The word derives from the Greek *para* [alongside of] and *ode* [song].) By mimicking something, with slight but telling variations, parody exposes the original's defining features and undermines its authority. This dissonance is what makes a *Saturday Night Live* skit lampooning a US president so effective. Through exaggerated reenactment, we recognize the absurdity and flaws of the original. Or as literary scholar Linda Hutcheon puts it, parody is “repetition with ironic critical distance, marking difference rather than similarity.”²

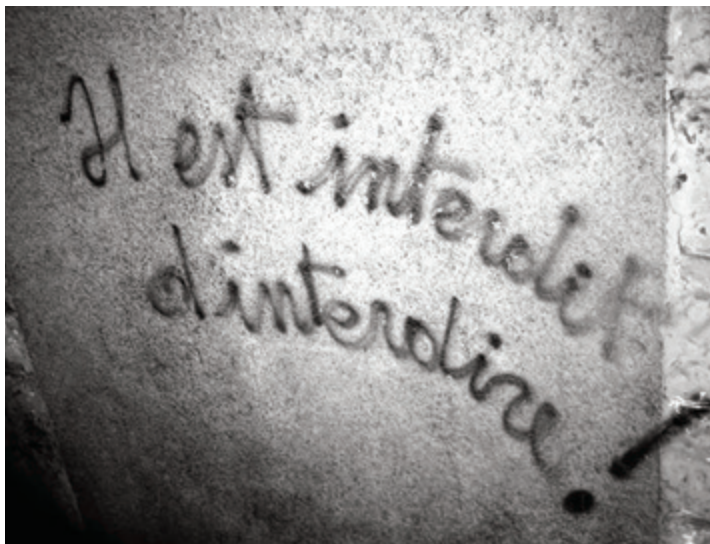
1 Michael Mulkey, *The Word and the World: Explorations in the Form of Sociological Analysis* (Allen & Unwin, 1985), 238.

2 Linda Hutcheon, *A Theory of Parody: The Teachings of Twentieth-Century Art Forms* (1985; Routledge, 1991), xii.

Historically, this strategy of ironic distancing has been the province of artists, activists, and cultural theorists. In 1950s France, for instance, groups like the Letterist International and the Situationist International rerouted and hijacked cultural forms for subversive political pranks under the label *détournement*. Similar tactics surfaced in 1970s punk movements and, again, among 1980s culture jammers such as the Cacophony Society, the Billboard Liberation Front, and Adbusters.

A common technique employed by groups like these was to manipulate a well-known image—subtly distorted corporate logos, or modified official symbols like the American flag. Other interventions had the quality of practical jokes, such as depositing frozen fish in a bank’s safe deposit box, knowing that the bank was legally prohibited from opening it. Another system undone by its own rules.³

3 V. Vale, ed., *Pranks!* (RE/Search, 2010), 60.



↖ Situationist grafitto, Menton, France, 2006, with the 1968 slogan “Il est interdit d’interdire!” (“It is forbidden to forbid!”).

↑ Cover of *Pranks!*, originally published 1987.

← Protester holding Adbuster’s Corporate American Flag at Bush’s 2nd inauguration, Washington DC.

How's My Feedback?

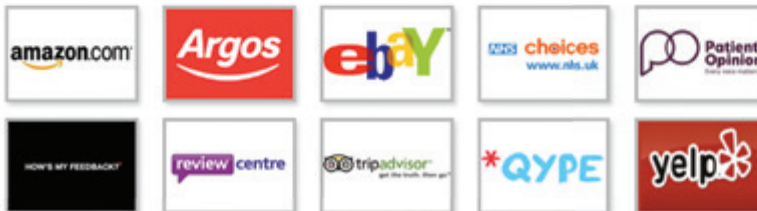
A place for praise, concern, research and advice about review, rating and ranking websites.

- What's good, what's bad about a feedback website?
- How do ratings, stars and metrics affect your life and business?
- Which sites to trust – and which rather to avoid?

Get started

Pick a site and have your say →

Rate the raters



Feedback profiles

Did you know who actually owns TripAdvisor? How do different review sites compare? Browse the index or suggest a new site to be added. →

Latest blog posts

(Can you stress a link for us?)

Twitter

Coll
Des
tran
can
way
help

Tell your story – and join the conversation.

What was good or bad last time you used a feedback site? Are you happy with the way it worked? Did you feel treated fairly? What could be improved? Share your views and help operators, users, regulators and designers understand what's going on.

Fields with a * are required.

Pick a feedback site*

Amazon

Missing one? Please [let us know](#).

A title for your story*

Your story*

What was good, what was bad? Did feel treated fairly? What could be improved? Feel free to use HTML tags.

Rate your experience*

☐ No stars ☐ 1 star ☐ 2 stars ☐ 3 stars ☐ 4 stars ☐ 5 stars

How satisfied were you with the site: not at all (?) or very much so (****)?

Name*

Will be published with your story. Pick a nickname if you prefer to stay anonymous.

Email*

Will never be published.

The *How's My Feedback?* website invited visitors to rate the raters using a simple form.

* * *

When it was time to build *How's My Feedback?*, we sometimes wished we'd opted to leave fish in someone's safe deposit box instead. The project proved to be a serious piece of work. We began by organizing two workshops in London, gathering a group of people who were professionally involved with online review platforms. The group included, among others, community and product managers from well-known review companies, a digital rights activist, one of the top ten amateur reviewers on Amazon.co.uk, academics specializing in technology and privacy, a search marketing consultant, and representatives of a consumer watchdog organization.

The discussions were revealing, though not quite in the way we had anticipated. Instead of being challenged by our colleagues from the industry, the process was surprisingly harmonious. Together with our co-designers, we talked about legal safeguards, audience segmentation, privacy protections, and database architecture. We filled flipcharts with Post-it notes and built wireframes on whiteboards. We found a set of templates we could adapt for our site design and reserved a domain name.

Eventually, we ended up with a website that was strikingly conventional: a review form with a text box, one to five stars for ratings, and a field for contact information; a directory of platforms and a way to browse the reviews; and—our modest innovation—a resource section where users could learn about consumer protection and the workings of the online rating and review industry.⁴ Branded as “a place for praise, concern, research and advice about review, rating and ranking websites,” the home page featured a black-and-white banner reading *How's My Feedback?* marked by a prominent red asterisk that—we thought—would perfectly convey the project's half-serious tone. Underneath a list of questions:

- What's good, what's bad about a feedback website?
- How do ratings, stars and metrics affect your life and business?
- Which sites to trust—and which rather to avoid?

Next, a big-buttoned call to action asked visitors to “Get Started: Pick a site and have your say,” followed by the clickable logos of all the platforms we had added to the roster, including Amazon, eBay, TripAdvisor, Yelp, and many more (“Rate the raters!”).

Only one thing was missing: the reviews.

* * *

In the weeks that followed, the line between parody and platform turned out to be quite blurry. Maybe a bit too true to the original, our platform replicated many of the features we had set out to challenge.

For one, it turned out that people did not necessarily want to be empowered. Feedback platforms routinely struggle to persuade their users to contribute in the first place, which is why most online purchases result in emails asking us to review both the seller and the product; it's why podcast hosts routinely plead with listeners to rate, subscribe, and “smash that like button”; and it's why restaurants offer free dessert in exchange for

⁴ See the *How's My Feedback?* website, <https://howsmysitefeedback.org>,

an online review. Without such prompting, platforms are left with empty pages and lonely invitations to “be the first to rate this business.”

Even when *How's My Feedback?* gained some traction, appearing occasionally in search results for terms like “concern with amazon review,” the submissions raised more questions than they answered. At times, the irony seemed completely lost on people. Reviews for the British retailer

Argos, for example, showed a range of sentiments from casual complaints about ordering “3 sets of tea cups and saucers and the next day 2 sets were delivered (not 3)” to dutiful reports that someone had needed to “ring tech guys at argos and spoke to Simon,” who turned out to be “wonderful.” A user by the name of “andy” even took the opportunity to offer a heartfelt apology for a previously bounced check:

this is a message to the argos people as I am doing a 12 step thing now I got to say sorry to u for whot I done 12 years ago as did cheques and u not get money so sorry

Other contributions posed more difficult questions. If one reviewer described a platform’s practices as “filthy” and another kindly offered his perspective that a certain review system “s*cks,” should those be seen as valuable contributions, or as unwanted exposure under England’s notoriously draconian defamation laws? At the opposite extreme, some praise was so effusive that we suspected it may have been written by one of our workshop participants—perhaps sincerely, perhaps in jest.

* * *

↑ At times, the irony was lost on users of the website.

So what, if anything, did our platform parody accomplish?

By conventional standards, *How's My Feedback?* was a miserable failure. Submissions were sparse, the platforms we targeted largely ignored it, and public conversation about the corrosive dynamics of these systems remained sporadic. Over time, maintenance became burdensome: plug-ins expired, links broke, text went out of date.

And yet, it could be argued that the project had still hit a nerve.

If parody works by imitation *ad absurdum*, then our efforts to reveal the platform’s structure and significance had done exactly that. There was in fact a lot of structure, but only little meaning and significance. In becoming indistinguishable from the empty form it sought to challenge, *How's My Feedback?* exposed—somewhat paradoxically—the emptiness of the original text.

This vanishing act taught us an important lesson. Good parodies show platforms as they really are: boring, dull, and formulaic, yet still immensely powerful. *

Message for Argos

this is a message to the argos people as I am doing a 12 step thing now I got to say sorry to u for whot I done 12 years ago as did cheques and u not get money so sorry

Written by andy on January 20, 2018 at 3:55 am

Comment

Good site

I use this site for the best comparisons, I get to know reviewers and once I find one who likes the same as me I buy on his/her recommendations.
If there is no one that I am familiar with I tend to trust the top 50 reviewers.
This is one of the few sites where the site does not edit reviews, they may refuse to publish on the grounds of bad language etc but you can trust most of the reviews to be genuine.
There is one exception that is when an author and his friends try and talk up their own book, this is easily identified as the reviewers always give 5 * and have only ever had one or two reviews published. It would be better however if Amazon could remove these reviews.

Written by Jake the Dog on June 25, 2011 at 10:31 pm

Comment

Shaver

Not buying from Argos ever again

Written by Royston on April 8, 2018 at 4:29 pm

Comment

Amazon Who????????????

Please could you amend the link to this comment by including a separte one for Amazon.com and Amazon.co.uk they are very different.
The previous comment seems to be about Amazon.com

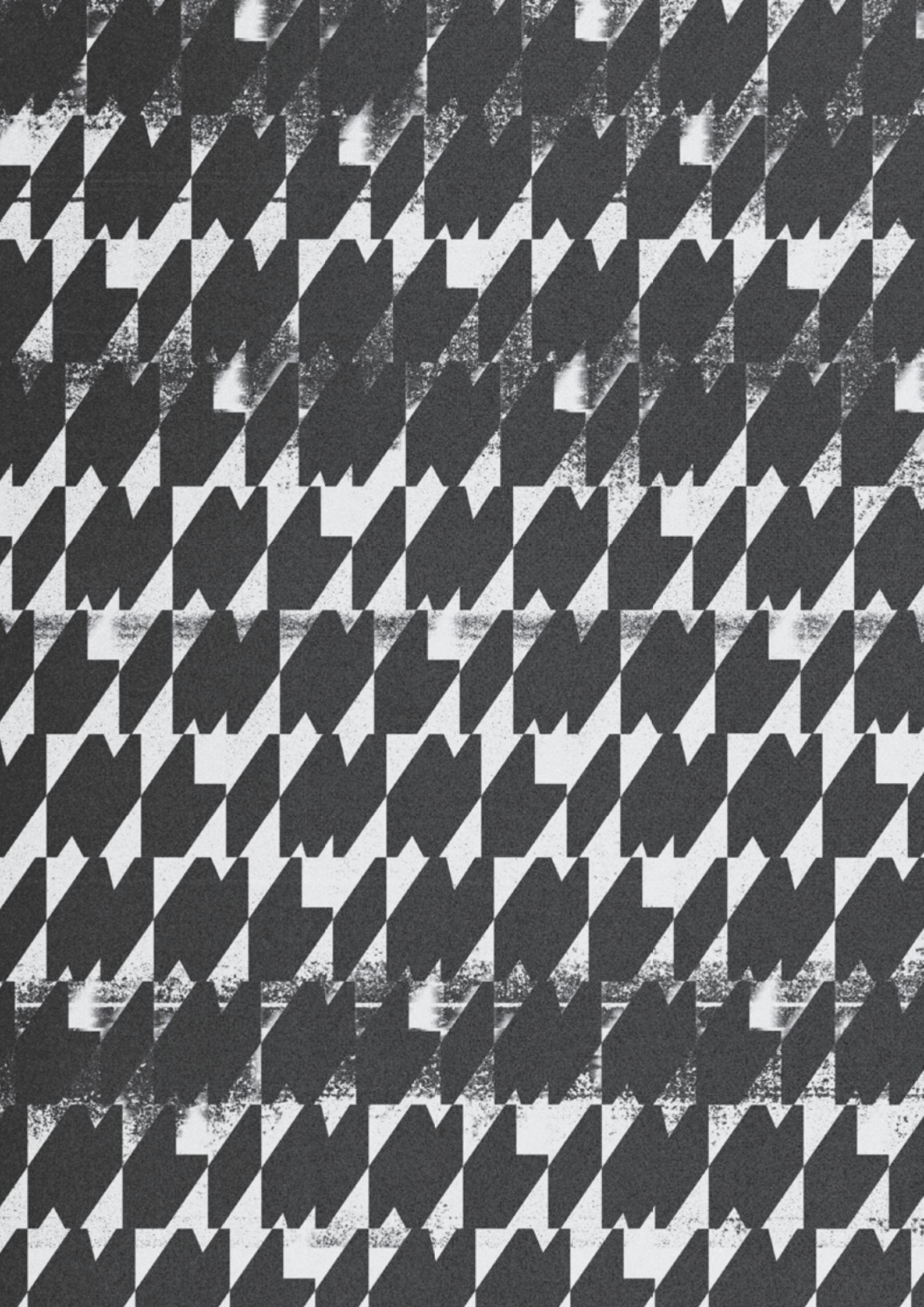
Written by Jake the Dog on June 25, 2011 at 10:44 pm

Comment

MALTE ZIEWITZ is Associate Professor of Science and Technology Studies at Cornell University. His work explores what happens when people use technologies to solve a social problem—and what this means for the rest of us.

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