2026

DIGITAL DEMOCRACY FROM BELOW

RESISTING AI AND TECHNO-SOLUTIONISM

COLLECTION OF ESSAYS

EDITED BY:

Jess Reia | Jonathan van Geuns | Nicole West Bassoff

DIGITAL DEMOCRACY FROM BELOW

Resisting AI and Techno-solutionism

Editors: Jess Reia, Jonathan van Geuns and Nicole West Bassoff

Contributors (alphabetical order by last name): Rafael C. Alvarado, Brianne Anderson, Nicole West Bassoff, Luã Cruz, Aashka Dave, Nancy L. Deutsch, Laurent Dubois, Joshua Earle, MC Forelle, Matthew Gillikin, Sergio Guillen Grillo, Yujia He, Mar Hicks, Steven L. Johnson, Mona Kasra, Tamara Kneese, Andre Vinicius Leal Sobral, Aaron Martin, Andrew Mondschein, David Nemer, Roya Pakzad, Pedro Augusto P. Francisco, Spencer Phillips, Jess Reia, Karina Ripley, Andrea Roberts, Fernanda R. Rosa, Dhanaraj Thakur, Quito Tsui, Michael Tyrala, Jonathan van Geuns, Yingchong Wang, Megan Wiessner, Rebecca Williams, Bianca Wylie, Caitlin D. Wylie.

Stewards team: Yasmin Curzi, Aashka Dave, Ehsan Nouri, Andre Vinicius Leal Sobral, Yingchong Wang, Megan Wiessner

Revisions: Jonathan van Geuns, Jess Reia and Nicole West Bassoff

Design and layout: Nela Díaz

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UVA | Digital Technology for Democracy Lab

CONTRIBUTORS

ALVARADO, Rafael

ANDERSON, B rianne

BASSOFF, Nicole West

CRUZ, Luã

DAVE, Aashka

DEUTSCH, Nancy L.

DUBOIS, Laurent

EARLE, Joshua

FORELLE, MC

GILLIKIN, Matthew

GUILLEN GRILLO, Sergio

HE, Yujia

HICKS, Mar

JOHNSON, Steven L.

KASRA, Mona

KNEESE, Tamara

LEAL SOBRAL, Andre Vinicius

MARTIN, Aaron

MONDSCHEIN, Andrew

NEMER, David

PAKZAD, Roya

FRANCISCO, Pedro Augusto P.

PHILLIPS, Spencer

REIA, Jess

RIPLEY, Karina

ROBERTS, Andrea

ROSA, Fernanda

THAKUR, Dhanaraj

TSUI, Quito

TYRALA, Michael

VAN GEUNS, Jonathan

WANG, Yingchong

WIESSNER, Megan

WILLIAMS, Rebecca

WYLIE, Bianca

WYLIE, Caitlin D.

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INTRODUCTION

GO AND BE DIFFICULT: PRACTICING DEMOCRACY IN THE AGE OF AI

Jess Reia
Jonathan van Geuns
Nicole West Bassoff

On July 18, 2026, five months after the *Digital Democracy from Below* convening, people turned out in 142 places across 42 states to object to data centers being built near them. It was the first nationally coordinated day of action against AI infrastructure in the United States.[1] Since 2025, roughly $286 billion in announced investment has been blocked or delayed by opposition of this kind, and more than three hundred localities have passed moratoria.[2] A Reuters/Ipsos poll in June found that only 14 percent of Americans would accept one of these facilities in their community.[3]

Far from being an issue exclusive to the U.S., the expansion of AI infrastructure is putting pressure on communities on the other side of the continent. A trend previously witnessed with other problematic technologies, opposition in the Global North often results in the relocation of harms to the Global Majority. In Brazil, a massive TikTok data center was planned to be built on Indigenous land in the semi-arid region, forcing local communities to quickly mobilize against the project.[4] They relied on studies conducted by civil society organizations[5] to uncover the actual impact of a mega data center in such a fragile ecosystem. Argentina's Patagonia is also experiencing efforts to build hyperscale infrastructure on its lands, and it is up to residents and journalists to collect the data and testimonies that will be used to push back.[6]

By most of the definitions in this collection, that is *democracy from below*, working against techno-solutionism, or the assumption that digital technology solves problems. Making digital technology into an object of political contestation involves alliances some might find surprising. The coalitions holding the line in Virginia—

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1 Nichola Groom and Laila Kearney, "Data Center Opponents Stage 142 Protests Across 42 US States," Reuters, July 18, 2026, https://www.usnews.com/news/top-news/articles/2026-07-18/us-data-center-protests-go-national-as-backlash-grows.

2 Data Center Watch, "$64 Billion of Data Center Projects Have Been Blocked or Delayed Amid Local Opposition," accessed July 2026, https://www.datacenterwatch.org/report; "Community Backlash to AI Data Centers Is Growing Across the U.S.," Time, July 22, 2026, https://time.com/article/2026/07/22/community-backlash-ai-data-centers/

3 Reuters/Ipsos poll, June 2026, reported in Groom and Kearney, "Data Center Opponents Stage 142 Protests."

4 Naiara Galarrasa Gortázar, "The Anacé Indigenous people are protesting TikTok's construction of the largest data center in Brazil," El País, December 3, 2025, https://english.elpais.com/international/women-leaders-of-latin-america/2025-12-03/the-anace-indigenous-people-are-protesting-tiktoks-construction-of-the-largest-data-center-in-brazil.html

5 Idec, "Não somos quintal de data centers," Idec, September 30, 2025, https://idec.org.br/publicacao/nao-somos-quintal-de-data-centers

6 Matías di Santi and Edgardo Litvinoff, "How To Investigate Mega Data Centers in Patagonia: Billion-Dollar Promises and Regulatory Gaps Raise Concerns," Pulitzer Center, June 11, 2026, https://pulitzercenter.org/resource/how-investigate-mega-data-centers-patagonia-billion-dollar-promises-and-regulatory-gaps

where we met, in the state that carries more of this infrastructure than anywhere on earth[7]—encompass environmental justice organizers and property-rights conservatives. We would rather sit with that tension than explain it away. “From below” describes a location and a direction of pressure. It does not describe a politics, and it carries no assurance that you will like who is standing next to you.

In the U.S. as elsewhere, we have seen that as local coalitions build, the locus of decision-making may shift. In June, a 269-page bipartisan bill in Congress proposed a three-year preemption of state laws governing how AI models are built.[8] A committee backed by a White House AI adviser has pledged over $100 million to pro-AI candidates in the midterms.[9] Elon Musk and Jeff Bezos have both filed plans for data centers in orbit, with the uncomfortable corollary that you cannot hold a county hearing about a satellite. This points to a concern that surfaced again and again in our convening and organizes the first half of the collection: the political question back of a technological promise is usually settled before it reaches a public forum, through decisions embedded in the server room, the tariff schedule, the procurement document, the default setting, the standard, or the expert framing of public problems.

The essays

Our meeting on February 20, 2026 at the Bond House in Charlottesville, Virginia, brought together scholars, city staff, activists, technologists, and organizers running nonprofits and advocacy groups. The essays here were written in the months that followed, arranged to reflect an emergent, collective argument about the different meanings and possibilities of “digital democracy from below.” They go beyond the U.S. context to explore distinct but interdependent dynamics of technological politics in places around the world. For many authors, the point is to de-center the digital entirely. We did not edit toward consensus, and we would ask you not to read toward it.

What the past months have shown is not that people are angry (anger is cheap and abundant). It is that anger found a jurisdiction with respect to the AI avalanche. Data centers, unlike platforms, have to sit somewhere: they need land, water, a substation, a zoning variance, a willing county board, and every one of those is a place where an ordinary person can stand and be legally difficult. Materiality guarantees nothing. But it may supply a concrete locality or venue where the possibilities for democratic procedure become more tangible.

AI is also becoming pervasive in everyday life, appearing as a visible and

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7 On Northern Virginia as “the Internet Capital of the World,” see Clayton Rosati, Aju James, and Kathryne Metcalf, “Data Plantation: Northern Virginia and the Territorialization of Digital Civilization,” Online Media and Global Communication 2 (2023): 199-227, https://doi.org/10.1515/omgc-2023-0017.

8 Great American Artificial Intelligence Act, bipartisan discussion draft released by Reps. Jay Obernolte and Lori Trahan, June 4, 2026. See Mintz, “AI: The Washington Report — July 2026 Edition,” https://www.mintz.com/insights-center/viewpoints/54941/2026-07-08-aiwashington-report-july-2026-edition.

9 Innovation Council Action, backed by White House AI adviser David Sacks. See “Voters Are Furious About AI Data Centres Pushing Up Their Electricity Bills,” International Business Times UK, 2026, https://www.ibtimes.co.uk/ai-data-centres-electricity-costs-2026-midterms-1801207.

constant presence in many aspects of work, education, and personal relationships. It restructures job markets, creates new slop aesthetics, and is forcibly incorporated into almost all digital services—from social media apps to chatbots being used for healthcare—with promises of economic growth and efficiency, without any serious reflection on the social and political consequences. But we believe that the situation is not hopeless or settled, no matter how powerful the corporations or systems profiting from AI may appear. The trick is to recognize that democratic levers for change are not given in advance, but must be actively and creatively reimagined.

Read that way, this collection is a survey of where such handles are hiding in the digital age, in places considerably less obvious than a county hearing. In procurement, in a watershed boundary, in a tax treaty almost nobody knows exists, in a benchmark written by users rather than engineers, in a legal assumption about how technology "works" that is ripe for challenging. None of these were designed as democratic instruments, which is precisely the point. Democracy is not a form of government but a way of living. A skill that can be practiced. There is a great deal more of it available than the last few years have led anyone to expect.

Seeing through the fog

The first part of the collection explores the vocabulary and design choices that make AI's political consequences more or less visible or graspable. Jonathan van Geuns opens by arguing that participatory rituals, from town halls to public comment periods, routinely function as "participation-washing," and that only a real ability to say "no" restores democracy to the process of AI governance. Rebecca Williams recasts the Four Horsemen of the Apocalypse as the Four Horsemen of Techno-Corporate Rule, naming the recurring moves by which corporate power over technology comes to look like fate rather than a choice. Taking up recent events from the 2026 Iran-US/Israel conflict, Mona Kasra examines how AI-generated imagery functions as "synthetic witnessing," shifting the shared evidentiary basis that democratic accountability depends on. Similarly concerned with how AI might amplify the fog of war, Pedro Augusto P. Francisco reads AI targeting systems used in recent wars against older, non-Western traditions of prediction and warfare, arguing that where those traditions held human judgment and moral responsibility together, algorithmic prediction is built to eliminate both. Sergio Guillen Grillo offers tools for tracing how the meaning of a technology like a data center is made and contested across sites, from protest to permitting hearing. And Rafael C. Alvarado closes the section with a genealogy of "whiteboxing," the design tradition of making technology look too simple to question.

Recognizing the limits of infrastructure

The second set of essays turns from discourse to the structural and material foundations that embed political choices. Steven L. Johnson and Matthew Gillikin, writing from the perspective of their work with the advocacy group Livable Cville, show how the platforms residents now depend on to find out about a

town budget meeting, or to organize their neighbors, more often obscure civic opportunities than reveal them. Aaron Martin and Quito Tsui ask whether the tech industry's plans to move data centers into orbit expose the limits of a resistance movement that has so far organized around the material, earthbound experience of living near a data center. Drawing on fieldwork in a Brazilian favela community, David Nemer argues that the disinformation crisis is not a failure of individual judgment but a structural one, as data plans trap users in corporate walled gardens. Writing as a nonprofit practitioner, Brianne Anderson describes how nonprofits are asked to bridge the digital divide for the communities they serve while remaining chronically under-resourced to do so themselves, and proposes a path forward. Spencer Phillips offers a proposal to draw congressional districts along watershed boundaries instead of partisan ones, arguing that shared water, unlike shared politics, could give voters of every stripe a genuine community of interest. Finally, Andrew Mondschein examines "urban digital twins," the sensor-and-simulation models cities are using to manage everything from traffic to water, and calls attention to the rare cities, like Bologna, that have begun building belonging and democratic inclusion into those models.

Fighting erasure

In the third part, the authors ask whose knowledge and whose history survive conversion into digital and algorithmic systems. Laurent Dubois warns that large language models trained on already unequal archives risk accelerating and naturalizing historical erasures. Joshua Earle traces the statistical tools behind today's "one-size-fits-most" AI models back to their eugenicist origins, arguing that smaller models built with and for specific communities do less harm than large ones trained to serve undifferentiated masses. Yingchong Wang describes how Chinese users turned Bazi, a traditional, folk cosmology, into a grassroots benchmark for judging whether an AI can be trusted. Dhanaraj Thakur shows how content moderation systems routinely underserve "low-resource" languages, with consequences for who gets to participate fully in multiracial democracies. Andrea Roberts describes a "Digital Rubric," co-developed with descendants of enslaved communities, that gives them real power over how vendors handle their data and heritage online. Roya Pakzad interrogates terms like "Majority World" and digital sovereignty, arguing that the world outside the West is often lumped into one undifferentiated other, while sovereignty itself can mean state control in one country and grassroots self-determination in the next. Mar Hicks places the backlash against AI data centers alongside the ongoing, often unacknowledged harm of the COVID-19 pandemic, both struggles over whose bodies and futures a society is willing to protect.

Practicing everyday democracy

Authors in the fourth section attend to the ways that democracy from below takes shape in mundane habits, labor relations, and social practices. Caitlin D. Wylie argues that democracy is fundamentally a matter of storytelling, and that a society survives only as long as its members can hold compatible, even if not identical, accounts of what is real and true. Andre Vinicius Leal Sobral

similarly makes a case for understanding democracy as a “way of life” requiring democratic habits that are undermined by the imposition of autocratic values in the workplace. Reminding us that official knowledge often lags behind lived experience, Aashka Dave argues that turning our quiet, individual climate adaptations into shared, public knowledge is itself a form of grassroots democratic practice. Reflecting on the specific labor dynamics of university tenure review, Karina Ripley asks what happens to the everyday work of digital democracy from below when it is not legible to or valued by employment metrics. Tamara Kneese describes AI as an anti-democratic technology by design and looks to coalitions between tech workers, public-sector employees, and frontline communities as a source of leverage over its infrastructure. The closing essay by MC Forelle proposes a New New Deal that funds people, like teachers, caregivers, and social workers, to do the human work that AI is currently being sold to replace.

Resisting, organizing and re-building

The fifth and final part shifts from diagnosis to action, asking what resistance looks like and how to build more democratic ways of redesigning digital technology and its politics. Megan Wiessner argues that organizers’ everyday reliance on tools like spreadsheets and Signal chats is a site of prefiguration, showing technology can be governed by collective need rather than profit. Nicole West Bassoff argues that digital democracy means refusing the “digital imperative”—the assumption that digitization is inevitable progress—and locating the potential for change in people and political collectives, not better-designed technology. Tracing decades of grassroots pressure on global tax governance, Yujia He and Michael Tyrala show how far civil society has pushed Big Tech’s tax obligations onto the agenda, and how quickly that progress can be rolled back by a single hostile administration. Luã Cruz examines a proposed TikTok data center on Indigenous land in Brazil, showing how the community’s use of free, prior, and informed consent protocols ties the fight over data infrastructure to territorial sovereignty. Nancy L. Deutsch argues that although young people are shut out of formal democracy by age, they already practice civic life online in ways adults need to recognize and protect. Fernanda R. Rosa calls for a “pluriversity,” built with Black and Indigenous communities across the Americas, that holds science and technology accountable to knowledges Western universities have erased. Jess Reia argues that mutual aid and other networks of care are themselves democratic infrastructure, sustaining communities failed by the state and the market. Bianca Wylie closes the collection by arguing that democracy’s hard, tiring work happens in the daily and mundane choices we already make around consent, accessibility, and surveillance. Treating those choices as democratic practice, not just as tech etiquette, is how we build the norms institutions depend on.

The essays here are short by design and they do not need to be read in order, though the order is an argument. Start with whichever title makes you most suspicious. Somewhere in here is a venue you already have standing in; a board you sit on, a contract you sign, a language you speak, a room where a decision gets made before anyone thinks to call it a decision. Go and be difficult.

1.SEEING THROUGH THE FOG

WHY AI GOVERNANCE NEEDS FRICTION, NOT FLUENCY

Jonathan van Geuns
Independent researcher

In 2016, Allegheny County, Pennsylvania, began using an algorithm to help decide which families should be investigated for child neglect. The Allegheny Family Screening Tool (AFST) assigns a risk score based on a prediction of the likelihood a child will be removed from their home. The score is built on data about poverty, disability, mental health service use, housing history, and involvement with the criminal justice system. Call screeners are told to treat it as one factor among many. In practice, it decided which families got a knock on the door.

What makes AFST worth discussing here is not that it was secretly deployed. It is that it was not. Allegheny County held community meetings before launching; it published FAQs, invited researchers for evaluation, and it was, by standards of public-sector AI, unusually transparent. The county described community engagement as a priority.[1] Yet, when the tool was audited in 2023, they found that affected families had no knowledge of any policies, no ability to know how it had shaped decisions about them, and no meaningful avenue to contest outcomes.[2] Model updates were made internally, without community input or public explanation.[3] The county had organized participation. It had not distributed power in any meaningful democratic sense.

AI governance has learned to speak the language of participation with remarkable fluency. Governments convene roundtables, release draft strategies, hold listening sessions, and invite feedback on algorithm registers, principles, and pilots. The ritual is familiar: ask the public what it thinks but proceed largely as planned. Participation has become the acceptable face of democratic legitimacy in AI governance. However, participation is not power, and Allegheny shows that this gap persists even when the forms are carefully observed, communities can be consulted without ever being in a position to say no.

This is what "participation-washing"[4] looks like in practice: inclusion is performed, and the machinery of governance is left untouched by the voices it claims to incorporate. AI ethics boards, stakeholder roundtables, public fora—these are not building blocks of democracy but its aesthetic substitutes, designed to neutralize critique before it reaches the places where

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1 Allegheny County Department of Human Services, *Allegheny Family Screening Tool: Frequently Asked Questions* (Pittsburgh: Allegheny County DHS, August 2018), https://www.alleghenycountyanalytics.us/wp-content/uploads/2018/08/FAQs-August-2018-update.pdf.

2 Marissa Gerchick et al., "The Devil Is in the Details: Interrogating Values Embedded in the Allegheny Family Screening Tool," Proceedings of the 2023 ACM Conference on Fairness, Accountability, and Transparency (New York, NY, USA), FAccT '23, June 12, 2023, 1292–310, https://doi.org/10.1145/3593013.3594081.

3 American Civil Liberties Union, "How Policy Hidden in an Algorithm Is Threatening Families in This Pennsylvania County," August 2, 2023, https://www.aclu.org/news/womens-rights/how-policy-hidden-in-an-algorithm-is-threatening-families-in-this-pennsylvania-county.

4 Jonathan van Geuns, "Beyond the Façade: Challenging and Evaluating the Meaning of Participation in AI Governance," *Tech Policy Press*, February 19, 2025, https://www.techpolicy.press/beyond-the-facade-challenging-and-evaluating-the-meaning-of-participation-in-ai-governance/

decisions happen. It is structural, and in some cases deliberately so.

Sara Ahmed names the underlying institutional logic: the nonperformative commitment. A declaration of inclusion that does not, in practice, include. Institutions fund advisory councils, then retain full discretion over whether to heed their recommendations. They convene panels of ethicists, then disband them when scrutiny becomes inconvenient. This is not a failure of participation. It is its co-optation.[5]

Across North America, governments have been experimenting with more structured forms of engagement. In Canada, the federal AI strategy promised early and meaningful public participation.[6] New York City introduced a Citywide AI Steering Committee, an Office of Algorithmic Accountability, and emerging legislative instruments.[7] The first U.S. Public Assembly on High-Risk AI used random selection, compensated participants, and structured deliberation over multiple days.[8] A genuine departure from standard practice. But read these carefully. Even here, participation is largely structured via consultation and advisory roles, while decision-making authority—what is procured, deployed, scaled, withdrawn—remains concentrated within government and technical institutions. The public may shape how systems are discussed, but rarely whether they should exist, or under what conditions they must be stopped.

Sherry Arnstein observed this in 1969: participation, at its lower rungs, functions as consultation or placation—mechanisms that allow people to be heard without granting power over outcomes.[9] Sasha Costanza-Chock has updated the argument for the current moment, showing how participation can actively reproduce harm when it operates within systems that are not designed to change.[10]

In Allegheny, participation produced an engagement record that could be cited as evidence of responsiveness. Even if participation was documented, it did not give the disproportionately Black and poor families any authority. Those who knew about it lacked a clear avenue to raise concerns.[11] The community had not been empowered.

In the OECD's own guidelines, participation processes should only be organized when there is genuine room for meaningful influence on decisions.[12] If a process cannot alter a decision, it should not be described as democratic governance. The Council of Europe's AI Convention (CAIDP) requires states to adopt measures protecting democracy and fair participation.[13] The

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5 Sara Ahmed, *On Being Included: Racism and Diversity in Institutional Life* (Durham: Duke University Press, 2012).

6 Treasury Board of Canada Secretariat, *Guide on the Use of Artificial Intelligence in the Government of Canada* (Ottawa: Treasury Board of Canada Secretariat, 2025).

7 New York City Office of Technology and Innovation, *AI Public Participation and Engagement Guidance* (New York: NYC OTI, 2025).

8 Center for New Data and Public Participation, *Public Assembly on High-Risk AI* (Washington, DC: CNDPP, 2025).

9 Sherry R. Arnstein, "A Ladder of Citizen Participation," *Journal of the American Institute of Planners* 35, no. 4 (1969): 216–224.

10 Sasha Costanza-Chock, *Design Justice: Community-Led Practices to Build the Worlds We Need* (Cambridge, MA: MIT Press, 2020).

11 Gerchick et al., "Devil Is in the Details," 1300–1305. On family awareness, see also Liz Cheng et al., "Human-AI Collaboration in Child Welfare Decision Making," cited in Gerchick et al.

12 Ibid.

13 Council of Europe, *Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law* (Strasbourg: Council of Europe, 2024).

CAIDP AI and Democratic Values Index calls for the ability to contest outcomes, liability rules, and a “termination obligation” for systems that undermine rights and democratic values.[14]

So, what would democratic AI look like? Democratic AI would put friction back into deployment. Friction is the point. AI is sold for acceleration: faster, leaner, cheaper, inevitable. The entire political economy of AI deployment is organized around elimination of delay; streamlined procurement, pre-approved vendor lists, algorithmic decisions that happen in milliseconds and are reviewed, if at all, months later.

Friction is what democratic governance looks like from inside that logic: inconvenient, slow, expensive. What friction does is create the conditions under which someone can say no. It is the time needed to find a lawyer, file a complaint, organize a coalition, demand an audit. It is the institutional space in which refusal becomes possible. Remove friction, and you remove the last practical defense communities have.

Democratic control is slow. It requires records, hearings, refusal, revision, and outright stoppage. That slowness is not a defect in governance. It is governance. For the families assessed by AFST, the system was already running. The families were not in any meaningful way governing. That difference is what this is really about. Not whether people are invited to the table, but whether anything said could change what happens to them. Without that, participation is not a step toward democratic AI. It can be a reason to stop demanding it.

Some jurisdictions are beginning to experiment with harder edges. Santa Clara County suspended its use of predictive tools in child welfare pending independent audits. Theu EU AI Act’s classification of certain systems as high-risk creates at least a legal floor, even if enforcement remains to be tested. At the community level, organizations like the Algorithmic Justice League and Data Driven Detroit have developed contestation toolkits that help affected residents challenge automated decisions. These are not solutions. But they are friction; institutionalized, legible and harder to ignore. The question is whether governance systems can be redesigned to make that friction the default, rather than something communities have to fight for every time.

14 Center for AI and Digital Policy, *AI and Democratic Values Index 2024* (Washington, DC: CAIDP, 2024).

THE FOUR HORSEMEN OF TECHNO-CORPORATE RULE

Rebecca Williams
Pratt University, School of Information

At the Digital Democracy from Below public convening, I was struck by how difficult it felt to focus on small, local interventions given growing techno-corporate rule looming overhead.[1] In the spirit of storytelling, and in search of some footing to push back against this constant avoidance and reframing, I offer a remix of the Four Horsemen of the Apocalypse: the Four Horsemen of Techno-Corporate Rule. Like their mythical predecessors, they are harbingers of the slow collapse of democracy.

The Horse of Inevitable Convenience

During one breakout session, a fellow attendee described a "white box" quality of technology. Where the "black box" obscures technology's underlying mechanisms, the "white box" hides technology's impact through normalization, limiting debate. In the original myth, the White Horse appears first; it marks entry. In techno-corporate rule, the Horse of Inevitable Convenience enters by insisting that everyone wants this, that privacy is already dead, and that, like the invention of fire, new technology determines policy, not the other way around. Claims that technology is inevitable, or that you will be left behind, are early signs of democratic erosion. Democracy always offers a choice.

When you see the Horse of Inevitable Convenience appear, name the grift: techno-solutionism,[2] technological determinism,[3] the myth of convenience, narratives of modernization as progress. Describe the real trade-offs. Demand that lawmakers pause deployment.[4] Insist on alternatives and time for collective deliberation. Keep all options on the table and require real exit paths, including interoperability or full divestment.

The Horse of Extraction and Punishment

The Red Horse of the Apocalypse represents war, and in techno-corporate rule, the Horse of Extraction and Punishment is not so different. Where the White Horse enters quietly, the Red Horse scales through expansion and control.[5] If you have ever had your credit score determine

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1 See examples such as: ID.me Network, "Privacy Bill of Rights," accessed April 22, 2026, https://network.id.me/privacy-bill-of-rights/; Anthropic, "Claude's Constitution," accessed April 22, 2026, https://www.anthropic.com/constitution; Alexander C. Karp and Nicholas W. Zamiska, The Technological Republic: Hard Power, Soft Belief, and the Future of the West (New York: Crown, 2025); ProPublica, "The TurboTax Trap Archives," May 4, 2022, https://www.propublica.org/series/the-turbotax-trap; David Yaffe-Bellany, "The Rise of the Crypto Mayors," *New York Times*, January 25, 2022, https://www.nytimes.com/2022/01/25/business/crypto-mayors.html.

2 Evgeny Morozov, *To Save Everything, Click Here: The Folly of Technological Solutionism* (New York: PublicAffairs, 2013).

3 See Langdon Winner, "Do Artifacts Have Politics?," *Daedalus* 109, no. 1 (1980): 121-36; and Andrew Feenberg, *Transforming Technology: A Critical Theory Revisited* (New York: Oxford University Press, 2002).

4 See campaigns like Ban the Scan. "Ban the Scan." Accessed April 22, 2026. https://www.banthescan.org.

5 Simone Browne, *Dark Matters: On the Surveillance of Blackness* (Durham, NC: Duke University Press, 2015).

access,[6] seen your price change based on your data, encountered biometric scans,[7] or used a digital ID online, that is the Red Horse. Made most explicit, the Red Horse appears in AI-assisted military targeting,[8] but across contexts the logic is the same: identify, segment, and determine your fate.

When you see the Horse of Extraction and Punishment, name the mechanism of control: algorithmic bias, digital redlining,[9] surveillance capitalism,[10] and surveillance pricing.[11] Delete what you can. Introduce noise[12] and disrupt profiling. Organize against choke points like data centers and energy use. Create counter-narratives and reclaim representation through self-determination and community datasets. Build alternatives grounded in democratic values: mutual aid, labor rights, and public goods.

The Horse of Shadow Rule

The Black Horse of the Apocalypse is often associated with scarcity. In techno-corporate rule, the Horse of Shadow Rule governs through a black box you feel more than see. It emerges as shadow banning, "the algorithm," large language models that cannot explain their outputs, or decisions presented as AI but made by hidden human labor. Technology corporations are shielded by trade secrecy, liability regimes, and profit obligations that limit accountability and erode constitutional rights. As governments rely on these corporations to replace public functions, the public slowly acclimates obscured governance, eroding democracy itself.

When you feel the Horse of Shadow Rule, name the man behind the curtain: black box systems, dark patterns, and commercial data surveillance. Demand human decision-making; an operator, not a chatbot. Insist on due process and third-party oversight rather than self-auditing. Investigate by contributing data to collective research efforts or requesting public records to surface government use of these systems. Refuse invisible systems as final authority and insist decisions remain open to challenge and collective control.

The Horse of Atrophy and Decay

The Pale Horse of the Apocalypse represents death. In techno-corporate rule, the Horse of Atrophy and Decay marks the end state: democracy is replaced. Public functions are handed

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6 Tamara K. Nopper, "Credit Scoring and the Risk of Inclusion," *Data & Society: Points*, June 8, 2022, https://medium.com/datasociety-points/credit-scoring-and-the-risk-of-inclusion-151003f63a1a.

7 Liam Quigley, "NYC Wegmans Is Storing Biometric Data on Shoppers' Eyes, Voices and Faces," *Gothamist*, January 3, 2026, https://gothamist.com/news/nyc-wegmans-is-storing-biometric-data-on-shoppers-eyes-voices-and-faces.

8 Yuval Abraham, "'Lavender': The AI Machine Directing Israel's Bombing Spree in Gaza," *+972 Magazine*, April 3, 2024, https://www.972mag.com/lavender-ai-israeli-army-gaza/.

9 Virginia Eubanks, *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor* (New York: St. Martin's Press, 2018).

10 Kenneth Lipartito, "Surveillance Capitalism: Origins, History, Consequences," *Histories* 5, no. 1 (2025): 2, https://doi.org/10.3390/histories5010002.

11 Federal Trade Commission, "FTC Surveillance Pricing Study Indicates Wide Range of Personal Data Used to Set Individualized Consumer Prices," January 17, 2025, https://www.ftc.gov/news-events/news/press-releases/2025/01/ftc-surveillance-pricing-study-indicates-wide-range-personal-data-used-set-individualized-consumer.

12 Finn Brunton and Helen Nissenbaum, *Obfuscation: A User's Guide for Privacy and Protest* (Cambridge, MA: MIT Press, 2015).

over to techno-corporate actors, from currency to core public goods.[13] This shift is reinforced by deepening entanglement between technology companies and the state, including in domains like national security,[14] and by a datafied politics that treats people as segments to be influenced rather than participants in collective decision-making.

When you see the Horse of Atrophy and Decay, name the loss: privatization, institutional erosion, regulatory capture, and the concentration of power in a techno-industrial complex. Begin with yourself. Divest from techno-corporate mediation. Democracy cannot survive if your relationships, attention, and choices are fully mediated by technology corporations. Preserve and maintain unsaturated spaces. Then organize collectively at work, in your community, and with lawmakers to rebuild democratic capacity locally and demand labor rights, accountability, and democratic control over technology.

In the original myth, the horsemen signal an unstoppable end. But unlike the inevitability promised by technology companies, if we recognize these horsemen as a shift away from democratic self-governance, people organizing collectively across the world can interrupt them and fight back.

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13 Tom Perkins, "DOGE Cuts Allow Musk to Cash in with SpaceX and Starlink Contracts, Ex-Workers Warn," *The Guardian*, March 25, 2025, https://www.theguardian.com/technology/2025/mar/25/doge-musk-spacex-starlink-contracts.

14 OpenAI, "Our Agreement with the Department of War," April 21, 2026, https://openai.com/index/our-agreement-with-the-department-of-war/.

THE POLITICAL FUNCTION OF AI IMAGERY

Mona Kasra
Departments of Art and Drama, University of Virginia

Photographs once carried an indexical connection to actual political events, even if only partially. Generative AI complicates that relationship by reshaping the infrastructures through which political reality becomes visible, believable, and publicly shared within platform economies.[1] Synthetic images do not function as documentary evidence. Instead, they imitate the visual authority of documentation through plausibility, affect, and simulation.

During the 2026 Iran-US/Israel conflict, AI-generated imagery became a powerful but dangerous form of political rhetoric and algorithmic mediation.[2] Across social media platforms, synthetic visuals circulated fabricated war scenes, nationalist and religious iconography, memes, satirical videos, and AI-generated LEGO-style animations. These images were persuasive not because they documented reality, but because they felt emotionally, politically, and ideologically plausible to viewers. Under severe censorship, internet blackouts,[3] and restricted access to independent reporting inside Iran, synthetic imagery became both a substitute for verifiable visual evidence and operated as a form of "synthetic witnessing": images that imitate the authority of visual evidence without maintaining any connection to the events they appear to depict.

Discussions around AI visuals often center on misinformation and deception, and rightfully so. Synthetic media can manipulate public opinion, fabricate events, accelerate propaganda, and deepen uncertainty about what visual content can still be trusted. But the political implications of AI-generated imagery extend beyond the framework of disinformation. The growing accessibility and sophistication of generative AI, along with evolving platform algorithms and engagement-driven visibility systems, allows political groups, propagandists, influencers, and opportunistic content creators to visualize and disseminate preferred versions of political reality at scale.

The Iran conflict offers a revealing example of this shift. In the absence of international journalists on the ground, visual evidence remained fragmented, limited, and contested. Supporters of competing political positions, including the IRGC-affiliated actors, strategically circulated AI-generated visuals to signal political allegiance, dramatize destruction of war, mock leaders, discredit opposition, and imagine possible postwar futures.[4] These images blurred the

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1 Elisa Serafinelli, "Seeing Is No Longer Believing: Visual-AI, Deepfakes, and the Semiotics of Synthetic Images," *Visual Studies* 0, no. 0 (2026): 1–13, https://doi.org/10.1080/1472586X.2026.2679117.

2 Valerie Wirtschafter, "Generative AI as a Weapon of War in Iran," *Brookings*, April 8, 2026, https://www.brookings.edu/articles/generative-ai-as-a-weapon-of-war-in-iran/.

3 Aisha Down, "Iran's Internet Blackout Is Longest National Shutdown since Arab Spring," World News, *The Guardian*, April 6, 2026, https://www.theguardian.com/technology/2026/apr/06/iran-internet-blackout-is-longest-national-shutdown-since-arab-spring.

4 Tamsin Paternoster and Estelle Nilsson-Julien, "How Iran-Linked Accounts Faked Irish, Scottish Profiles to Sway Public," Euronews, April 6, 2026, https://www.euronews.com/my-europe/2026/06/04/social-media-operation-linked-to-iran-manipulated-public-through-fake-irish-and-scottish-p; Mahsa Alimardani and Shirin Anlen, "How AI Content Detection Is Being Weaponized in the Iran War," Tech Policy Press, March 17, 2026, https://techpolicy.press/how-ai-content-detection-is-being-weaponized-in-the-iran-war.

distinctions between representation, speculation, and fabrication. Rather than depicting political events, they shaped competing interpretations of political reality as the conflict unfolded.

Particularly noteworthy was the spread of AI-generated LEGO-style war animations that reframed military conflict through the aesthetics of internet entertainment culture.[5] Produced largely in support of the Iranian regime and paired with AI-generated contemporary Western-style music, these clips depicted imagined Iranian victories while turning war into highly shareable spectacle. Unlike conventional state propaganda, which usually relies on formal ideological or religious messaging, this content operated through humor, absurdity, playfulness, and platform aesthetics optimized for online engagement.

The popularity of synthetic imagery reflects broader shifts in contemporary media ecologies. Social media platforms reward immediacy, novelty, emotional intensity, and engagement. Synthetic content thrives within these systems not because it is true, but because it is optimized for circulation and affective response. Platform algorithms, moderation systems, and internet shutdowns increasingly shape the conditions under which political reality becomes visible and believable. In this environment, the political power of images depends less on accuracy than on emotional resonance, outrage, solidarity, fear, and plausibility.

Democratic life depends on shared infrastructures of witnessing, verification, evidence, and collective memory. The rise of synthetic imagery challenges these foundations. Visual documentation has historically played a critical role in public accountability and historical memory during political crises. But when every image becomes potentially synthetic, the authority of visual evidence weakens. Authentic footage can be dismissed as fabricated while AI-generated content competes with real documentation for attention and visibility. In propagandistic media ecosystems, uncertainty itself becomes politically useful because doubt undermines our ability to distinguish reality from simulation.

Iran's case offers a warning about a future in which political participation and historical memory are further mediated through AI-generated and synthetic forms of witnessing. As generative AI becomes more embedded in moments of conflict, synthetic content is more likely to play a greater role in shaping perception and recollection of events. But AI images cannot be understood as misinformation alone. The broader issue is not that they deceive audiences, but that they transform the conditions under which political reality is produced, circulated, and contested. And with it, the conditions under which democratic accountability becomes possible at all.

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5 Matt Shea and Laurie Kalus, "Iran War: We Spoke to the Man Making Lego-Style AI Videos That Experts Say Are Powerful Propaganda," *BBC*, April 11, 2026, https://www.bbc.com/news/articles/cjd8jrd1vnyo.

AI WARFARE, PREDICTION AND COSMOTECHNICS

Pedro Augusto P. Francisco
Department of Engineering and Society, University of Virginia

On February 28, 2026, the Shajareh Tayyebeh Girls' Elementary School in Minab, Iran, was destroyed in a missile strike that resulted in the deaths of approximately 170 people, including teachers, staff members, and girls between the ages of seven and twelve. The school was one among 2,000 targets struck within the first 24 hours of what would later become known as Operation Epic Fury, a joint operation carried out by the United States and Israel.[1]

As expected, the attack provoked outrage and condemnation from the international community, alongside questions regarding what could have led to the selection of a primary school as a priority target. Among the hypotheses raised was the possibility that the strike resulted from the use of AI-driven tools for military target selection and acquisition, most likely Palantir's Maven Smart system,[2] an AI-enabled targeting platform that automates parts of the process of identifying and prioritizing military targets from large-scale surveillance data.

The attack on the school, together with the use of the Lavender system - another AI-assisted target generation system that automates the identification of potential military targets - employed by Israel in Gaza in 2024,[3] are striking episodes within the recent and growing trend of deploying AI tools in armed conflicts. Although AI-driven predictive technologies in such contexts are relatively new, predictive tools in warfare have accompanied human history since antiquity. These technologies can be situated within a long historical lineage that demonstrates how the act of future-making has always been fundamental to target acquisition, estimating the success of military undertakings, and justifying military campaigns. For democratic regimes, the stakes are high, since the growing authority of predictive systems can reduce transparency, displace human judgment, and complicate the attribution of responsibility for decisions made in their name.

The parallels between AI predictive tools and traditional divinatory practices have not gone unnoticed by specialists discussing the ethical implications of using such technologies. A common concern is that both can make predictions seem more certain than they actually are. As a result, decisions that are ultimately political or moral may come to appear as straightforward matters of fact.[4] This process occurs through rituals, technical procedures, and discursive practices that confer legitimacy and authority upon the predictions produced.

Despite these parallels, the differences between these systems are equally significant. I argue that

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1 Simon Allison, "The AI-Powered 'Forever Wars' Start Now," *Coda Story*, March 6, 2026, https://www.codastory.com/armed-conflict/the-ai-powered-forever-wars-start-now/.

2 Kevin Baker, "Kill Chain," Substack newsletter, *Artificial Bureaucracy*, March 21, 2026, https://artificialbureaucracy.substack.com/p/kill-chain.

3 Yuval Abraham, "'Lavender': The AI Machine Directing Israel's Bombing Spree in Gaza," +972 Magazine, April 3, 2024, https://www.972mag.com/lavender-ai-israeli-army-gaza/.

4 Carissa Véliz, *Prophecy: Prediction, Power, and the Fight for the Future, from Ancient Oracles to AI*, 1st ed (Knopf Doubleday Publishing Group, 2026)

traditional forms of military divination grounded in non-Western cosmologies—or understanding of the world—sought to align human action with a cosmic order, thereby preserving spaces for interpretation, deliberation, and moral responsibility. Contemporary AI systems, by contrast, operate according to a logic oriented toward accelerating decision-making and automating target acquisition. Stages once associated with human judgment increasingly come to be treated as technical obstacles to be eliminated, while the authority granted to algorithmic systems tends to obscure the political and moral decisions involved in their deployment.

Modern AI warfare constitutes a project for reorganizing how reality is understood and acted upon, aimed at eliminating the friction of reality itself, along with the very possibility of democratic oversight. Whereas non-Western divinatory technologies emerge from a cosmopolitics that is inherently more plural. By approaching these practices not as remnants of the past but as alternatives to a mechanistic, technocratic, and reductionist present, we may draw important lessons for constructing a democratic future that includes humans, our technical systems, and the natural environment.

Traditional divinatory practices as cosmotechnics

Historically, human cultures have used divinatory sciences to justify political power, leadership transitions, and war. Across civilizations, practices such as astrology[5], omen reading[6], and other forms of divination legitimized rulers, informed decisions about warfare, and established auspicious moments for major political and military actions.

Many ancient societies viewed the universe as an interconnected whole in which celestial and terrestrial events reflected one another. Within this framework, human agency depended on the ability to recognize these patterns and adjust behavior accordingly. Divinatory signs were understood as meaningful manifestations of a larger cosmic order, allowing interpreters to infer the state of the whole from a particular event.

Within these cosmologies, it was impossible to separate religious, political, moral, and rational elements. The modern Western distinction between these spheres, encapsulated in the division between “nature” and “culture,” reflects a much later way of understanding the world and does not adequately capture how these practices functioned.

In fact, divinatory practices are quintessential examples of what Yuk Hui defines as cosmotechnics: the unification of a cosmic and moral order through technical activities.[7] The use of tools and technologies, therefore, cannot be separated from their moral order, such that any technical activity — whether building a city or declaring war — may be classified as good or bad depending on its compatibility with the rhythmic temporality of the cosmos. In this modality of cosmotechnics humans are not understood as separate from nature, and divinatory tools enable communication among different elements of reality, ensuring

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5 David W. Pankenier, “Parallel Planetary Astrologies in Medieval China and Inner Asia,” *International Journal of Divination and Prognostication* 1, no. 2 (2020): 157-203, https://doi.org/10.1163/25899201-12340008.

6 V. F. Polcaro et al., “The Gaugamela Battle Eclipse: An Archaeoastronomical Analysis,” *Mediterranean Archaeology and Archaeometry* 8, no. 1 (2008): 55-55.

7 Yuk Hui, *The Question Concerning Technology in China: An Essay in Cosmotechnics*, Third corrected edition, Mono 003 (Urbanomic, 2022).

that human interventions — such as warfare — remain synchronized with the agency and assistance of more-than-human entities, including stars, deities, and spirits.

By separating physical and material elements from any moral dimension, Western worldviews ultimately transform the cosmos into a stock to be measured and exploited.

The moral crisis of AI predictions in warfare

Then, how should we interpret the use of AI targeting systems? They don't represent a mere technical evolution of divination practices but rather a profound disjuncture in how reality and moral judgement are organized.

AI predictive systems employed in warfare can be understood as expressions of a Naturalist worldview, which, unlike traditional practices, reflects a condition of disorientation in which technology is no longer guided by a moral cosmology. Systems such as Lavender, which reportedly generated 37,000 targets with minimal human oversight, replace any meaningful moral evaluation with calculative reason.[8] Such an operation is only possible within a worldview that separates relevant actors into humans and non-humans, attributing to the latter a condition of impersonality and neutrality. Non-humans are not considered susceptible to moral judgment. By delegating the decision to strike a target to an AI system, human actors seek to place a layer of technical mediation between themselves and the violence they authorize, thereby obscuring the basis for moral accountability.

AI systems operate through models designed to compress the kill chain, treating moral evaluation and human deliberation as sources of latency or friction to be eliminated.[9] In this framework, human judgment becomes a rubber stamp for computational outputs already granted epistemic authority, while responsibility is increasingly displaced onto algorithmic infrastructures portrayed as neutral and objective.

By reexamining non-Western divinatory traditions through the framework of cosmotechnics, we can imagine alternative relationships among technology, morality, and the cosmos. Their relevance lies not in claims of superiority or a nostalgic return to premodernity, but in demonstrating that technical systems can be organized around different cosmological and moral principles. This points toward a plural cosmopolitics in which technologies are participants in networks of obligation rather than morally neutral tools. As AI systems are increasingly used for the exercise of violence, engaging with these alternative cosmotechnical imaginaries may be crucial for resisting the reduction of life to calculable resources and for reaffirming democratic deliberation necessary to sustain a shared world.

8 Abraham, "'Lavender.'"

9 Baker, "Kill Chain."

MAPPING DISCOURSES AND DELIBERATION ACROSS SYSTEMS FOR DATA INFRASTRUCTURE GOVERNANCE

Sergio Guillen Grillo
School of Engineering & Applied Science, University of Virginia

The Rising Cloud of Public Data Infrastructure Contestation

The rapid expansion of data infrastructure has introduced a new class of governance challenges at the intersection of environmental sustainability, economic development, technological innovation, and democratic legitimacy. Social contestation around data center development has emerged in places such as Amsterdam, Northern Virginia, and Santiago de Chile, where communities and civil society organizations have mobilized against the environmental and social impacts of hyperscale facilities.[1] Critics highlight the high energy and water demands of data centers, rising utility rates, and localized pollution from backup generators, arguing that these burdens fall disproportionately on host communities.[2] In contrast, proponents argue that data center development has brought economic benefits, including local tax revenues, construction employment, and relatively high wages in technical roles.[3] However, concerns are also growing about how benefits and trade-offs are distributed and about the fragmentation of governance processes across public discourse, expert analysis, and institutional decision-making arenas.[4] This fragmentation reflects a gap between the pace of technological expansion and the capacity to collectively assess impacts and coordinate responses.[5] Addressing this challenge requires a systemic perspective capable of linking how issues are understood to how they are governed. Discursive and deliberative cartographies can contribute to this systemic outlook.

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1 Jochen Monstadt and Katherine Saltzman, "How Data Centers Have Come to Matter: Governing the Spatial and Environmental Footprint of the 'Digital Gateway to Europe," *International Journal of Urban and Regional Research* (2025), https://doi.org/10.1111/1468-2427.13316; Clayton Rosati, Aju James, and Kathryne Metcalf, "Data Plantation: Northern Virginia and the Territorialization of Digital Civilization in 'the Internet Capital of the World,'" *Online Media and Global Communication* 2 (2023): 199-227, https://doi.org/10.1515/omgc-2023-0017; Martin Tironi and Camila Albornoz, "Divergent Futures in a Damaged Territory: The Rise of Data Centers and Water Conflicts in Santiago de Chile," *Journal of Urban Technology* 32 (2025): 51-68, https://doi.org/10.1080/10630732.2025.2546784.

2 Wacuka Ngata et al., "The Cloud Next Door: Investigating the Environmental and Socioeconomic Strain of Datacenters on Local Communities," *Proceedings of the ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies* (2025): 769-774, https://doi.org/10.1145/3715335.3736324; Julia Rone, "The Politics of Data Infrastructures Contestation: Perspectives for Future Research," *Journal of Environmental Media* (2022), https://doi.org/10.1386/jem_00086_1.

3 Nir Kshetri and Jeffrey Voas, "Data Centers in Your Backyard?" *Computer* 57, no. 1 (2024): 82-87, https://doi.org/10.1109/MC.2023.3319882.

4 Lauren Bridges, "Competing Digital Capacities: Between State-Led Digital Governance and Local Data Center Tradeoffs," *Information, Communication & Society* 27 (2024): 1906-1923, https://doi.org/10.1080/1369118x.2024.2331765; Katharina Kausche and Moritz Weiss, "Platform Power and Regulatory Capture in Digital Governance," *Business and Politics* (2024), https://doi.org/10.1017/bap.2024.33.

5 Nathalie Smuha, "From a 'Race to AI' to a 'Race to AI Regulation': Regulatory Competition for Artificial Intelligence," Law, Innovation and Technology 13, no. 1 (2021): 57-84, https://doi.org/10.1080/17579961.2021.1898300.

The Contribution of Discursive and Deliberative Cartographies

Building on deliberative systems theory, I propose two complementary analytical practices: discursive cartography and deliberative cartography.[6] Deliberative systems scholarship conceptualizes democracy as a distributed system of communication and decision-making occurring across multiple interconnected sites, including public spaces, empowered institutions, and informal arenas, linked through processes such as transmission, accountability, and decision-making.[7] Discursive cartography extends this perspective by mapping the narratives, frames, and problem definitions through which issues are understood. It clarifies what actors mean when they refer to a phenomenon (e.g., "data infrastructure") and makes visible the assumptions and values embedded in those meanings.[8] Deliberative cartography, in turn, maps the pathways through which these discourses move across deliberative systems. It identifies where communication occurs, how claims travel between sites, and whether they shape outcomes. In this way, it operationalizes key deliberative systems processes such as transmission, accountability, and decisiveness.[9] Together, these cartographic practices provide a practical means of tracing both the formation of public meaning and its translation into governance outcomes.

Systems, Cartographies, and Data Infrastructure Governance

To situate these cartographic tools, deliberative systems theory offers several complementary frameworks that analyze how communication and decision-making are organized. Building on Bächtiger and Parkinson's analysis, I have highlighted elsewhere four relevant approaches: the sequenced-sites approach, which examines how deliberative functions unfold across times and venues; the deliberative capacity approach, which focuses on communication, contestation, and decision-making across informal "public" and bounded "empowered" space, and their transmission and effect on system-level inclusion, authenticity, and consequential impact; the deliberative networks approach, which highlights structural relationships among institutions; and interpretive approaches, which foreground lived experience and meaning-making.[10]

Discursive and deliberative cartography do not replace these frameworks; rather, they operate across them as integrative analytical tools. Discursive cartography aligns with the narrative and meaning-centered elements found in interpretive capacity approaches, while deliberative cartography draws on sequencing and transmission to trace how interactions and practices

6 Sergio Guillen Grillo, "Exploring Discursive and Deliberative Cartographies for AI and Environmental Justice," in *Reimagining AI for Environmental Justice and Creativity*, ed. Jess Reia, M. C. Forelle, and Yingchong Wang (Charlottesville: Digital Technology for Democracy Lab, University of Virginia, 2025), 125-128. https://doi.org/10.18130/03df-zn30

7 John S. Dryzek, "Democratization as Deliberative Capacity Building," Comparative Political Studies 42, no. 11 (2009): 1379-402, https://doi.org/10.1177/0010414009332129; John Parkinson and Jane Mansbridge, eds., Deliberative Systems: Deliberative Democracy at the Large Scale (Cambridge: Cambridge University Press, 2012).

8 John S. Dryzek, Politics of the Earth, 4th ed. (Oxford: Oxford University Press, 2022); Guillen Grillo, "Exploring Discursive and Deliberative Cartographies."

9 John Parkinson, "Deliberative Systems," in The Oxford Handbook of Deliberative Democracy, ed. André Bächtiger, John S. Dryzek, Jane Mansbridge, and Mark E. Warren (Oxford: Oxford University Press, 2018).

10 André Bächtiger and John Parkinson, Mapping and Measuring Deliberation: Towards a New Deliberative Quality (Oxford: Oxford University Press, 2019); Sergio Guillen Grillo, "How Social Movements Engage with Public Deliberation: A Multifaceted Approach" (PhD diss., Australian National University, 2022), http://hdl.handle.net/1885/278399/

influence decisions. For data infrastructure governance, this integration helps shift attention from isolated decision points—such as zoning hearings—to the broader system through which narratives emerge, circulate, and shape outcomes.

Illustrative Case: Biotechnology Governance in Costa Rica

A useful example of these cartographic practices on the ground comes from biotechnology governance in Costa Rica, where the Movement Against Transgenics (MaT) engaged with a technocratically dominated biotechnology governance system.[11] Discursive cartography highlights how the movement reframed Genetically Modified Organisms (GMOs) from a narrow technical issue into broader concerns about food sovereignty, biodiversity, cultural heritage, and corporate power. These narratives were developed through activist research, public education, media engagement, and cultural practices, linking local experiences to global critiques of agricultural governance. Through deliberative cartography, these discourses can be tracked across a distributed system of sites. MaT operated in public spaces (protests, media debates, community events), empowered spaces (municipal councils, courts, biosafety commissions), and internal spaces of coordination. These interactions shaped the transmission of grassroots claims into institutional arenas, contributing to outcomes such as multiple declarations of "GMO-free" Municipalities, which however, had very limited impact on policies at the national scale. The case also reveals tensions between pathways of influence. Efforts to scale engagement rapidly through coordinated lobbying sometimes diverged from slower, context-sensitive processes of grassroots deliberation and capacity-building. This highlights how different deliberative pathways can produce different democratic qualities, even within the same coordinated movement.

Implications for Data Center Governance

Applied to data infrastructure governance, these cartographic practices provide a practical framework for addressing fragmentation. Discursively, this involves mapping competing narratives, such as data centers framed as engines of economic growth, sources of environmental strain, or critical infrastructure. Deliberatively, it involves identifying where these debates occur, which perspectives are incorporated, how claims move across sites, and whether they shape binding decisions. This approach enables a systemic assessment of deliberative capacity, particularly inclusion, authenticity, and consequentiality, by examining whether diverse perspectives are recognized and whether deliberation influences outcomes.[12]

Conclusion

Discursive and deliberative cartographies offer practical avenues for operationalizing deliberative systems theory by linking meaning-making and decision-making across sites. The Costa Rican MaT case illustrates how these tools can illuminate both the construction of public issues and the pathways through which they influence governance outcomes. Applied to data infrastructure governance, this approach offers a way to make systems more legible, diagnose gaps, and support more inclusive and accountable decision-making.

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11 Sergio Guillén Grillo, "How Social Movements Engage with Public Deliberation: A Multifaceted Approach" (PhD Thesis, The Australian National University (Australia), 2022), https://openresearch-repository.anu.edu.au/items/df8039aa-2d82-41d6-a66c-5c4847ebedd1.

12 Hayley Stevenson and John S. Dryzek, *Democratizing Global Climate Governance* (Cambridge: Cambridge University Press, 2014).

WHITEBOXING

Rafael C. Alvarado
School of Data Science, University of Virginia

In 2018, Apple ran a TV ad featuring a girl in her early teens riding a bike around her neighborhood with an iPad.[1] The ad shows her using it to chat with friends, take photos, do homework, draw pictures, and read comic books. At the end, a neighbor asks "Whatcha doing on your computer?" to which the girl responds nonchalantly, "What's a computer?"

The response it drew was largely one of outrage at the depiction of a girl ignorant of what a computer is, as well as the suggestion that we are past having to know what a computer is.[2] It is clear, though, that Apple's point was to convey the idea that the iPad, like all Apple products since the late 1970s, is designed to appear natural and uncomplicated, in the manner of an appliance. The ad was meant to show that the iPad integrates quietly and gracefully into everyday activities, not to evoke gee whiz wonder at the fact that the child possesses in her hand the most sophisticated kind of machinery ever invented.

I call Apple's practice of sublimating computational complexity by means of Zen-like simplicity of design whiteboxing. To whitebox something is to envelop a complex and potentially threatening technology in an attractive skin—an inviting exterior that acts both as an interface to its internal mechanisms and as a deflector of attention away from any concern with them. As Sherry Turkle wrote in 1995 about the first Macintosh, "Apple encouraged users to stay at a surface level of visual representation and give no hint of inner mechanisms."[3] Apple has applied this aesthetic to all aspects of its products—from software to hardware to the iconic white boxes in which its products ship.

The expression whiteboxing is meant as a playful inversion of the term black box, used by scientists and engineers to describe a system purely in terms of its inputs and outputs, without knowledge of its internal workings. In the metaphor, black symbolizes an opacity managed for practical reasons but always subject to downstream inspection. With whiteboxing, concern with—even an awareness of—that opacity goes away entirely. Whiteboxed technologies resist interrogation; instead, they invite integration: the unquestioning, open-ended, and exploratory application of the tool to meet the many needs and desires that arise in everyday life. Call it the integration imperative—the push to have a product used as widely and deeply as possible.

In the early 2000s, Google adopted Apple's whiteboxing aesthetic. The minimalist search box sitting in the center of a mostly blank white page performed the same work as Apple's interfaces: it told the user not to wonder about how information is organized on the web. It trained users to regard searching a global network of networks as a quotidian act that could be applied to a

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1 Apple, "iPad Pro — What's a Computer?," YouTube video, 2018, https://www.youtube.com/watch?v=3S5BLs51yDQ.

2 Raisa Bruner, "The Internet Sounds Off about Apple's iPad Commercial," *Time*, January 26, 2018, https://time.com/5120364/apple-ipad-ad-reactions/.

3 Sherry Turkle, *Life on the Screen: Identity in the Age of the Internet* (New York: Simon and Schuster, 1995).

multitude of activities, from ego-surfing to diagnosing an illness. In contrast to Yahoo! (Yet Another Hierarchically Organized Ontology), Google, like Apple, gave no hint of inner mechanisms.

When ChatGPT burst onto the scene in November 2022, OpenAI employed the same aesthetic. Sitting at the front end of a technology so powerful it has been touted as the foundation for a new industrial revolution, ChatGPT presented the user with an interface almost identical to Google's, and with the same imperative: Don't worry about how this works—don't even think about it. Just use it, in as many ways as you can imagine. The same aesthetic has been adopted by Claude, Gemini, and other commercial LLM products.

Apple's design philosophy deserves praise for its role in democratizing computational technology. But in the context of AI products, in which the integration imperative has propelled them to intermediate every aspect of our social lives, the whiteboxing aesthetic should cause concern. Whiteboxing doesn't just deflect attention from inner workings. It promotes the false idea that AI technologies are bounded and isolated entities in the first place, like coffee machines or cars, and therefore frameable in the language of safety and alignment. In reality, as Davis and Sloane argue, AI "is a social structure."[4] Every integration of the tool into our daily practice connects us to a vast network of human labor, knowledge, machinery, energy, and material resources in real time. This network is maintained and directed by other people, who stand in an asymmetric relation to users. The proper frame for regulating it is political economy, not engineering.

Whiteboxing causes users to misrecognize a social reality for an individual experience. Instead of whiteboxing AI, we should be outboxing it—forcing users to interact with AI agents not as pseudo-humans whose behaviors align with our ethical and aesthetic biases, but as social systems with special interests and effects on other systems, including democracy itself. The more we present AIs to users according to the logic of "don't make me think"—Krug's apt distillation of the aesthetic[5]—the more we allow them to transform our social orders into more perfect versions of Weber's iron cage.

4 Jenny L. Davis and Mona Sloane, "AI's Sociological Era," *Social Science Computer Review* 44, no. 1 (2026): 3-9, https://doi.org/10.1177/08944393251394690.

5 Steve Krug, *Don't Make Me Think! A Common Sense Approach to Web Usability* (Indianapolis: New Riders, 2000).

2.RECOGNIZING THE LIMITS OF INFRASTRUCTURE

THE UBIQUITY AND LIMITS OF DIGITAL TECHNOLOGY IN LOCAL CIVIC ENGAGEMENT

Steven L. Johnson
and Matthew Gillikin
Livable Cville

The iconic 1943 Norman Rockwell painting, Freedom of Speech[1] depicts an idealized moment of participatory democracy in the United States: a working-class man speaking out at an annual town budget meeting, capturing the attention of well-dressed audience members sitting nearby. While moments like these still exist in contemporary US politics, they are far less central in our digital age. Even here in Charlottesville—a city of ten square miles and about 50,000 residents—local civic engagement is strongly shaped by global digital communication platforms. Despite being a politically active community by most measures, the average city resident finds it difficult to know when and how to effectively voice their opinions about city affairs. The building blocks of local advocacy—finding information about when, where, and how to voice your opinions; connecting with others to amplify your voice; and mobilizing community members to action—are all complicated by the reliance on digital technology as a ubiquitous method of communication.

Digital technology shapes how to find information

Before speaking in person at a town budget meeting, a concerned resident needs to find out where, when, and how to make a public comment. When seeking to weigh in on a topic they care about—such as school funding, sidewalk gaps, or public safety—it can be challenging to identify the proper landing spot for an email or phone call. Decades ago, when city government approached controversial decisions, most people could count on one or more local news outlets—newspapers, TV, radio, and alt-weeklies—to keep interested residents informed. As local news has been hollowed out by the transition from local advertising-supported news sources to global digital advertising platforms, basic information about opportunities for effective civic engagement has become hard to find.[2]

One source of information is local government websites. However, municipalities facing the daunting challenge of creating and maintaining public-facing websites, typically turn to content management systems (CMS) available from a handful of technology vendors. Across the diverse set of information a locality presents to the public, specific items like meeting agendas, budget documents, and key reports are, in our experience, exceedingly difficult to locate.

Another source of information is advocacy groups like Livable Cville, the all-volunteer organization we co-chair. Yet, even our committed volunteers interested in land use, mobility, and climate action find it hard to stay up-to-date on what is happening in local government, often falling back on direct communication with city leaders and staff to ensure we are

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1 Norman Rockwell, Freedom of Speech, 1943, oil on canvas, Norman Rockwell Museum, Stockbridge, MA. First published in The Saturday Evening Post, February 20, 1943, with an accompanying essay by Booth Tarkington. The image is most widely reproduced from the U.S. Office of War Information poster "Save Freedom of Speech: Buy War Bonds" (1943), National Archives and Records Administration, NARA Identifier 513536, https://catalog.archives.gov/id/513536.

2 Penelope Muse Abernathy, *News Deserts and Ghost Newspapers: Will Local News Survive?* (UNC Center for Innovation and Sustainability in Local Media, 2020).

understand issues, timelines, and logistics correctly before messaging a larger audience. In other words, it often requires working around technology to gather accurate information.

Digital technology shapes how to organize and advocate

Effective local organizing has always relied on making personal connections. Whereas decades ago, there were more formal civic organizations and informal third places to engage with friends, co-workers, and neighbors, today many people both expect and welcome communication via digital technology—through websites, email-based newsletters, social media, and messaging apps. These platforms enable lower-cost mass communication, yet come with real limitations.

Even a simple email-based newsletter requires a mailing list with subscribe and unsubscribe options. Whether or not an intended recipient sees an email—even one they explicitly opted-into—is at the mercy of email providers spam and prioritization filters. Similar barriers exist on social media channels and text messaging services—with the further collective action challenge of coalescing on a manageable number of platforms among the many options where your target audience may be found.

Even when organizers have information that is welcomed by interested residents, effectively communicating it is heavily influenced by global platforms optimized for virtual engagement, not for effective organizing. As the options for easily sharing information have increased, so too has the difficulty of cutting through a near-constant onslaught of digital information and stimuli to connect with our interested audience.[3]

Digital technologies have made it easier than ever to communicate across barriers of time and space. As such, we would expect that technologic advances in the decades since the Rockwell painting would also reduce barriers to civic engagement. We contend, however, that due to how digital technology is currently integrated into society, it makes it harder to know where, when, and how to make a public comment. In this way, platforms can be viewed as often undermining, rather than supporting, local civic participation. Reclaiming local civic participation will require demanding more from the platforms mediating information discovery and dissemination.[4]

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3 See: Cory Doctorow, *Enshittification: Why Everything Suddenly Got Worse and What to Do about It* (Verso, 2025).

4 Langdon Winner, "Do Artifacts Have Politics?," *Daedalus* 109, no. 1 (1980): 121-36; Brent Kitchens, Steven L. Johnson, and Peter Gray, "Understanding Echo Chambers and Filter Bubbles: The Impact of Social Media on Diversification and Partisan Shifts in News Consumption," *MIS Quarterly* 44, no. 4 (2020): 1619-49.

IS CELESTIAL RESISTANCE POSSIBLE?

Aaron Martin
School of Data Science, University of Virginia

Quito Tsui
Environmental Social Sciences, Stanford University

What was originally a laughable idea—deploying data centers in space—appears to be a less ludicrous proposition these days. Elon Musk and Jeff Bezos are both intent on pursuing the development of technology for orbital data centers through their companies SpaceX and Blue Origin, respectively.[1] Google, too, has launched its Project Suncatcher.[2] These ventures seek to capitalize on the perceived limitlessness of the heavens to drive increasingly zealous AI ambitions.

Why is space so attractive to AI companies and their data infrastructure needs? For one, the prospect of free and unlimited solar power is a huge draw, especially as the energy requirements of data centers continue to raise concerns.[3] In its January 2026 filing to the U.S. Federal Communications Commission, SpaceX emphasized the "transformative" potential of "directly harnessing near-constant solar power with little operating or maintenance cost". It also stressed the environmental advantages of these satellites over terrestrial sites.[4]

The passive cooling that space provides is also appealing given how much heat is generated by data centers, though experts argue that it would be difficult for heat to dissipate in a vacuum like space. As well, developers argue that the apparent abundance of space in orbit means that the physical constraints of terrestrial builds are no longer relevant. More pertinently perhaps, space-based data centers might have the escape velocity to evade the local politics that attend construction projects and the growing resistance to data centers here on Earth.

Could space be the next frontier for data center development? While experts have serious doubts about the feasibility of these plans, the prospect raises hard questions about the possibilities for social organizing and resistance to AI infrastructure projects. Is celestial resistance possible?

Tech companies are facing some of their strongest headwinds yet as broad-based resistance to data centers has begun to gain traction globally. In the U.S, research group Data Center Watch has mapped $156 billion of blocked or stalled investments across 48 projects as a result of coordinated local opposition in 2025.[5] This public pushback is translating into a new wave of political and legal resistance including a proposed federal moratorium advanced by Bernie Sanders and Alexandria Ocasio-Cortez, the potential elimination of lucrative tax breaks in

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1 Micah Maidenberg and Merrill Sherman, "Data Centers in Space: A Pipe Dream, or AI's Next Big Thing?" *The Wall Street Journal,* May 12, 2026, https://www.wsj.com/tech/ai/data-centers-in-space-a-pipe-dream-or-ais-next-big-thing-c13bb184/.

2 Travis Beals, "Exploring a space-based, scalable AI infrastructure system design," *Google Research*, November 4, 2025, https://research.google/blog/exploring-a-space-based-scalable-ai-infrastructure-system-design/

3 Ketan Joshi, *The AI Climate Hoax: Behind the Curtain of How Big Tech Greenwashes Impacts* (Friends of the Earth, 2026).

4 Jeff Foust, "SpaceX Files Plans for Million-Satellite Orbital Data Center Constellation," *SpaceNews*, January 31, 2026, https://spacenews.com/spacex-files-plans-for-million-satellite-orbital-data-center-constellation/.

5 Lydia DePillis, "Local Opposition Is Slowing A.I. Data Centers. Wall Street Has Noticed," *The New York Times*, March 26, 2026, https://www.nytimes.com/2026/03/26/business/economy/ai-data-centers-construction-local-opposition.html.

Virginia (the data center capital of the world), and restrictions on permitting across the country. Outside the U.S., similar movements have emerged in Chile, Ireland, and Mexico to contest the energy and environmental impacts of these projects.[6]

For the U.S, the coalition-based objection to data centers contrasts sharply with a wider political climate marked by apathy and, in some cases, enmity. What marks these efforts as especially unusual is their frequently cross-cutting nature—an expression of shared democratic will many argue is rooted in the material nature of data centers. Unlike less tangible forms of digital incursion (surveillance, facial recognition, digital identity and the like), data centers have palpable impacts that communities directly experience: rising utility bills, negative consequences on property values, and the noxious effects of air, noise, and water pollution. Meanwhile promises of a job boom have failed to manifest, leaving little to show for the material fallout of data center operations. This visceral experience has made the calculus of the generative AI boom concrete.

Though not all of this resistance can be read through the lens of AI skepticism, anti-AI sentiment is growing. Community refusal is beginning to extend beyond the proximate impacts of data center development, and towards a consideration of the applications they power. Communities are starting to connect their local data centers to the sprawling ecosystems that these tools are embedded within. When Ypsilanti Township in Michigan says 'no' to hosting a data center that will power nuclear research at Los Alamos,[7] they are spurning more than just the bad economic or environmental deal—they are also surfacing moral, ethical and even existential concerns.

Can these social justice movements then be sustained when the energy needs of space-based data centers no longer hurt our utility bills in the same way as their terrestrial counterparts? Will earthly publics become indifferent to infrastructural politics once data centers are put into orbit? While environmental and scientific groups have started to petition the FCC to halt the processing of orbital data center applications on the grounds that the agency must first conduct a thorough environmental review before moving forward with licenses,[8] the apparent disappearance of the "local" continues to pose pressing questions of the social organizing behind ongoing resistance movements. And resistance movements need to find answers: the desire for space-based data centers is evocative of a wider shift in power—one that relocates agency away from people and toward the tech sector.

Whether or not data centers make it to space, the possibility itself exposes the limitations of resistance hinged only on local material experience. A wider and deeper movement is needed to ensure local data center resistance does not merely transfer harm to communities less equipped to protest. The current moment gives vital impetus to the possibilities for a critical consciousness to take root, and ensure that, if need be, mobilization from below can reach the heights of orbit.[9]

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6 Diego Mendoza, "Google Bows to Pressure on Data Center in Chile," *Semafor*, September 17, 2024, https://www.semafor.com/article/09/17/2024/google-bows-to-pressure-in-chile; Paul Mozur et al., "From Mexico to Ireland, Fury Mounts Over a Global A.I. Frenzy," *The New York Times*, October 20, 2025, https://www.nytimes.com/2025/10/20/technology/ai-data-center-backlash-mexico-ireland.html; Pablo Medina Uribe et al., "Many Latin Americans Living Near Data Centers Don't Feel Welcome in the Future," *Tech Policy Press*, September 12, 2025, https://techpolicy.press/many-latin-americans-living-near-data-centers-do-not-feel-welcome-in-the-future.

7 Matthew Gault, "Community Votes to Deny Water to Nuclear Weapons Data Center," *404 Media*, April 23, 2026, https://www.404media.co/community-votes-to-deny-water-to-nuclear-weapons-data-center/.

8 Jason Rainbow, "Environmental Groups Urge FCC to Pause Orbital Data Center Applications," Space News, July 9, 2026, https://spacenews.com/environmental-groups-seek-fcc-pause-on-orbital-data-center-constellations/.

9 An earlier version of this article was published as: Quito Tsui and Aaron Martin, "The Earthly Limits of Data Centre Resistance," *Internet Policy Review,* June 10, 2026, https://policyreview.info/articles/news/data-centre-resistance/2102.

THE UNEQUAL COSTS OF DISINFORMATION

David Nemer
Department of Media Studies, University of Virginia

In the heart of Vitória, Brazil, a group of favelas known as the Território do Bem—the Territory of Good—offers an essential lesson for anyone trying to understand digital democracy today. The name itself, chosen by residents, is an act of resistance: a reclaiming of dignity in a city that too often sees these communities through the lens of violence, deprivation, or neglect. It is also the setting of a participatory study I conducted with the Calango Lab team[1] to understand how technology shapes information access and exposure to disinformation in marginalized areas. What we found is both local and global: the disinformation crisis hits hardest where inequality already structures everyday life.

The central problem is not that marginalized communities are more vulnerable because they are less informed or less critical. On the contrary, our research shows that residents are acutely aware of the problems surrounding digital platforms. The real issue is structural. People are navigating an online environment designed around limitations, not freedom. Nearly all respondents in our study access the internet through smartphones, but most do so under constrained mobile data plans that restrict where they can go, what they can read, and how easily they can verify information. In practice, this means that for many residents, the internet is not an open public sphere, but a narrow corridor dominated by a handful of corporate platforms.

The problem is the way connectivity is structured. Telecom companies market zero-rating plans[2] as inclusion, offering "free" access to apps like WhatsApp or Facebook without counting against users' data. But what looks like access is, in reality, containment. It keeps people inside walled gardens where information circulates stripped of context, source attribution, or meaningful opportunities for verification. For example, when a message arrives via WhatsApp, it is often forwarded without links, authorship information, or other indicators that would help users assess its credibility. Verifying the claim may require opening external websites, consulting multiple news sources, or accessing fact-checking services; all activities that consume data and may be inaccessible to users with limited connectivity. In places like the Território do Bem, Meta's platforms are not simply popular; they are often the main infrastructure through which people experience the internet. The result is a digital environment where corporate design shapes what is visible, what is believable, and what remains out of reach.

Yet residents are far from passive. One of the most striking findings of our research is how clearly people recognize disinformation as a problem.[3] Most respondents believe social media platforms promote false or misleading content. Many also say they trust traditional journalistic

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1 David Nemer, Andre Vinicius Leal Sobral, and Luísa Cardoso Dias, *Technology and Disinformation in the Território do Bem* (Editora Milfontes, 2025), ISBN 978-65-5389-112-8.

2 Zero-rating plans are mobile internet packages that provide free access to selected apps or websites while restricting broader internet use through data limits on all other online services. On zero-rating in Brazil, see Jeffrey Omari, "Is Facebook the Internet? Ethnographic Perspectives on Open Internet Governance in Brazil," Law & Social Inquiry 45, no. 4 (2020): 1093-1112.

3 Nemer, Sobral, and Cardoso Dias, *Technology and Disinformation in the Território do Bem.*

sources more than what they encounter online. But here lies the paradox: even when people distrust social media platforms, they still depend on it for news and local updates. This reflects the realities of how internet access is structured in marginalized communities. Many residents rely on limited mobile data plans, making it difficult or costly to browse multiple websites, read full news articles, or access fact-checking services. As a result, social media platforms often become the most accessible, and sometimes the only practical source of information. In these circumstances, the ability to verify information is constrained not by a lack of critical awareness, but by unequal access to digital resources.

The consequences of disinformation in marginalized communities are never merely symbolic. False rumors about violence, health, politics, or public safety can lead people to miss work, avoid school, cancel medical appointments, or withdraw from public life. In wealthier settings, misinformation may be treated as an inconvenience or an abstract threat to democratic norms. In the periphery, it can quickly become a matter of income, food security, bodily safety, and survival. For families already living under conditions of precarity, the costs of being misled are immediate and severe.

This is why we need to stop framing disinformation primarily as a problem of individual responsibility. Of course, people should be encouraged to verify what they read and share. But critical thinking alone cannot solve a problem rooted in unequal access, monopolized infrastructures, and platform power. It is unreasonable to expect users to bear the full burden of verification when the systems they rely on are optimized for virality, opacity, and engagement rather than public interest.[4] When platforms profit from confusion while users shoulder the social costs, responsibility has been profoundly misallocated.

A democratic response must therefore be structural. Regulation is not optional; it is urgent. In places like the Território do Bem, the absence of regulation does not protect freedom of expression. It protects the freedom of large corporations to extract data, dominate communication, and evade accountability while marginalized communities absorb the damage. Public policy must expand meaningful internet access beyond zero-rating plans and support alternative information infrastructures that are rooted in the communities they serve. Projects like Calango News, the community news agency that is also part of Calango Lab, help build informational ecosystems that are accountable to residents rather than to advertising models.[5]

What is happening in the Território do Bem is not an isolated case. Similar dynamics can be found in favelas across Brazil, townships in South Africa, informal settlements in India, and low-income neighborhoods elsewhere. The same platforms recur. So do the patterns of exclusion and harm. If digital democracy is to mean anything, it must begin by taking these realities seriously. From the perspective of marginalized communities, the disinformation crisis is not primarily a problem of individual behavior. It is a consequence of unequal access, concentrated platform power, and digital infrastructures that leave people with few meaningful alternatives. Until these structural conditions are addressed, disinformation will continue to deepen existing inequalities, affecting not only what people know, but also whether they feel safe going to work, sending their children to school, seeking medical care, or participating in democratic life.

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4 Smitha Milli et al., “Engagement, User Satisfaction, and the Amplification of Divisive Content on Social Media,” PNAS Nexus 4, no. 3 (2025): pgaf062, https://doi.org/10.1093/pnasnexus/pgaf062.

5 Calango Notícias (Calango News) is a community newspaper produced in and for the Território do Bem. https://calangonoticias.com.br/

WHAT THE DIGITAL DIVIDE MEANS FOR NONPROFIT SOCIAL SERVICES

Brianne Anderson
ReadyKids

Nonprofit organizations in the social sector increasingly help bridge the digital divide—the societal gap in digital access, affordability, and literacy—as intermediaries between marginalized populations and the digital systems shaping our democracy. But nonprofits are expected to deliver services, advocate for vulnerable communities, and promote digital access or literacy, while themselves remaining ill-equipped to keep pace with updated uses of technology and the advancement of AI. Challenges to increase digital capacity are then complicated by the mistrust of technology among marginalized communities they serve.[1] In this way, vulnerable populations could be excluded by the systems themselves then doubly excluded societally or by their own hesitance to participate. If the goal is equitable digital democracy, nonprofits must lead the push for digital participation by investing more in technology and digital adoption that protects data and centers the experiences of marginalized populations.

Digital deficits among nonprofit organizations

As technology has continued advancing rapidly, the lack of digital infrastructure in certain spaces has become more glaring. Nonprofit funders do not often designate funds for in-house technology. As unrestricted funds decrease, organizations are forced to use general operating funds to increase digital adoption.[2] The pressure to keep overhead costs low leads nonprofits to spend most allocated technology funds on hardware, leaving little for updated software, experienced staff, and training. Without adequate funding and ongoing support, organizations rely on outdated software or patchwork solutions as problems arise. This creates a weak foundation moving forward, limiting the ability to adapt to the constantly evolving circumstances nonprofits face.

But an organization's ability to build a long-term technology strategy boosts community impact. Organizations that invest in digital infrastructure are four times more likely to achieve their mission goals.[3] Furthermore, digitally mature organizations report improved program and service delivery, greater organizational capacity, and increased financial stability.[4] Greater community reach builds a critical pathway for more civic engagement and digital participation.

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1 Bridgespan Group, "Closing the Nonprofit Funding Gap in the Age of AI," 2025, https://www.bridgespan.org/insights/closing-the-nonprofit-funding-gap-in-the-age-of-ai.

2 NTEN, "Nonprofit Technology Funding," 2024, https://www.nten.org/blog/nonprofit-technology-funding; David Bowman et al., "ho Feels Pressure to Contain Overhead Costs?" Nonprofit and Voluntary Sector Quarterly (2016), https://www.researchgate.net/publication/309352810.

3 NTEN, 2024 Nonprofit Digital Investments Report (2024), https://word.nten.org/wp-content/uploads/2024/04/2024-Nonprofit-Digital-Investments-Report.pdf.

4 Salesforce, Nonprofit Trends Report, 7th ed. (2025), https://www.salesforce.com/en-us/wp-content/uploads/sites/4/2025/05/s-org-7th-edition-nonprofit-trends-report-2025.pdf

Target populations facing the digital divide

However, even when nonprofits strengthen their digital infrastructure, many communities continue to face substantial barriers to digital access. Rural residents, low-income households, and older adults are less likely to have computer or internet access. These pathways have become increasingly necessary to connect with government services, goods, and other community members. Existing barriers to access can be compounded by digital literacy gaps, making it difficult for community members to confidently navigate digital tools. Additionally, digital platforms often lack accessibility options or support for multilingual users.[5] Without the ability to meaningfully engage through digital platforms, existing inequalities continue to be reinforced.

Widespread mistrust of technology

Beyond infrastructure, access, and literacy, a deeper challenge emerges: widespread mistrust of technology driven by a history of discriminatory practices. Many digital tools require users to provide personal information which can then be used in a variety of harmful ways. The companies collecting the data provide little transparency, little user control, and ask users to accept privacy policies that are too long and legally complex for the average user to understand.[6] Technological advancements have been largely shaped by a tech workforce comprised of mostly white males. Female, Black, and Hispanic workers have been substantially underrepresented with little change between 2002 and 2025.[7] The result is digital redlining through surveillance, algorithmic bias, and consumer manipulation. Ongoing harmful practices are likely to continue without increased representation that reflects the wider population.[8]

Facing the future

If we want to build a path towards digital democracy including nonprofits and marginalized populations, we must face each of these challenges head on. Funders must recognize that both technology support and resources are a necessity, especially as AI reshapes every sector.[9] Nonprofits, for their part, must invest in digital infrastructure and specialized staff who can shape their digital strategy, and set up successful digital tools that give users increased data autonomy and control over their digital footprint. These organizations can then begin to remove barriers—accommodating users with different language needs and helping increase digital access in their communities. Nonprofits should maintain clear data privacy policies, and across the sector, there must be a concerted effort to push lawmakers for regulations and oversight that increase accountability and transparency, removing "black box" systems that keep users in the dark. With each step forward, we should aim to strengthen trust and boost confidence in underserved communities, so the digital landscape moving forward can represent all groups equitably.

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5 NTEN, Equity Guide for Nonprofit Technology (2020), https://word.nten.org/wp-content/uploads/2021/07/NTEN-Equity-Guide-for-Nonprofit-Technology_September_2020_v2.pdf.

6 Cisco, Data Transparency's Essential Role in Building Customer Trust: Cisco 2022 Consumer Privacy Survey (Cisco Systems, 2022), https://www.cisco.com/c/dam/en_us/about/doing_business/trust-center/docs/cisco-consumer-privacy-survey-2022.pdf.

7 US Equal Employment Opportunity Commission, "EEOC Research Finds Unequal Opportunity in High-Tech Sector and Workforce," https://www.eeoc.gov/newsroom/eeoc-research-finds-unequal-opportunity-high-tech-sector-and-workforce.

8 US Government Accountability Office, Science & Tech Spotlight: Facial Recognition Technology (GAO-22-106096, 2022), https://www.gao.gov/products/gao-22-106096; "Tech Optimism Collides with Public Skepticism over FRT, AI in Policing," Biometric Update, May 2025, https://www.biometricupdate.com/202505/tech-optimism-collides-with-public-skepticism-over-frt-ai-in-policing.

9 Chronicle of Philanthropy, "Tech Survey," 2024, https://www.philanthropy.com/nonprofit-technology-survey/

SALAMANDERS, NOT GERRYMANDERS!

USE WATERSHEDS TO DEFINE VOTING DISTRICTS

Spencer Phillips
Global Studies, University of Virginia

In the weeks that passed whilst composing and editing this essay, Virginia voters, following California's lead, approved a politically gerrymandered congressional voting district map that will favor Democratic candidates.[1] The United States Supreme Court rendered Section 2 of the Voting Rights Act, which had prevented states from drawing congressional districts in ways that dilute the votes of racial and ethnic minorities, effectively unenforceable. Days later, Tennessee redrew its congressional districts to eliminate the state's one Democratic district, which is 2/3 Black.[2] Considering these events, it certainly feels like the right time to reimagine the Congressional redistricting process.

Gerrymandering—drawing congressional district boundaries to favor one party, entrench incumbents, or dilute the voting strength of specific communities—is as old as American politics. Virginia, for instance, has a long history of legal battles over racially and politically gerrymandered maps.[3] Here and elsewhere, the practice is associated with an erosion of public trust in elections and other public processes.[4] It is hard to imagine that the outcome of the recent referendum, or the partisan manipulations of voting maps underway in Texas, California, Missouri, Ohio, and North Carolina,[5] will improve the situation.

But what if there were a truly neutral basis for congressional (and state legislative) districting, one that uses naturally occurring boundaries that reflect something voters across the political spectrum have in common: water. This is where watersheds[6] come in. A watershed is a naturally defined area of land where all water drains to a common point, linking communities through a shared reliance on water resources for drinking, irrigation, industrial processes like cooling data center equipment, aesthetics, and recreation. Watersheds bind together farmers and fishers, real estate developers and recreationists, and people of all races, ethnicities, and beliefs. This inherent interdependence makes watersheds a valid "community of interest," which is a crucial consideration in redistricting criteria. Grouping voters based on the water they share would

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1 Certification of the Virginia referendum result is currently on hold due to a court ruling in Tazewell County.

2 George Chidi, "'This Is Not Democracy': Voting Rights Activists Shocked by Speed of US States Moving to Stifle Black Voters," *The Guardian*, May 8, 2026, https://www.theguardian.com/us-news/2026/may/08/voting-rights-activists-louisiana-callais-black-voters.

3 See, for example: Geoffrey Skelley, "Virginia's Redistricting History: What's Past Is Prologue," *Sabato's Crystal Ball*, June 18, 2015, https://centerforpolitics.org/crystalball/virginias-redistricting-history-whats-past-is-prologue/.

4 Shaun Bowler and Todd Donovan, "Corruption, Gerrymandering and Perceptions of Election Integrity: Is There More to Confidence Than Partisanship?," *American Politics Research* 53, no. 6 (2025): 547-58, https://doi.org/10.1177/1532673X251352552.

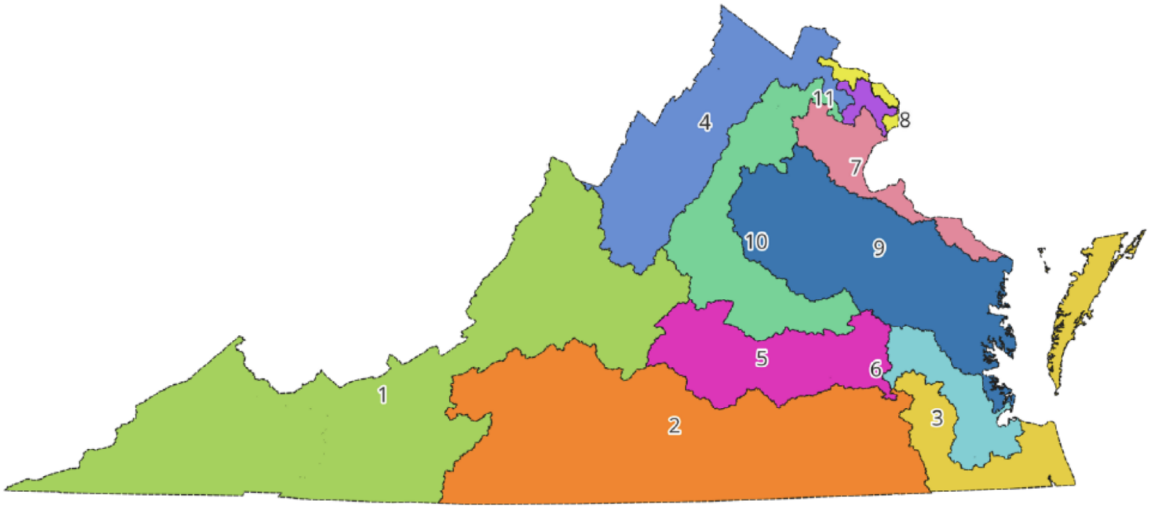
5 In Utah, a court-ordered redistricting could benefit Democrats, but the new map was not specifically drawn to achieve that effect. In several other states, mid-decade redistricting efforts have been rejected by state legislators, courts, or voters.

6 Technically, watersheds are one type among several nested "hydrological units" ranging from sub-watersheds at the small end, through watersheds, then sub-basins, and basins. Subregions and regions are still larger units, but they encompass populations far larger than any congressional district and are not relevant here.

create districts that are geographically cohesive and foster collective interest in improved environmental governance.

A novel study piloted this concept using Virginia as a hypothetical case. Ben Nilson, in his 2024 Global Sustainability capstone thesis at the University of Virginia, combined digital watershed maps with Census block boundaries and population.[7] Crucially, districts were drawn blind to racial composition and political affiliation. The only considerations were watershed boundaries—that is, keeping voters in the same Congressional district as other voters in the same hydrological unit—and the standard requirements that districts be roughly equal in population (~784,672 persons, or one-eleventh of the population of the Commonwealth), compact, and contiguous.

Figure: Sample congressional district map for Virginia, based on watersheds



The results were compelling. Despite the blind process, the proposed map led to the creation of four majority-minority districts, concentrating populations of minority residents. Furthermore, an analysis of likely voting trends suggested an expansion of Democrat control in Virginia, shifting the state from a (then) 4 Republican/7 Democrat split to 2 Republican, 7 Democrat, and 2 lean-Democrat "purple" districts. While some districts displayed irregular shapes, these were often justified by the need to preserve significant geographic features—the watersheds themselves—or accommodate dense population centers.

This is a promising proof of concept, but it is important to approach this idea with nuance. Watersheds offer a path to political impartiality and naturally group voters around shared environmental interests. But other considerations remain, including the protection of minority voting strength that legislatures and courts may still wish to preserve despite yesterday's ruling.

Fortunately, there are many ways to draw voting districts by watershed. Depending on where one starts, the aggregation of voters from upstream/downstream or adjacent sub-watersheds could result in districts that vary widely in racial composition and historic voting patterns.

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7 Ben Nilson, "Redistricting by Watershed: Grouping Voters by the Water They Drink, Not What Kool-Aid They've Drunk," Global Sustainability Capstone Thesis, University of Virginia, 2024. The author served as Nilson's capstone advisor.

This is where digital democracy comes in. I am advancing Nilson's work by developing a machine algorithm and a user-friendly QGIS plug-in that allows users to select a state, then a sub-watershed to "seed" a new hydrologically defined Congressional district map. The user will then be able to examine the political, ethnic, and racial composition of each set of districts. What Nilson demonstrated by hand, the tool will make accessible to anyone—redistricting commissioners, advocacy organizations, or engaged citizens—who wants to explore what different watershed-based maps might look like for their state. Used in collaborative processes, the tool, and more importantly, the watersheds could bring people to a middle ground, or perhaps more appropriately, a confluence.

Ultimately, this innovative approach invites a re-evaluation of how we define and draw political boundaries. While political Gerrymandering may be legal—and with the SCOTUS ruling noted above, it is still legal if it has the effect of reducing the voice of racial or ethnic minorities (it's only illegal if that reduction is the INTENT of the people doing the Gerrymandering)—it is still bad for democracy (suppresses participation, trust, engagement, etc.) and it does nothing to improve environmental (and arguably other) governance.

By grounding voting districts in naturally occurring, non-partisan features like watersheds, we could foster more equitable representation and bring critical environmental issues to the forefront of political discourse—bringing a breath of fresh air (and perhaps a draught of clean water) into a historically fraught process.

DEMOCRATIC INCLUSION AND BELONGING IN URBAN DIGITAL TWINS

Andrew Mondschein
School of Architecture, University of Virginia

The social history of public spaces is a history of human belonging. In the square and on the street, we engage in the push and pull of who is accepted, reinforced by formal design and regulation. Scholars like Yi-Fu Tuan,[1] Anastasia Loukaitou-Sideris,[2] and Setha Low[3] have documented how, from the earliest cities until today, public spaces were designed and enforced to establish power relationships among urban dwellers, exemplified by venues from the Athenian agora to New Deal playgrounds to gentrified retail streets.

Today, advocates and communities fight for public spaces as sites of democratic inclusion, reducing exclusion and securing the rights and means to determine how public spaces feel and function. Into this ongoing struggle has entered a powerful yet still murky new dimension of urbanism: the "urban digital twin (UDT).

UDTs encompass the many digital technologies, from sensors to big data to AI, being used to measure, simulate, and optimize cities by both public agencies and private firms. Even as cities around the world implement UDTs, how they intersect with the ongoing movement to provide democratic, bottom-up rights and choice in public space remains quite unclear. What should be clear, however, is that inclusion in digital urbanism cannot function only around the edges of UDTs — it must be embedded deeply in the algorithms that now claim a piece of our urban reality.

In contemporary UDTs, the operationalization of individuals and communities as social beings—much less politically empowered ones—is largely absent. The most widespread UDTs today are those involved in traffic management, such as Alphabet's (Google's) suite of Maps, Waze, and its driverless taxi company Waymo. Inside an urban twin, individuals are time-optimizing economic actors with little cognizance of the people and public space between destinations. As one consequence, these systems have notoriously routed traffic down residential streets worldwide, causing danger and consternation for many communities and reinforcing the environmental inequity of living near large transportation facilities.

Current publicly-led digital twins may be less focused on monetizable time savings for travelers but remain centered on infrastructure optimization. Public UDTs address important goals such as reducing impacts and increasing the resilience of urban systems, including water, energy, and mobility, but have yet to address more than the most basic conceptualizations of public space and how urban dwellers experience it. Where private actors optimize economic efficiency, public actors are far better positioned to embed human and democratic values that urban life requires.

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1 Yi-Fu Tuan, *Space and Place: The Perspective of Experience* (Minneapolis: University of Minnesota Press, 1977).

2 Anastasia Loukaitou-Sideris, "Gentrification and Urban Design," in *The Routledge Handbook of Urban Design Practice* (London: Routledge, 2026).

3 Setha Low, Dana Taplin, and Suzanne Scheld, *Rethinking Urban Parks: Public Space and Cultural Diversity* (Austin: University of Texas Press, 2005).

Despite the more typical focus on infrastructure optimization, UDT could be turned towards matters of individual and social belonging. In Bologna, Italy, the confluence of a major investment in public computing and a long history of democratic urbanism has activated a distinctively civic approach to UDTs. Bologna's approach invites a deeper realization of democratic inclusion in both stone and silicon.[4] Moving through Bologna's squares and arcades, it becomes clear that public spaces serve many more purposes than mobility and economic activity. To ignore the embodied and emotional experiences of being in the public realm would introduce bias in any model of urban activity. The diversity of activities, undertaken by residents of varied ages, incomes, and identities, each carries a value that can be accounted for, ideally separately from the parallel experiences of tourists who occupy the same spaces without setting down roots.

In a place and culture that has given a name—la passeggiata—to communal strolling through public space, inclusion in a UDT must move beyond infrastructures and reductive trajectory models. Informed by democratic engagement practices, a truly civic digital twin must move toward technical representation of urban dwellers whose rights and desires are highly intertwined with the infrastructures being monitored and optimized.

Optimization for inclusion and belonging, making democratic values operational in both real and simulated spaces, is attainable. The "agents" representing individuals in UDTs can be more fully realized as rights-bearing, motivated actors, with behavioral qualities learned from well-designed and inclusive engagement practices.[5] UDTs can include aspirations for opportunity and community alongside the mechanisms that a city uses to meet those aspirations, equitably, through its public spaces and regulatory systems. Of course, data collection and computation are costly, and have their own significant effects on people and environments.

Public UDTs, such as Bologna's, can more readily recognize and address these social costs. If public and private society see value in the optimization promised by UDTs, it is critical that the humane, democratic features of urban life are included in the calculus. Without those values, we will continue to propagate or even worsen the exclusionary nature of contemporary public spaces. With them, simulated public space will have a chance to reshape reality for the better.

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4 Massimiliano Luca et al., "Towards Civic Digital Twins: Co-Design the Citizen-Centric Future of Bologna," arXiv:2412.06328 (December 9, 2024), https://doi.org/10.48550/arXiv.2412.06328.

5 Samarth Swarup et al., "A Synthetic Information Approach to Urban-Scale Disaster Modeling," *2013 IEEE 16th International Conference on Computational Science and Engineering* (December 2013): 1105-1112, https://doi.org/10.1109/CSE.2013.161.

3. FIGHTING ERASURE

AI AND THE ARCHIVE

Laurent Dubois
Digital Technology for Democracy Lab, University of Virginia

How will AI shape human history? That question is being posed and discussed today in many ways, with dystopian and utopian visions competing for attention, and narratives about the future locked in a symbiotic relationship with financial speculation.

We should also ask a related question: how will AI shape the human past, and our understanding of it? The basic problem of AI is the problem of the Archive. The promise of the various technologies brought together under this umbrella term—those two letters standing in for, and in many ways obfuscating, an evolving welter of practices and structures—has been that all the data in the world can be used to produce new, transformative knowledge. But it is vital in thinking about what that actually means to turn to the long tradition of humanistic thought about the nature of the archive itself. That tradition reminds us continually that all data, notably the accumulation of texts that are used by Large Language Models (LLMs), are the product of structures of power that shape categories and their meanings, and therefore the very nature of what is written down and what is not.

Perhaps the most influential recent work on this question is a book by the Haitian anthropologist Michel-Rolph Trouillot called Silencing the Past.[1] In this work, Trouillot uses examples taken from the historical understandings of the Haitian Revolution to show how archives are produced in relation to a concatenation of silences. From the moment an event happens, a set of processes mean that some aspects of history will be included, and others silenced, sometimes purposefully and sometimes through play and impacts of the categories of knowledge itself. He argues, for instance, that the political content of the Haitian Revolution was for many thinkers of the time—and since—"unthinkable" and therefore in many ways silenced or excluded from the historical record.

For Trouillot, as for many other scholars who have explored this question, this does not mean that it is impossible to reconstruct the past. It does, however, mean that any attempt to do so has to integrate an understanding and critique of how the archive has been constituted, what it enables and what it hides. On a basic level, what historians know is that some voices are very loud in the archive, and others often scant, present in often evanescent traces. Much of the work of history over the past decades has been about developing the right techniques for understanding this and countering the forms of silencing in the archive in narratives.[2]

But what happens when a LLM is trained on an archive that is fundamentally structured by forms of power and silencing? Because volume itself is what makes these models work, the inequalities of the archive can easily be reproduced, even supercharged. Thomas Jefferson

1 Michel-Rolph Trouillot, *Silencing the Past: Power and the Production of History* (Beacon Press, 1995).

2 Two particularly powerful thinkers on these topics are: Ranajit Guha, *Elementary Aspects of Peasant Insurgency in Colonial India* (Duke University Press, 1999); Arlette Farge, *The Allure of the Archives*, trans. Thomas Scott-Railton (Yale University Press, 2013).

left behind vastly more text than the much larger population of the enslaved who lived around him. His presence in the archive is overbearing. While a historical narrative about the world in which he lived can navigate and push against this reality in various ways, LLMs are not, at least in their current form, particularly set up for this kind of work. And, because their premise is that processing a large quantity of information will lead to better insight, they also can easily naturalize the partiality of the archive, rendering its exclusions invisible in some ways. This has the potential to deepen the exclusions of the voices of particular communities and histories from broader narratives, with a range of potential cultural and political consequences from an accelerating silencing.

There are, of course, ways of addressing this within these technologies. These include using LLMs in bounded contexts, where a particular body of material is used to address a specific question or set of questions in a structure that is based around transparency and rigorous sourcing so that all results can be checked and confirmed through a return to that material. Such uses of LLMs can be one part of bringing humanistic understandings about the nature of the archive into discussions about AI itself. There are, of course, also powerful forces at work that militate against such a dialogue. Still, we should cultivate a space in which to have that discussion, for our moment makes crystal clear how much the telling of history is a fundamental part of the contest over the future.

ONE SIZE FITS MOST: WHY SCALE IS NOT A NEUTRAL CHOICE

Joshua Earle
School of Engineering & Applied Science, University of Virginia

The companies that run our digital technologies argue that they need all of the data they collect from their own tech, as well as data purchased from brokers. A wide breadth of data, they claim, produces tools that work well for the largest possible population. While a "one-size-fits-most" model may serve many people adequately, it abandons edge case communities for whom the tech becomes less usable at best, and actively discriminatory at worst. This is particularly concerning when the data and analysis are about human features, capabilities, bodyminds,[1] and behaviors.

The statistical tools we use to sort human data were developed by early eugenicists for the purpose of sorting people along eugenic lines.[2] The data we have collected over the past century has been sorted, filtered, and categorized by these tools. That data is then fed into algorithms built upon the same statistical foundations to decide which people gain access to things like voter registration and civic engagement, or who is subject to extra policing, surveillance, and scrutiny. The broader the data diet of an algorithmic tool, the more likely—not less—that historical human biases will infect and be reinforced by those models. Thus, I argue that our AI and machine learning models need to be smaller, more specific, more finely tuned, and built with and by their user communities.

One of the most influential papers critical of large language models (LLMs) made a similar argument. Emily Bender et al. found that in large training datasets "hegemonic viewpoint[s] are [...] more likely to be retained [...] not only exceeding their prevalence in the general population but also setting up models trained on these datasets to further amplify biases and harms."[3]

The data isn't the only issue with scale. The computing power necessary to train large models—and to process queries—is immense. It requires data centers full of high-end processors, that pull vast amounts of electricity and water. Communities near these facilities have seen their power bills skyrocket due to the strain on electric grids,[4] found their air polluted by generators

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1 The term "bodymind" comes from Disability Studies (Price, Margaret. "The Bodymind Problem and the Possibilities of Pain." *Hypatia* 30, no. 1 (2015): 268-84; Schalk, Sami. *Bodyminds Reimagined: (Dis)Ability, Race, and Gender in Black Women's Speculative Fiction*. Duke University Press, 2018.) and is used to eliminate a long history of separation of body and mind into separate realms. By using the term bodymind, I reinscribe each into the other, reaffirming the importance of their entangled existence.

2 Ruth Schwartz Cowan, "Francis Galton's Statistical Ideas: The Influence of Eugenics," *Isis* 63, no. 4 (1972): 509-528, https://doi.org/10.1086/350926 Donald A. MacKenzie, Statistics in Britain, 1865-1930: The Social Construction of Scientific Knowledge (Edinburgh: Edinburgh University Press, 1981).

3 Emily M. Bender, Timnit Gebru, Angelina McMillan-Major, and Shmargaret Shmitchell, "On the Dangers of Stochastic Parrots: Can Language Models Be Too Big?" *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency* (2021): 613, https://doi.org/10.1145/3442188.3445922.

4 Ben Green and Terry Nguyen, *What Happens When Data Centers Come to Town?*, July 15, 2025, https://hdl.handle.net/2027.42/198817.

necessary to cover for grid fluctuations,[5] and seen their water threatened by the cooling requirements of these data centers.[6] The power demands of these centers have slowed the transition away from fossil fuels and have even led companies like Amazon to invest in building nuclear reactors.[7]

Without a narrower set of digital tools-built in partnership with, and for the specific desires of, the community it is supposed to serve-eugenic logics, exclusionary and discriminatory outputs, and further marginalization of minoritized populations will be the result. Keeping models smaller, more contextual to the user community's needs, and geared more toward connecting different communities is necessary to mitigate the risks of larger scale tools. Scaling, in these instances, especially when the relevant communities have been historically marginalized, is actively harmful, not only to those communities, but also to the environment and the communities these tools are housed. One-size-fits-most is a guarantee to exclude those who have always been outside the category of "most."

5 Lora Kolodny, "NAACP Sues Elon Musk's xAI over Memphis Data Center Air Pollution," *CNBC*, April 14, 2026, https://www.cnbc.com/2026/04/14/elon-musk-xai-memphis-data-centers.html.

6 Elgin Olson, Amber Grau, and Tyler Tipton, "Data Centers Draining Resources in Water-Stressed Communities," University of Tulsa News, July 19, 2024, https://utulsa.edu/news/data-centers-draining-resources-in-water-stressed-communities/.

7 Diana Olick, "Amazon Goes Nuclear, to Invest More than $500 Million to Develop Small Modular Reactors," CNBC, October 16, 2024, https://www.cnbc.com/2024/10/16/amazon-goes-nuclear-investing-more-than-500-million-to-develop-small-module-reactors.html.

BAZI AS A NEW BENCHMARK: HOW CHINESE USERS MEASURE AI WITH COSMIC KNOWLEDGE

Yingchong Wang
School of Data Science, University of Virginia

In early 2025, when Chinese AI startup DeepSeek unveiled its model, millions of Chinese users did something Silicon Valley's benchmarks never predicted: they tested it with Bazi (literally "eight characters"). Bazi is a traditional Chinese system that converts a person's birth year, month, day, and hour into eight Chinese characters, each linked to one of five natural elements (wood, fire, earth, metal, and water), to map out an individual's destiny and fortune. Within a few weeks, the hashtag #DeepSeekFortuneTelling was trending on Rednote (Xiaohongshu), one of China's leading lifestyle social media platforms that resembles Instagram in its visual format but centers more on detailed user reviews and practical guides. Besides sharing the prediction results, users shared prompt templates, invited more results of various models, and shared their own evaluations using Rednote's unique, tutorial-driven content format. What emerged was not just fortune-telling hype, but a new standard for decentralized, user-driven evaluation of AI performance rooted in cosmic knowledge. Could a large language model truly navigate the logic of Chinese fate calculation?

What makes Bazi a particular demanding task for AI is that it requires both precise calculations and contextual interpretations. Fortune-telling in China has long been understood as "calculating fate," with fate being presented as a logical-mathematical problem.[1] However, calculations alone are not enough. Practitioners are expected to apply clear theoretical concepts and principles to make experiences coherent.[2] Experienced fortune tellers can deploy strategic linguistic skills to "read" their clients' minds and link the Five Elements to the individual's emotional and moral circumstances to provide therapeutic effect.[3] Bazi thus integrates calculation, interpretation, and a cosmological worldview, functioning as a traditional form of counseling.

Not everyone masters Bazi. Fortune tellers emphasize their expertise by positioning themselves as "national studies" or psychological counseling,[4] and sometimes the complex process of fate prediction itself is considered a reliable cognitive tool for risk management.[5] When Chinese internet users test DeepSeek with Bazi, they are really asking if this machine can do what only a few people can: see patterns that most people cannot. This question is closely related to practical interests. Studies show that in China, research and development spending drops by about 6 % and mergers and acquisitions activity drops by 16 % when the CEO reaches a

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1 Geng Li, *Fate Calculation Experts: Diviners Seeking Legitimation in Contemporary China*, vol. 9 (New York: Berghahn Books, 2019).

2 William Matthews, "Ontology with Chinese Characteristics: Homology as a Mode of Identification," *HAU: Journal of Ethnographic Theory* 7, no. 1 (2017): 265-285.

3 Geng Li, "'Reading the Heart': Cosmology, Ethics, and Language of Chinese Divination as Therapeutic Resources," *Review of General Psychology* 29, no. 2 (2025): 211-223.

4 Geng Li, *Fate Calculation Experts: Diviners Seeking Legitimation in Contemporary China*, vol. 9 (Berghahn Books, 2019).

5 Stéphanie Homola, "Pursue Good Fortune and Avoid Calamity: The Practice and Status of Divination in Contemporary Taiwan," *Journal of Chinese Religions* 41, no. 2 (2013): 124-147.

year that corresponds to their zodiac animal as their birth year[6] — a year often associated with particularly bad luck. Venture capitalists are also influenced by fortune-telling reports about fund managers in their investment decisions.[7] People are interested in AI-powered Bazi readings because the results can indeed affect their real-life decisions.

That millions of ordinary users are making these evaluations collectively, on their own terms, is where the democratic argument begins. The significance of this phenomenon for digital democracy lies precisely in what existing governance frameworks overlook. When authorities in China label such content as "superstitious," Bazi is often treated as a category to be filtered. When AI companies praise benchmark results, they measure reasoning ability in domain-neutral terms. Neither framework recognizes what users are actually doing: a participatory grassroots technology assessment based on cultural knowledge. Ordinary users, neither regulators nor technology experts, define their criteria for "intelligent AI" from their own cultural perspective. This is a democratic act, not in the formal institutional sense, but in the sense of a redistribution of epistemological authority over what AI can do.

The key point is that this grassroots evaluation was not simply disseminated on Rednote but was shaped by Rednote. The tutorial-oriented format of the platform contributed to the Bazi benchmark. Users posted screenshots with AI-generated results, shared refined prompt templates, and how different AI models interpreted the Five Elements and their relations to one's destiny. Rednote's characteristics enabled rapid circulation of evaluation criteria that individual users alone could hardly have developed. What constitutes a "good" Bazi analysis through AI is inextricably linked to the media environment in which users collectively formed their judgments. This is not a side note in a discussion about governance, but a core element for understanding how AI adoption actually works.

If we take seriously the fact that Chinese users are testing AI through Bazi, its significance extends far beyond China. AI adoption is influenced by locally relevant evaluative criteria that prevailing governance frameworks, centered on bias, privacy, and transparency, fail to address. The central question is not simply: "Is this AI accurate?", but: "Is this AI compatible with my moral values and worldview?" Existing scholarship has begun to address cultural dimensions of AI governance, but the Bazi case exposes a dimension these frameworks cannot fully capture: that users evaluate AI through entire cosmological knowledge systems that define what intelligence itself means. Without attending these dimensions, governance frameworks risk misclassifying legitimate cultural knowledge practices such as fraud, superstition, or entertainment, suppressing the very forms of AI adoption they fail to understand. To answer this question, research is needed that combines media studies, governance analysis, and cultural knowledge systems. Scholars must be willing to treat cosmological thinking as seriously as the millions of users who are already intensively putting it to the test.

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6 Raymond Fisman et al., "Superstition and Risk Taking: Evidence from 'Zodiac Year' Beliefs in China," *Management Science* 69, no. 9 (2023): 5174-5188.

7 Cheng Xu et al., "Reading the Financial Stars: The Interplay of Chinese Fortune-Telling, Western Astrology, and Investment Decisions," *International Journal of Finance & Economics* (2026), 1-27. https://doi.org/10.1002/ijfe.70141

THE IMPACT OF TRUST AND SAFETY SYSTEMS ON LANGUAGE DIVERSITY FOR MULTIRACIAL DEMOCRACIES

Dhanaraj Thakur
Fair Technology Initiative, Multiracial Democracy Project, George Washington University Law School

In the 2024 U.S. Presidential election both campaigns made sustained efforts to reach out to Black,[1] Hispanic,[2] Asian American,[3] Native American,[4] and White[5] voters among others, a significant recognition of the multiracial nature of the U.S. electorate. Multiracial democracies are an important type of political system found around the world as well. They can be described as liberal democracies with a racially and ethnically diverse population, where institutions and laws exist to protect the rights of all groups.[6] The extent to which the rights of minority and other groups are protected and treated equally under the law varies and shifts over time. The United States began as a multiracial nation with a highly unequal democratic premise that privileged white men over all other groups. Language was an important aspect of that privilege[7], and a crucial part of today's multiracial democracy.

In the case of the U.S., while rights were not afforded to everyone initially, this changed over time as the movement towards greater equality led by African-American organizations expanded civil and democratic rights for all. A significant factor behind that change was how social movements generally are able to influence public discourse in ways that open up possibilities for enacting laws that protect the rights of everyone.[8] Public discourse today takes place primarily on social media and other online networks which are increasingly influenced by the use of machine learning technologies, including large language models to moderate content.[9] It's important therefore to understand how trust and safety systems (i.e., safety and security policies that govern user generated content on a given platform and the combination of human and machine practices that implement those policies) can influence the nature of public discourse given the critical role of language for a multiracial democracy.

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1 Aamer Madhani and Seung Min Kim, "'Are You with Me?' Biden and Harris Launch Black Voter Outreach and Warn of a Second Trump Term | AP News," Associated Press, May 29, 2024, https://apnews.com/article/biden-black-voters-election-2024-pennsylvania-0c4a7343c017f57a38c847bfc9b1316f.

2 Suzanne Gamboa and Carmen Sesin, "Harris, Trump Groups Tout Dueling 'freedom' Messages to Latina Voters," NBC News, September 24, 2024, https://www.nbcnews.com/news/latino/harris-trump-campaigns-compete-latina-votes-freedom-issues-rcna172409.

3 Yash Roy, "Kamala Harris Targets Asian American Voters, Specific Communities in Key States," Text, *The Hill*, October 26, 2024, https://thehill.com/homenews/campaign/4946826-vice-president-harris-asian-american-voters/.

4 Ximena Bustillo, "Native Voters Could Swing Arizona. Both Parties Want Their Votes," Politics, *NPR*, October 14, 2024, https://www.npr.org/2024/10/14/nx-s1-5151952/native-voters-arizona-harris-trump.

5 Will Weissert, "'White Dudes for Harris' Is the Latest in a Series of Zoom Gatherings Backing the Vice President," AP News, July 29, 2024, https://apnews.com/article/harris-supporters-by-ethnic-background-white-dudes-b474af62f6b225c71cde16be7e9eb077.

6 Spencer Overton, "Overcoming Racial Harms to Democracy from Artificial Intelligence," *Iowa Law Review* 110 (2025): 805.

7 Adeno Addis, "Constitutionalizing Deliberative Democracy in Multilingual Societies," *Berkeley Journal of International Law* 25, no. 2 (2007): 117-164.

8 Deva R. Woodly, *The Politics of Common Sense: How Social Movements Use Public Discourse to Change Politics and Win Acceptance* (Oxford: Oxford University Press, 2015).

9 Mahi Kolla et al., "LLM-Mod: Can Large Language Models Assist Content Moderation?" *Extended Abstracts of the CHI Conference on Human Factors in Computing Systems (CHI EA '24)* (2024): 1-8, https://doi.org/10.1145/3613905.3650828; Deepak Kumar, Yousef Anees AbuHashem, and Zakir Durumeric, "Watch Your Language: Investigating Content Moderation with Large Language Models," *Proceedings of the International AAAI Conference on Web and Social Media* 18 (2024): 86-878, https://doi.org/10.1609/icwsm.v18i1.31358.

I use prior research on trust and safety systems within global social media companies that employ large language models (LLMs) as part of their content moderation processes to illustrate how certain language speakers may not be able to fully participate in a multiracial democracy. More specifically, I focus on what AI developers and natural language processing (NLP) researchers refer to as "low-resource" languages—languages for which there is very little data available online to train models to analyze content. While the examples I use are from regions in the Majority World (e.g., South America and India) these are also languages spoken in the U.S. The main implication is that most multilingual LLMs and the content moderation systems that rely on them perform worse in those languages.[10] In the context of multiracial democracies, I highlight three main implications.

First, the relationship between languages in a given multiracial context often reflects asymmetries of power, which in turn can influence trust and safety systems and produce poor moderation of the low-resource language. In a study of how AI was used to support the moderation of user posts in Quechua and Spanish—primarily in Quechua speaking countries in South America—I argued that trust and safety systems privileged Spanish over Quechua. That is, content policies were first developed in English, translated to Spanish, and then poorly applied to Quechua, while ignoring the context in which the Quechua posts were made. This was compounded by the fact that the platform's AI based tools worked poorly in Quechua and there were significantly fewer content moderators who spoke Quechua compared to Spanish in the global social media company studied.[11]

Second, users who post in low-resource languages are subject to unequal moderation outcomes, such as over-moderation, which can lead to chilling effects. In commenting on how trust and safety systems operated in Tamil—one of many languages used on social media in India—we pointed to research that some users simply refrained from posting in Tamil out of a fear that the platform would block or shadowban their content. Political speech was also often removed without explanations, which is relevant in a context where posting in a given language is itself political.[12]

Finally, trust and safety systems can exacerbate existing gender and race-based inequities in language use online. In another study on Quechua, I found that the content moderation policies of major social media companies can create environments of sustained intersectional harassment, where users target Quechua women content creators because of their race, gender identity, and the fact that they post in Quechua.[13]

These examples from different multiracial contexts point to ways in which language, whether by itself or in combination with other identities, is an important factor in how people's participation in public discourse online is constrained. On one level, this may simply reflect the failure

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10 Gabriel Nicholas and Aliya Bhatia, "Toward Better Automated Content Moderation in Low-Resource Languages," *Journal of Online Trust and Safety* 2, no. 1 (2023), https://doi.org/10.54501/jots.v2i1.150.

11 Dhanaraj Thakur, *Moderating Quechua Content on Social Media* (Washington, DC: Center for Democracy & Technology, 2025), https://cdt.org/insights/moderating-quechua-content-on-social-media/.

12 Aliya Bhatia and Dhanaraj Thakur, "Inconsistent Enforcement, Suppressed Speech, Unchecked Hate Mar Tamil Content Moderation," *The Hindu*, September 18, 2025, https://www.thehindu.com/opinion/op-ed/inconsistent-enforcement-suppressed-speech-unchecked-hate-mar-tamil-content-moderation/article70062807.ece.

13 Dhanaraj Thakur, "'Our Content Should Be Treated Differently': Race, Gender, Language and the Experiences of Quechua Women on Social Media," *Journal of Online Trust and Safety* 3, no. 3 (2026), https://doi.org/10.54501/jots.v3i3.332.

of existing trust and safety systems to adequately accommodate low resource language speakers. However, and perhaps more importantly, those systems may actively privilege some languages—particularly European languages—over others. This has implications for the extent to which people can participate equally in online public discourse and for what meaningful equality in multiracial and multilingual democracies can actually look like. Ultimately if we are to protect the human rights of everyone given in a multiracial democracy such as the U.S. then we also need to ensure linguistic equity when it comes to AI mediated democratic participation.

SETTING NEW STANDARDS FROM BELOW

Andrea Roberts
School of Architecture, Center for Cultural Landscapes
University of Virginia

Procurement emerged as a domain where we could challenge the gatekeeping effect that experts and academics can have on communities trying to understand what is at stake when incorporating AI or related technologies into their projects. Over the past several months, our research center's work toward an online portal for descendant engagement—part of a broader project supporting outsider preservation efforts—has been greatly augmented by stakeholders outside the walls of academia, including descendant community members from throughout the country and here in Central Virginia. Our team set out to develop a vendor evaluation rubric codeveloped by and for descendant community members—not merely to ask for input, but to ensure that descendants shaped the criteria and approach for selecting vendors that best serve the project's aims and its communities. The result is what we call a Digital Rubric.

This Digital Rubric is inspired by the rubric developed at the 2018 National Summit for Teaching Slavery, entitled, "Engaging Descendant Communities in the Interpretation of Slavery at Museums and Historic Sites, A Rubric of Best Practices,"[1] known simply as "The Rubric." The Rubric sets a standard and offers guidance to historic sites on how best to not only engage but build meaningful collaboration with descendant community members, reshaping often distorted, two-dimensional accounts of the lives of the enslaved. Our Digital Rubric applies this standard to a new domain: the virtual spaces where descendant data, educational materials, and place heritage are curated and governed.

The Outsider Preservation Initiative (OPI), administered through the Center for Cultural Landscapes (CCL) in the UVA School of Architecture, focuses on the strategic use of storytelling to catalyze descendant recommitment and involvement in preservation activities at historic Black settlements along the Gulf, West, and East Coasts, as well as in Canada. OPI works not only toward historic preservation but also toward intergenerational exchanges and succession planning for these communities with little remaining physical infrastructure. It does so through direct financial investment in descendant-led projects, building communities of practice, creating new online infrastructure for descendant connection and education, and developing preservation pedagogy co-created with descendants to address the power asymmetries that arise in service- and project-based learning. The portal provides space for diasporic reconnection and learning, essential for fostering return to settlement preservation, given how widely dispersed descendants are because of the Great Migration and of subsequent movements in search of greater economic opportunity and expressions of political freedom.

The CCL held a series of workshops with descendant community members virtually to facilitate both critique and co-design of the rubric, to catalyze new imaginings of online space incorporating

1 James Madison's Montpelier, "Engaging Descendant Communities in the Interpretation of Slavery at Museums and Historic Sites: A Rubric of Best Practices Established by the National Summit on Teaching Slavery," *V1. 0*, 2018, 17.

transdisciplinary designer, visual artist, and educator Curry Hackett's[2] creative use of AI tools, to offer an accessible AI literacy session, and to learn from our grantees how they want their work to appear online. Groups such as the Descendants of Enslaved Communities—Virginia contributed enormously to this process. Our team solicited input on the rubric, invited imaginings about portal user experience, design, and governance, and revised the rubric in response. Working in the communicative and participatory planning traditions,[3] the workshops attempted to create a level playing field of shared foundational knowledge about the risks and rewards of various user experiences—whether involving AI or protecting the site from AI—so that everyone understood what was at stake in selecting a vendor and designing the new online space.

Descendants and advisory board members ultimately used the rubric to assess our vendor's finalists. While the Digital Rubric requires further refinement, it lays a foundation for applying the original rubric, which operated in historic sites associated with enslavement, into a new set of standards for virtual spaces containing descendant data, educational materials, and heritage curation focused on the more recent past. Descendant groups can use it as an advocacy tool in procurement processes involving AI or descendant data, assessing the quality of vendor proposals and presentations across categories defined and chosen by descendants themselves: Structural Racism Understanding; Data Sovereignty & Community Control knowledge; Privacy & Security; Community Engagement & Co-Design; Trauma-Informed UX; and AI Ethics. The procurement process, in other words, becomes a site where communities exercise genuine power over the technologies that will shape how their histories are told.

2 Irene Vázquez, "Curry J. Hackett Has a Vision for Black Futurity That Drives His Work," The Architect's Newspaper, February 19, 2025, https://www.archpaper.com/2025/02/curry-j-hackett-black-futurity-art-design-urban-planning/.

3 Sherry R. Arnstein, "A Ladder of Citizen Participation," Journal of the American Institute of Planners 35, no. 4 (1969): 216-24.

WHO SPEAKS FOR THE MAJORITY WORLD?
REFLECTIONS ON TECHNOLOGY DESIGN AND GOVERNANCE

Roya Pakzad
Taraaz

There is a tension in technology policy and digital rights debates that is a problem of language. I mean this in two senses. Language as in the actual languages a product is built in: the ones it is optimized for, tested in, safeguarded for, moderated in. And language as in the vocabularies we use to describe who policy is for: who counts as a stakeholder, whose framings get heard and amplified. I work across both—running multilingual evaluations of how AI-enabled products perform in non-English languages, and tracking how "internationalization" is discussed in policy spaces. In both, the same move happens: a narrow, English-speaking Western core sits on one side, and everyone else is flattened into a single undifferentiated other.

You can see the flattening in how the category keeps getting renamed. We have cycled through Third World, Developing Countries, Global South, and now Majority World. Each renaming is offered as a respectful correction of the last. But the analytical move stays the same: the United States and a handful of Western European countries on one side, everyone else lumped together. The label gets more politically correct; the flattening does not.

Two examples show the cost of this flattening

The first is inside tech companies, when algorithmic language tools are built. English is the default substrate of contemporary language technology. Tokenizers,[1] pre-trained models, and benchmarks are built English-first, with everything else a downstream "feature." Leading tokenizers require three to five times more tokens for non-Latin scripts than for English, meaning higher costs and worse performance for their speakers.[2] Because commercial models charge by the token, speakers of these languages effectively pay more for less: the same request costs more to process, fits less surrounding context, and often returns lower-quality output.[3] "Multilingual" models pre-train on English-heavy corpora and adapt outward; designing from typologically diverse starting points is imaginable but is not what happens. The same asymmetry runs through content moderation on social media platforms, where classifiers or automated systems that scan posts and decide what counts as harmful, written for English contexts are retrofitted onto languages and political situations they were never designed for. The result is predictable: sometimes coded incitement in under-resourced languages slip past platforms' guardrails and detection while ordinary speech may be mis-flagged—failures that

1 A tokenizer is the component of a language model that splits text into the smaller units or "tokens" the model actually processes: words, sub-words, or characters. The same sentence can require very different numbers of tokens depending on the language and script, which directly affects cost and performance.

2 Orevaoghene Ahia et al., "Do All Languages Cost the Same? Tokenization in the Era of Commercial Language Models," in Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing (Singapore: Association for Computational Linguistics, 2023), 9904-23.

3 Roya Pakzad, "Multilingual AI Safety Evaluations," Taraaz / Mozilla Foundation, accessed July 9, 2026, https://www.multilingualailab.com/.

have carried human cost in contexts from Myanmar[4] to Ethiopia.[5]

The second example is the "sovereignty" narrative. In digital rights advocacy, sovereignty has become a way of pushing back against digital colonialism—of naming community-rooted alternatives. The impulse is real. But the word does not mean the same thing everywhere. In Iran, digital sovereignty is a euphemism for state control: the National Information Network is marketed as independence from Western platforms while functioning as infrastructure for censorship, throttling, and surveillance.[6] In Brazil, activists have used the same vocabulary to press for community-governed alternatives. Large tech companies offer to "provide sovereignty" through in-country data centers, reassigning the concept from civic self-determination to procurement. One word, three directions: authoritarian capture, grassroots demand, and corporate co-optation.[7] Advocacy that treats sovereignty as universally liberatory amplifies whichever actor is loudest.

Underneath both examples lies an uncomfortable question: when we invoke the Majority World, who actually gets to speak on its behalf? In my own circle, meaning researchers and advocates working to hold tech companies and governments accountable, the narratives that travel are the ones that fit the frames the most resourced actors already hold, and that make it through the gatekeeping of conferences, journals, and funders. Majority World voices get amplified when they confirm the existing narrative; when they complicate it, they are dismissed or left out.

I have felt this as an Iranian researcher. When colleagues and I use human rights language to push back on state repression, US academic spaces sometimes tell us we are importing colonial Western values. When we invoke the Universal Declaration of Human Rights, for example, we are sometimes reminded of the document's Western genealogy as though the Iranian activists who cite it, often at great personal risk, had never considered that history themselves. Meanwhile, the Iranian state has spent years co-opting the language of social justice (edalat-e ejtema'i) to frame universal human rights as a foreign imposition.[8] So, when I hear "social justice" invoked in US universities as a way of signaling something more meaningful than "Western" human rights, I am watching two very different political framings reinforce each other across a hemisphere, silencing the people the language claims to center.

Democracy from below cannot just mean amplifying "Majority World" voices as a category. It has to mean resisting the urge to hear those voices only when they confirm a framework gatekeepers already find comfortable. It also has to mean treating sovereignty, justice, and rights as contested inside every context, and recognizing that gatekeeping itself is part of the democratic deficit.

If we cannot hold that complexity, we will keep renaming the category every decade and reproducing the same silences underneath.

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4 Amnesty International, "United States: Rohingya Survivor Asks US Regulator to Investigate Meta's Potential Role in Myanmar Atrocities," January 23, 2025, https://www.amnesty.org/en/latest/news/2025/01/united-states-rohingya-survivor-asks-us-regulator-to-investigate-metas-potential-role-in-myanmar-atrocities/.

5 Cara Anna, "Ethiopians File Lawsuit against Meta over Hate Speech in Tigray War," PBS NewsHour, December 14, 2022, https://www.pbs.org/newshour/world/ethiopians-file-lawsuit-against-meta-over-hate-speech-in-tigray-war.

6 ARTICLE 19, "Iran: Tightening the Net 2020," accessed July 9, 2026, https://www.article19.org/ttn-iran-november-shutdown/; Azadeh Akbari, "Iran's Case Should Put an End to Illusions about Digital Sovereignty," Tech Policy Press, January 15, 2026, https://www.techpolicy.press/irans-case-should-put-an-end-to-illusions-about-digital-sovereignty/.

7 Min Jiang and Luca Belli, "Introduction: Contesting Digital Sovereignty: Untangling a Complex and Multifaceted Concept," in Digital Sovereignty in the BRICS Countries: How the Global South and Emerging Power Alliances Are Reshaping Digital Governance, ed. Min Jiang and Luca Belli, Communication, Society and Politics (Cambridge: Cambridge University Press, 2025), 1-38.

8 Reza Afshari, Human Rights in Iran: The Abuse of Cultural Relativism (Philadelphia: University of Pennsylvania Press, 2001), https://www.jstor.org/stable/j.ctt3fhkdh.

MORE THAN ONE THING CAN BE TRUE

Mar Hicks

In my community, like in many communities in the US, there is strong pushback against the building of AI data centers. One of the reasons for this is concern about environmental harm, but an even larger one is the groundswell of suspicion and even hatred for the AI systems that have been aggressively marketed as consumer products for the past several years.

Many people in my community perceive the large language model (LLM) systems that generate text or artwork by remixing stolen source materials as the wrong direction for technology to take. Parents and educators are worried about what the future will look like for younger people raised in an environment where the hard work of learning and doing can be short circuited by typing a few prompts into the latest chatbot, giving students a false sense of mastery. Research is showing that these fears are well-founded: students have lower knowledge retention and learn less when allowed to use LLMs.[1] Increasingly, even students themselves are resisting and rejecting LLMs' encroachment into education because they recognize it has negative effects on the learning process.[2]

The concern that students may be forced to accept a measurably worse future because of decisions made at higher levels for the good of the wealthiest players in the US economy—who decide on what technologies should or should not become widespread—does not only apply to AI. Because of such decisions, we are living through one of the worst periods in recent history in regard to student and teacher absences, illnesses, and underperformance. This was not caused by AI.

Five short years ago, during a period that most have chosen to forget, the current ongoing global pandemic became normalized with the ending of the "emergency phase" of the COVID-19 pandemic. Although the World Health Organization stated plainly that this was not the end of the pandemic and that precautions still needed to be taken to prevent serious negative outcomes—including the mass disabling of people of all ages—many nations, including the US, quickly reduced or eliminated precautions and focused on a "return to normal" that sacrificed the health and well-being of children and adults for the interests of big business.[3] Seven years into the pandemic, more workers than ever before in recent history are now disabled, and post-acute sequalae of COVID-19 infections, which can last months, years, or be permanent, are the most prevalent childhood illness for school age children, surpassing even asthma.[4]

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1 André Barcaui, "ChatGPT as a cognitive crutch: Evidence from a randomized controlled trial on knowledge retention," Social Sciences & Humanities Open, Volume 12, 2025, https://doi.org/10.1016/j.ssaho.2025.102287.

2 Jeremy Margolis, "AI is breaking high school. Students are starting to sound the alarm," Concord Monitor, 18 April 2026, https://www.concordmonitor.com/2026/04/18/high-school-ai-use-crisis/.

3 Kris Van Cleave, "Airlines ask Biden to drop mask mandate and testing requirements for travelers," 23 March 2022, CBS News, https://www.cbsnews.com/news/airlines-ask-biden-to-drop-mask-mandate-testing-requirement/

4 Danilo Buonsenso, "Long COVID is here to stay—even in children," The Lancet Infectious Diseases, 2025; 26, 112-113, https://doi.org/10.1016/S1473-3099(25)00496-7.

In the case of LLMs, communities face a difficult fight: huge corporations and the wealthiest in our society are aligned with generative AI, no matter the harms.[5] While communities rail against AI as an existential threat, they let another existential threat in through the side door.

This is not to say that the backlash against AI is misguided or wrong. But two things can be true at once: people have badly miscalculated the risk to their communities, their children, and themselves because they take seriously the apocalyptic musings of tech industry leaders on one side, while minimizing the ongoing pandemic and its risks on the other. The technologies that save us—or destroy us—are often not so easily recognized. Long after the AI boom has softened and students have gone back to learning instead of prompting, we will still see children and parents losing the fight to survive because of the collective rejection of something as commonsense as taking precautions against a once-in-a-generation contagious illness.[6]

In the coming decades, we will see families without adults capable of working and children without a reasonable chance at an independent future, because of our society-wide refusal to accept that sometimes making a better world means deploying technologies of care, not just refusing technologies of harm. We will notice many of the negative consequences we fear from AI—loss of autonomy, loss of the ability to make a living, loss of a functional economy—creep in for a different reason and many will ask: "how did this happen?" Digital democracy does not just mean engaging with the politics of digital platforms and tools; its means taking seriously the health and survival of the body politic without whom digital democracy has no basis.

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5 For example: Samantha Kelly, "Sam Altman warns AI could kill us all. But he still wants the world to use it," 20 November 2023, CNN Business, https://www.cnn.com/2023/10/31/tech/sam-altman-ai-risk-taker; "Microsoft may shelve 2030 clean energy target as AI lifts power use, Bloomberg News reports," 6 May 2026, Reuters, https://www.reuters.com/sustainability/climate-energy/microsoft-may-shelve-2030-clean-energy-target-ai-lifts-power-use-bloomberg-news-2026-05-06/; Nilza Amaral, "The Iran war highlights the creeping use of AI in warfare," 27 March 2026, Chatham House, https://www.chathamhouse.org/2026/03/iran-war-highlights-creeping-use-ai-warfare; and, Lora Kolodny, "NAACP sues Elon Musk's xAI over Memphis data center air pollution," 14 April 2026, CNBC, https://www.cnbc.com/2026/04/14/elon-musk-xai-memphis-data-centers.html.

6 In my community, individuals and small groups are struggling to clean the air in schools and other public places to reduce airborne disease transmission, and focusing on this because of the realization that asking people to take steps towards collective care through masking in public spaces is too politically unpopular--not only among right-wing but also left-wing leaning people--to be broadly viable. See https://www.cleanaircville.org/.

4. PRACTICING EVERYDAY DEMOCRACY

DEMOCRACY AS STORYTELLING

Caitlin D. Wylie
Department of Engineering and Society, University of Virginia

While listening to the workshop's speakers and participants, I was struck by the importance of how we tell stories. I mean "stories" in the sense of narratives about ourselves, each other, society, government, technology, knowledge, and everything else. Storytelling is deeply social, cultural, and human. It is therefore a crucial way to create and share knowledge and values.[1] In my field of science and technology studies, we ask how people produce knowledge by analyzing the stories that scientists and engineers tell about the world. Theories and interpretations are stories, and they serve as the foundation for our shared sense of what is real and true.

As constructors and conveyors of knowledge and values, stories are powerful, necessary tools for democracy. After all, we do the everyday work of democracy through storytelling, such as to express our views, argue with and persuade others, and pursue collaboration, consensus, and compromise. Democracy itself is a storyline, one that varies across cultures and time. Here I reflect on the necessity for members of a democracy to share narratives that align in key ways, even when they differ in other ways. Specifically, when we don't try to understand others' narratives, then democracy is in serious danger.

Conflicting narratives

There is ample evidence today of coexisting and conflicting stories of what is true. One workshop participant compared how the Iranian government portrayed the January 2026 uprisings as caused by foreign interference, while protestors portrayed the uprisings as grassroots calls for economic and social change. To control the narrative of what was happening, the government shut down internet access.[2] Which narrative is "real" depends on whom you ask and whether it's safe to tell.

Neal Stephenson's dystopic novel *Fall; or, Dodge in Hell* illustrates the social disintegration that can happen when people live in conflicting realities.[3] The story depicts a future United States in which wealthy urban residents hire "editors" to screen their online information, while poor rural residents are bombarded by algorithmic newsfeeds of nonsense. The people who cannot afford protections from disinformation become desperate, violent extremists who hate the rich urbanites, who in turn fear them. These two worlds are so different in experienced reality and social identity that people build borders between the United States and "Ameristan." This plot is brutally relatable, as a thinly veiled satire of current U.S. political divisions that also encompass

1 Caitlin D. Wylie, "Socialization through Stories of Disaster in Engineering Laboratories," *Social Studies of Science* 49, no. 6 (2019): 817-38.

2 Athanasios Dimadis, "Inside Iran's Crisis: Protests, Crackdowns, and High-Stakes Diplomacy," The Association of Foreign Press Correspondents USA (February 9, 2026). https://foreignpress.org/us-culture-arts-review/inside-irans-crisis-protests-crackdowns-and-high-stakes-diplomacy

3 Neal Stephenson, *Fall; or, Dodge in Hell* (New York: William Morrow, 2019).

divisions in what we believe to be true. When our stories do not align, we risk ending up in separated, competing, hate-filled worlds. Stories, then, must be shared—as both a verb and an adjective—by groups who hope to "do" democracy together.

One situation in which misaligned stories can cause conflict is when scientists and community members do research together. As a community-engaged researcher, I think a lot about what it means for ivory-towered academics to ask a community to work with us. One starting point is setting expectations for a shared project that are appealing to everyone and genuinely achievable. As engineer Garrick Louis advises, researchers should 'underpromise and overdeliver' to communities.[4] When researchers do the opposite—which, I fear, is common—we exploit a community's welcome, lose their trust, and potentially sour their view of research entirely. For my research team's study of resilient infrastructure and ethical research practices in an Arctic town, the primary narratives included: what my team promised to our community partners; what our partners understood us to be promising; what we think we actually did; and what our partners think we actually did. When these narratives are out of sync, the project shatters into several different forms of itself. But when these narratives are compatible—not necessarily identical—then fantastically useful, relevant, creative knowledge-making can happen.

Collaborating across narratives

When diverse narratives share compatible realities and values, surprising coalitions become possible. For example, in the 1960s and 1970s United States, the men's rights movement agreed with the feminist movement on the need for legal no-fault divorce. Based on this shared goal, these rival groups managed to change policy and society to embrace no-fault divorce as a blame-free exit for men and an easier exit for women. Historian Alison Lefkovitz wrote an aptly titled book about this case of coalition-building: Strange Bedfellows.[5] Even advocates for arguably opposing causes can cooperate toward a better society, as long as their stories align.

This coalition-building magic across narratives also relates to research by media studies scholar and workshop participant Megan Wiessner.[6] She found that demand for wooden homes in the Pacific Northwest has skyrocketed, driven by diverse narratives about timber. These narratives prize renewable materials, lower cost, or aesthetics. Even when guided by different values, homeowners make the same choice—a small but concrete model of how democratic coalitions form.

These examples—community-engaged research, social activism, and home design—illustrate a backbone of democracy: aligning various people's various beliefs and values in ways that allow them to understand the same world and hope for the same things. Storytelling is how we convey these ideas to each other and ourselves. This consensus-building can then enable collective action to pursue shared goals.

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4 Garrick Louis, "Toward Public Interest Technology: An Interview with Garrick Louis," Public Interest Technology University Network at UVA (25 October 2024). https://pit-un.virginia.edu/toward-pit-un-garrick-louis.

5 Alison Lefkovitz, *Strange Bedfellows: Marriage in the Age of Women's Liberation* (Philadelphia: University of Pennsylvania Press, 2018).

6 Megan Wiessner, "Digital Construction Comes to the Pacific Northwest: Timber and the Landscapes of Automation," *IEEE Annals of the History of Computing* 47, no. 4 (2025): 11-23.

Storytelling “from below”

However, democracy is not easy. Workshop panelist Bianca Wylie drove home the challenges of talking to people, sharing your truths, listening to others, and building consensus or compromise. This work is slow, awkward, messy, and rarely achieves anyone’s goals. As Wylie (no relation) said, “Everyone leaving the room annoyed and thinking, ‘fine, I can deal with this outcome,’ is a win.” She contrasted this frustrating work with the “convenience” promised by technology. Much of today’s digital tech reduces social interaction and rewards individualism. For example, social media homogenizes our communities, online interactions separate us (at least physically), and device settings give us control over tiny things that don’t matter to emphasize our individuality rather than our collective power. Technology makes life easy; why choose to do a hard thing like democracy? That narrative threatens our willingness to understand each other’s stories.

Thinking of democracy as storytelling centers democracy “from below,” because anyone can tell and listen to stories. Sharing stories is a fantastically powerful human skill that we must practice and celebrate. Storytelling is also a joy that connects us and, like democracy, helps us build our shared world. We just have to listen.

REFRAMING WORK AS A DEMOCRATIC PRACTICE

Andre Vinicius Leal Sobral
Digital Technology for Democracy Lab, University of Virginia

Democracy is a single word that encapsulates many meanings. It refers to its Greek root, the people's rule, as well as the workings of a political system with elements including elections, votes and mandates. Beyond this, it also points to a broader set of cherished values. Democracy as a political system, according to the idealist John Dewey, requires the assumption that every human being is, in principle, well intentioned and intelligent.[1] Without this belief, the very concept becomes hollow. Any system of values and political participation that operates under the condition of unequal participants, perverse motivation, or uneven power will, given enough time, degenerate into an autocracy.

This is why, despite holding recent elections with popular participation, legitimate results, and the rotation of power between parties, the recent history of the United States is one of institutional erosion and unprecedented democratic backsliding. While democracy is still widely idealized as the better choice by the public,[2] interpretations of what democracy means change over time and are actively disputed by extremist actors who capture unprecedentedly large audiences enabled by information technologies.[3] The apparent solidity of institutions has offered in the past some protection against the worst excesses of these groups, but it has become increasingly evident that institutions do bend under economic and political pressures. This suggests that the foundation of every democracy is, fundamentally, its daily practices.

Institutions are built and maintained by the political will of its citizens. Their permanence is always under tension, as they are not mechanical byproducts of laws, buildings or technologies. We must understand democracy as a way of life rather than a formality,[4] in which our daily practices, spoken words, technologies, and social organization incorporate the values necessary for the system's continuation. In opposition to this, authoritarianism is born out of daily practices that establish inequality. It first nourishes the perception of difference, followed by an understanding of disparate capacities—often morally framed through the concept of merit—which then becomes the foundation of an accepted and naturalized hierarchy.

Similar to democracy, our cellphones, applications, websites, artificial intelligence and the Internet itself do not exist independent of our culture. While they hold a vast potential to produce democratic experiences, they are ultimately being employed to reinforce the hierarchies and inequalities of the current system. These technologies are increasingly used for state

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1 John Dewey, *Creative Democracy: The Task Before Us*, Progressive Education Booklet No. 14 (Columbus: American Education Press, 1939), 3.

2 Pew Research Center, "Attitudes Toward Different Types of Government Systems," February 28, 2024, https://www.pewresearch.org/global/2024/02/28/attitudes-toward-different-types-of-government-systems/.

3 Oliver Fernando Hidalgo, "Conceptualising Digital Democracy — From Technocracy and Populism to a New Concept of Democratic Authority and Participation?" *Social Sciences* 15, no. 3 (2026): 175, https://doi.org/10.3390/socsci15030175.

4 John Dewey, "Democracy as a Way of Life," in *John Dewey: The Reconstruction of the Democratic Life*, ed. Joseph Nathanson (New York: Charles Scribner's Sons, 1951), 92, https://doi.org/10.1037/11125-004.

surveillance,[5] workplace,[6] workload intensification[7] and job screening.[8] Such applications are designed to increase control, diminish human agency, and narrow the scope of possibilities. By removing instances of human contact, they reduce friction but also negate genuine human connection. In fact, these function as anti-democratic technologies[9] in their current state, as they are actively reducing the possibilities of liberty, expression, and equality.

However, when democracy is understood as a moral ideal rather than merely a political system, we must conclude that if modern technology is a product of democratic forces—such as free thinking, collective effort and public financing—it should always be made in behalf of the broadest public welfare.[10] In the field of social media, it should be used not to sell us products or extract our attention, but to help develop a collective public voice and expand our capacity to learn and communicate. The data produced by this collective work should be considered as part of the commons[11]—a national expression indicative of popular will and public sentiment.

If we take democracy as a way of life, it should not exempt our economic lives. Our workplaces cannot be treated as autocratic spaces, as their practices, patterns and behaviors inevitably affect our politics and social relations. Work as a democratic practice demands that we move beyond boss-worker relations, which are not only hierarchical but often premised on the complete submission of the worker. Workers do not live separate existences in and out of their jobs; they should be able to exert democratic participation in their professional lives.[12] Arguments for workplace authority weaponize terms such as "technical expertise" and "efficiency," to justify all manner of tyranny. These measures aim not for the productivity of the company or the welfare of the worker, but for the private interest of the employer in the form of profit.

A democracy cannot be truly complete while at least a third of our lives[13] are governed by autocratic values, structured to increase economic inequality. Citizens need to recognize both their limitations and capabilities in a political system. They must map their potentials, organize into democratic cooperatives, and replace autocratic infrastructures and technologies with democratic alternatives. Ultimately, it is not solely voting and electoral disputes that shape a political system; rather, it is the fundamental way of life that must become democratic.

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5 U.S. Department of State, "Announcement of Expanded Screening and Vetting for Visa Applicants," June 2025, https://www.state.gov/releases/office-of-the-spokesperson/2025/06/announcement-of-expanded-screening-and-vetting-for-visa-applicants.

6 Robert Booth, "A Third of UK Firms Using 'Bossware' to Monitor Workers' Activity, Survey Reveals," *The Guardian*, September 14, 2025, https://www.theguardian.com/world/2025/sep/14/uk-firms-bossware-monitor-workers-activity.

7 Aruna Ranganathan and Xingqi Maggie Ye, "AI Doesn't Reduce Work — It Intensifies It," *Harvard Business Review*, February 2026, https://hbr.org/2026/02/ai-doesnt-reduce-work-it-intensifies-it.

8 Jack Simon and Oliver Smith, "Computer Says No: Are AI Interviews Making It Harder to Get a Job?" *BBC News*, 2026, https://www.bbc.com/news/articles/clyznzrqeggo.

9 Martin Moore, Democracy Hacked: How Technology Is Destabilising Global Politics (Simon and Schuster, 2018).

10 John Dewey, "Democracy as a Way of Life," in *John Dewey: The Reconstruction of the Democratic Life*, ed. Joseph Nathanson (New York: Charles Scribner's Sons, 1951), 92, https://doi.org/10.1037/11125-004.

11 Creso M. Sá and [J.] Grieco, "Open Data for Science, Policy, and the Public Good," Review of Policy Research 33, no. 5 (2016): 526-43, https://doi.org/10.1111/ropr.12188.

12 Ibid, 95.

13 U.S. Bureau of Labor Statistics, "American Time Use Survey — 2024 Results," news release, June 26, 2025, https://www.bls.gov/news.release/atus.htm.

NOT-SO-QUIETLY ADAPTING

Aashka Dave
Digital Technology for Democracy Lab, University of Virginia

When I think back to summertime as a child, it was chiefly defined by the amount of time spent outside. A day where we didn't go outside was rare, predicated on things like rain or parental plans. Today, that seems unlikely, if not downright undesirable. As someone living in Southern U.S., where it is excessively hot and humid in the summer, spending a whole day outside in the middle of July is often the last thing I want to do. My experience of summer changed as our world warmed. How I remember summers versus how I live them now are two different things, but this is something I rarely bring up in conversation, much less hear others around me discuss.

We can all feel the world changing around us, but it is the aberrations, or big moments, that make us pause and think. One such moment happened in 2023, when the US Department of Agriculture updated its plant hardiness zones.[1] These zones, which resemble horizontal stripes across a map of the U.S., use 5-10 degree Fahrenheit increments to indicate the average minimum temperature in a given location over the past 30 years. The map can guide planting decisions, indicating which plants might thrive where.

With the map released in 2023, almost half the country moved up a sub-zone—the equivalent of about five degrees Fahrenheit. While this does not sound like much, it reflects what many gardeners and farmers might have observed through their own experiences and memories—the season for growing tomatoes shifted, or a more warm-weather plant now flourishes where it might not have ten years ago. In a hundred years, will a plant once thriving in Georgia find a happier home in Maryland?

And yet the 2023 map of hardiness zones reflects the past—a snapshot of specific years, despite a climate trajectory that has continued to change. Until 2033, it will remain official governmental guidance, despite its dated nature. The hardiness zones provide just one example of how official frameworks around climate change lag behind what most of us experience every day.

Like plants, as climate change impacts intensify, we all start making quiet adaptations—quiet observations, decisions, and actions about the best places for us to grow and live, possibly even without thinking about them too much. In the absence of meaningful top-down interventions to mitigate the impacts of climate change, I argue we should make those quiet decisions explicit, drawing attention to the ways we're changing, adapting, and thinking from the bottom-up about how we want to live.

What might this do? When we talk about how we are approaching the present—especially as it relates to a different past—we engage in a collective process of sensemaking that can, in turn, form

1 Leslie Cameron and Kirsten Conrad, "New USDA Plant Hardiness Zone Map and Adapting to the Changes," Master Gardeners of Northern Virginia, January 10, 2024, https://mgnv.org/climate-change/new-usda-zone-map/.

the basis for action.[2] We are making small adaptations visible, recognizing what is happening around us, and, by giving voice to these small observations repeatedly, document a slow change with local, social, and global implications.

Digital technology can certainly be used for climate-focused mobilization or citizen science, for example, but it is an imperfect means of action that is not necessarily inclusive of people most affected by climate change. In 2024, 2.5 billion people still lacked internet access globally.[3] In the U.S. only 57 percent of households where adults were making less than $30,000 had broadband at home in 2025.[4] Collective action and vocal adaptation therefore present a notable alternative; they foreground daily our climate experiences as a critical form of sensemaking and expertise, leveraging a mechanism for change that is potentially more accessible to larger groups of people.

Right now, nationwide climate efforts are faltering under political headwinds. In the absence of top-down actions, bottom-up efforts must prevail. To amplify that work, our individual moments of noticing and sensemaking must become visible topics of conversation to generate momentum.

These conversations might happen in counterpublics, mutual aid groups, or something else entirely.[5] What matters is that, at the local level, we do not grow accustomed to slow changes simply because we observe and adapt quietly. By refusing quiet adaptations, we have an opportunity to give voice to one of society's most significant challenges, collectively pushing for more. Instead of waiting for a news hook like a hardiness zone update, we can trust our own experiences enough to initiate the work that has to happen.

This work is inherently democratic and, crucially, not necessarily digital or technology-based. Rather, if we take as a central premise that how we live changes on a regular basis, and is something we make sense of through the world around us, then we are all empowered to adapt to climate change. In such a world, there is not necessarily a need for climate action as a top-down process, because we all as a collective have the experience—and therefore knowledge—to take action and adapt.

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2 Brenda Dervin, "An Overview of Sense-Making Research: Concepts, Methods, and Results to Date" (paper presented at the annual meeting of the International Communication Association, May 1983), https://www.ideals.illinois.edu/items/2438/files/Dervin83a.htm.

3 Heather Johnson, "About 2.5 Billion People Lack Internet Access: How Connectivity Can Unlock Their Potential," World Economic Forum, September 25, 2024, https://www.weforum.org/stories/2024/09/2-5-billion-people-lack-internet-access-how-connectivity-can-unlock-their-potential/.

4 "Internet, Broadband Fact Sheet." Platforms & Services. *Pew Research Center*, November 20, 2025. https://www.pewresearch.org/internet/fact-sheet/internet-broadband/

5 Nancy Fraser, "Rethinking the Public Sphere: A Contribution to the Critique of Actually Existing Democracy," *Social Text* 25/26 (1990): 56-80.

CAN YOU BUILD "DIGITAL DEMOCRACY FROM BELOW" AT YOUR JOB?

Karina Ripley
School of Engineering & Applied Sciences (SEAS), University of Virginia

The same week that I attended the Digital Democracy from Below Workshop hosted by the Digital Technology for Democracy Lab, I completed the paperwork for my annual employment review. The cover page of my review packet, provided to me by SEAS, featured a table called "metrics" that included the following, in this order: H-Index; number of citations; external grants awarded; external proposals submitted; and research expenditures. This is the first information that my chair, dean, and other administrators see when they review my work over the previous year.

As academics, researchers, and practitioners, we face a bind: on the one hand, we hope to stay true to our commitment to supporting a thriving democracy; on the other hand, we need to make our work legible to our employers so we can keep our jobs. Sometimes these two goals can be accomplished simultaneously, but often times they are divergent or even mutually exclusive. The crucial questions here are: what type of work can be made visible, quantifiable, and measurable? What resists being counted? How do these metrics shape the kinds of projects we take on—and ultimately our ability to maintain our employment?[1]

As someone who volunteers with a labor union, much of the intellectual community I have built is rooted in collective attempts to improve our working conditions and the lives of our students. Can I list these activities in response to the question "how have you built networks across campus over the past year?" Can I explain that I "demonstrated leadership skills" when I helped organize a community town hall on collective bargaining—one that brought together hundreds of union members, Charlottesville residents, and UVA staff, faculty, and students? Does fighting for increased wages for our graduate students count as helping to "guide them through their degree program"? Is the kind of work necessary for building and maintaining democracy—including workplace democracy—the kind that generates citations?

We spend a significant portion of our waking hours at work, so it makes sense that we would want to dedicate that time toward doing some good in the world.[2] Our employers are often keen to sell us jobs that fit this desire. Today, if you visit UVA SEAS's website, you'll be greeted in large, bold font: "Making the World a Better Place." The companies hiring our students make similar pitches. Meta claims prospective employees can "help us build the future of human connection and the technology that makes it possible."[3] Dominion Energy says it helps to "build a better future."[4] Even Northrop Grumman promises employees will "contribute to technology

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1 Juan Pablo Pardo-Guerra, *The Quantified Scholar: How Research Evaluations Transformed the British Social Sciences* (Columbia University Press, 2022).

2 Erin Cech, *The Trouble with Passion: How Searching for Fulfillment at Work Fosters Inequality* (University of California Press, 2021).

3 Meta, "Meta Jobs & Careers," 2026, https://www.metacareers.com/.

4 Dominion Energy, "About," 2026, https://www.dominionenergy.com/en/About.

that's transforming the world."[5] This language of passion and impact has saturated our zeitgeist to the point that it has become common sense: if you want a positive effect on the world, find a job at an organization dedicated to doing so.

But trying to "do good" in jobs that have specific performance metrics can skew the kinds of projects we pursue. To conduct truly community-led research that contributes to a vibrant and thriving digital democracy, we need to put in the effort of building mutual relationships and trust. This is often not the kind of work that generates citations or even grant proposals. It means showing up to community events. It means making promises and keeping them. It often means doing things on a volunteer basis, without grant assistance—and this has only become more important with recent cuts to major funding agencies like the National Institutes of Health and the National Science Foundation.

This type of labor, often categorized as "service work" when it is even categorized at all, is by far the least valued aspect of our jobs, despite how vaunted the idea of "making an impact" is for both public and private organizations. A lot of service work doesn't get counted at all or, worse, could actively count against you, especially in the case of union organizing. In thinking about how we can direct our work toward fostering a spirited and robust democracy, we may also need to think about what can be accomplished at our day jobs, what must be done in the workplace, and what cannot.

5 Northrop Grumman, "Careers," Northrop Grumman, 2026, https://www.northropgrumman.com/careers.

AI AS ANTI-DEMOCRATIC TECHNOLOGY[1]

Tamara Kneese
Partnership on AI
University of Virginia Environmental Institute

The kind of AI being sold to the public is a fundamentally anti-democratic technology.[2] Anti-democratic forces are intensely investing in AI infrastructure without a real purpose, other than reaping the benefits of financial speculation and the consolidation of power for a small few. It is alarming to witness the proliferation of massive data centers when many of them are not even connected to power sources, and there is not currently enough renewable energy available for them to operate, which means that many data centers rely on gas plants.[3] Data centers are being used to grow the wealth of tech oligarchs and companies that are explicitly undermining democratic norms and workers' rights while harming the environment and vulnerable groups.

My research on democracy and AI lies at the intersection of three concerns. First, grassroots and policy-driven movements against the most harmful forms of data centers and related energy infrastructures, including policies for fostering responsible data center development or halting it outright through moratoria. Second, the power of technology companies and their imposition of AI on communities, through both products that are incorporated into existing systems without user or public input, as well as the material, visible "power-grabs"—meant both ways—that data centers entail. Third, procurement and the levers of power at a local, municipal, state, or regional level that officials have when it comes to negotiating with data center operators and utility companies, and with the larger technology ecosystem, to ensure that the communities most directly impacted also have some input.

I am trying to reconcile community-led resistance and policy solutions with grassroots, bottom-up activism within tech companies.[4] For the past five years, I've been a participant observer in tech worker activism around climate change, thinking about the potential of broader coalitions and cross-sector, transnational solidarity when it comes to providing mechanisms for gathering viable counter-data to push back against companies' misleading forms of selective disclosure. Tech companies tell communities and local government officials that data centers will bring a specific number of jobs and consume only certain amounts of water or energy. They claim to be using renewable energy, and thus residents need not worry about the effects of pollution. While communities may suspect that these claims are not true, how can they create enough evidence to really push back against powerful companies with their lobbyists and lawyers?

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1 The essay is adapted from remarks delivered at the Digital Democracy from Below convening, University of Virginia, February 2026.

2 Tamara Kneese, "Why Are Tech Oligarchs So Obsessed with Energy and What Does That Mean for Democracy?," Tech Policy Press, June 5, 2025, https://techpolicy.press/why-are-tech-oligarchs-so-obsessed-with-energy-and-what-does-that-mean-for-democracy.

3 Matthew Gault, "Data Centers are Easy to Build. Powering them is Complicated, Slow, and Expensive," *404 Media,* July 29, 2016, https://www.404media.co/data-centers-power-energy-grid-epa-clean-air-act/; Ella Feldman, "Data Centers Plan to Boost On-Site Gas Power 57-Fold, BNEF Says," *Bloomberg Law*, March 9, 2026, https://news.bloomberglaw.com/health-law-and-business/data-centers-plan-to-boost-on-site-gas-power-57-fold-bnef-says.

4 Tamara Kneese, *Turning the Tide: Climate Action In and Against Tech* (Data & Society, 2025), https://doi.org/10.69985/GPTR1789.

Tech workers have their own forms of expertise, forged from being within companies where AI is developed and assessed, and they understand how corporate decision making happens in practice. Tech workers can also use their position to pressure their employers on climate or other social issues, forming unions and voicing dissent—even when threatened by mass layoffs—to make room for generative AI and infrastructure investments. In some cases, tech workers join larger coalitions, learning to work with grassroots community organizations, local press, and local government officials who might be activated and wanting to resist data center encroachment.

These broader coalitions can resist not only data centers, but larger AI supply chains, including the extraction of critical minerals,[5] and influence how control over resources feeds into geopolitical struggles. How do we talk about AI in tandem with electronics manufacturing and the much longer histories of resistance to pollution and occupational health concerns that show up in the broader tech industry historically? There is currently a lot of room to have these conversations around connections–across, mining communities, electronics manufacturing and pollution, and data centers–and learn from communities that have been on the forefront and on the front line of both climate change and industrial pollution.

Along with former colleagues from Data & Society, I have researched the possibility of providing city officials with more granular information about vendors that they are vetting as part of responsible AI procurement and governance. GovAI Coalition, for example, is creating guidelines and educational materials to help city officials get better data about the environmental impacts of AI products, connecting the local deployment of AI systems to other local decision-making around data centers and resource use.[6]

While many public sector workers may focus their critical attention on the deployment of AI in government services and for purposes of surveillance—both in their own workplaces with AI-assisted data collection on workplace behavior and in public settings with products like Flock—there is also an opportunity to connect these concerns about AI use with the problems of undemocratic data center planning and permitting. One point of leverage is the procurement process, but the Responsible AI (RAI) workers in government who are focused on AI use cases are not necessarily looking at how AI's environmental impacts show up locally, in terms of data center siting and energy and water use or pollution. AI's uses and harms are often detached from the environmental and social impacts of the material infrastructures that facilitate AI. What are AI data centers being used for? Is AI being used to surveil immigrants and incarcerate people? Is it being used to drill oil and gas or threaten workers' jobs? We need to more effectively connect, contextualize, and contest the technical metrics generated by people from within the tech industry and link activists who have left the tech industry with public sector workers who are making decisions about what technologies should be used in a public context.

Within tech companies, responsible AI and other workers tasked with damage control do not have a great deal of power. Workers in general, even those within white collar tech positions, are feeling the squeeze as their employers invest in AI and use it as a cudgel to discipline labor. Unions within tech, where workers are pushing back against data centers and AI-related labor

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5 Tatiana Carayannis et al., *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), https://www.ias.edu/sites/default/files/Critical-Minerals-Workshop_Summary-Report.pdf.

6 Leila Doty et al., "Introducing a New Coalition Blog Series: 'AI & the Environment,'" Substack newsletter, *GovAI Coalition's Substack*, March 26, 2025, https://govai.substack.com/p/introducing-a-new-coalition-blog.

and military harms, can collaborate with public sector unions also grappling with the impacts on both workers and communities. There is a need for bottom-up democratic movements in and across all these contexts.

What kind of technology can serve the public? And what gets us beyond this idea of harm reduction or compliance, which happens not only within government but also within companies, toward something more? How do you balance that approach with a grassroots response toward data center moratorium bills that gaining momentum, harnessing the anger many people have in what has become a bipartisan issue in the US with similar sentiments bubbling up around the world? This is something that leads to strange coalitions of people who do not have much politically, economically, or socially in common. People who are coming to understand that these technologies and their infrastructures are not serving their needs, and that they might be turned against them. Through bottom-up policy measures and grassroots coalition building, supported with viable counter-data, public sector responsible AI practitioners, climate conscious tech workers, and impacted communities may be able to hold companies accountable.

A NEW NEW DEAL FOR THE 21ST CENTURY

MC Forelle
School of Engineering & Applied Science, University of Virginia

In the early 1930s, the United States was reeling. The world was barely a decade out of the first war of the modern era, the War to End All Wars, and already tensions were building again in Europe. The nation's financial institutions had collapsed and vast tracts of the country were experiencing unemployment, poverty, and starvation. It was a time of profound economic, social, and political instability.

To guide the nation out of this volatility, President Franklin Roosevelt initiated a series of programs eventually known as the New Deal. These included the allocation of massive federal investment in employment and infrastructure through programs like the Public Works Administration, which created thousands of jobs building public works projects like bridges, highways, hospitals, and schools. The New Deal is largely credited with lifting the country out of the Great Depression and setting the stage for the prosperity it enjoyed post-World War II.

Today, it is hard not to feel like we are repeating history. Geopolitical tensions are heating up, as are the planet's surface temperatures. Economically, the U.S. appears to be on the verge of a major recession; socially, the country is struggling with the rise of fascism. Against this backdrop, the U.S. public is being inundated with promises that automation and artificial intelligence will make many jobs obsolete. Companies, governments, and public institutions are being pressured to adopt AI-driven tools, even when many do not understand how to use them.[1] This is resulting in massive investments in AI systems that are owned by fantastically wealthy private individuals who espouse views that are anti-social at best and openly eugenicist at worst.[2]

But despite all this investment in AI, there is ample evidence that human interaction is crucial to learning, social development, and sense of community. However, public investment in the social infrastructures that cultivate human interaction has been on the decline for decades; a period that corresponds, not coincidentally, with the rise of Big Tech and techno-solutionism.[3] What we need, then, to move toward a better tomorrow is to NOT develop more privately owned AI-driven technologies to fill in for these vital public infrastructures. We need public investment in infrastructures that are built by people, for people.

This is not an "anti-AI New Deal." Quite the opposite: it would make space for AI to do what AI does best. It is a powerful tool for identifying patterns in large data sets, useful for

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1 Stanford University Human-Centered Artificial Intelligence, *The 2026 AI Index Report* (Stanford University, 2026), https://hai.stanford.edu/assets/files/ai_index_report_2026.pdf.

2 Timnit Gebru and Émile P. Torres, "The TESCREAL Bundle: Eugenics and the Promise of Utopia through Artificial General Intelligence," *First Monday* (2024), https://doi.org/10.5210/fm.v29i4.13636.

3 Reijer Hendrikse, Ilke Adriaans, Tobias J. Klinge, and Rodrigo Fernandez, "The Big Techification of Everything," *Science as Culture* 31, no. 1 (2022): 59-71, https://doi.org/10.1080/09505431.2021.1984423.

pharmaceutical research on novel drug compounds,[4] personalized medicine,[5]climate change modeling,[6] and locating vulnerabilities and bugs in software.[7] It is a specialized tool for specialized uses, which the public should invest in and benefit from.

Alongside this, the U.S. must fund people doing what we do best: creativity, critical thinking, and mutual care. Rather than investing in AI-driven robotics to work in classrooms, hospitals, or elder care, we should pass the reforms needed to get more people trained and hired into those spaces. Instead of building AI chatbots to serve as therapists, doctors, tutors, and companions, we could expand funding for degrees in social work, medicine, and teaching, and support the development of community centers and other third spaces where people can connect with each other. We could stop funneling talented and promising students and workers into academic programs and corporate jobs aiming to build the next AI-driven thingamajig, and instead make it attractive and exciting for people to work on projects that explore social solutions and provide social support. This would require broadening public research priorities beyond AI development and expanding programs like student loan forgiveness for people working in nonprofits or civil service.

Accomplishing all these changes would not be easy. The tech oligarchs who stand to gain the most from the unquestioned and unchecked integration of AI use their vast funds to capture regulatory mechanisms and ensure they remain weak.[8] Moreover, it would require massive shifts not only in economic policy and funding priorities, but in the very way that the hegemonic culture in the U.S. thinks about technology.[9]We would have to move away from technosolutionist thinking that prescribes "technological innovation" for every social ill, and instead consider whether there are existing remedies that just need proper funding, or forms of expertise we've left untapped.[10]

The twentieth century's New Deal built infrastructures that transformed America's physical infrastructures and economic future. We still drive on the highways it erected and teach in the schools it built. But the legacy of the New Deal is not just in the bridges and hospitals and programs it built, but in the forms of social cohesion, communal interdependence, and mutual care that it represented. We do not need to submit to the inevitability of the Age of AI. We can refocus our collective energies away from facilitating the private forces of AI "advancement" and toward supporting the communal efforts of care and cohesion, to building a vision of society whose benefits could outlast us all.

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4 Alejandro Blanco-González et al., "The Role of AI in Drug Discovery: Challenges, Opportunities, and Strategies," *Pharmaceuticals* 16, no. 6 (2023): 891, https://doi.org/10.3390/ph16060891.

5 Al-Dali E. Parekh et al., "Artificial Intelligence (AI) in Personalized Medicine," *Annals of Medicine and Surgery* 85, no. 11 (2023): 5831-5833, https://doi.org/10.1097/MS9.0000000000001320.

6 Gustau Camps-Valls et al., "Artificial Intelligence for Modeling and Understanding Extreme Weather and Climate Events," *Nature Communications* 16, no. 1 (2025): 1919, https://doi.org/10.1038/s41467-025-56573-8.

7 AI Security Institute, "Our Evaluation of Claude Mythos Preview's Cyber Capabilities," April 13, 2026, https://www.aisi.gov.uk/blog/our-evaluation-of-claude-mythos-previews-cyber-capabilities.

8 Julie Cohen, "Oligarchy, State, and Cryptopia," *Fordham Law Review* 94, no. 2 (2025): 563-626.

9 Woewe Barendregt et al., "Defund Big Tech, Refund Community," *Tech Otherwise* (2021), https://doi.org/10.21428/93b2c832.e0100a3f.

10 Lee Vinsel and Andrew Russell, "The Innovation Delusion," *The Atlantic*, 2020.

5. RESISTING, ORGANIZING AND RE-BUILDING

ORGANIZING AND EVERYDAY TECHNOLOGIES OF LIBERATION

Megan Wiessner
University of Richmond

Community groups, social campaigns, and workers today are engaged in existential fights against new forms of oppression and inequity enabled by digital technology: from algorithmic wage theft and nonconsensual automation in learning environments, to digital surveillance and energy-intensive infrastructural buildouts.[1] Yet the work undertaken to resist Flock cameras, data centers, or AI companies' appropriation of people's writing and likenesses also depends fundamentally on digital technologies. New research and tactics circulate via hyperlinks, podcast feeds, and online forums; groups coordinate through Voice over Internet Protocol (VoIP) and rely on cloud storage of documents.[2]

Anyone who has been involved in movement organizing in the past two decades knows instinctively that digital technology has become an indispensable part of this work. We may hate Google, but we might still use Google Groups and Drive when neighbors and comrades aren't able to switch to Etherpad or Framalistes. There is nothing especially emancipatory about a .CSV file—a format created for institutional and corporate information processing—but who could organize strike turnout in 2026 without a spreadsheet? When we automate routine administrative tasks like sending out emails via listservs, no one worries that we are demeaning our labor power and creative capacity.

As participants in fights against technological abuses, organizers know well that technology is never neutral.[3] But the issue is not, either, that we organizers are hypocrites or fools. Rather, we operate on a barely articulated, prefigurative faith that technology and freedom are not irreconcilable.[4] Why? Because digital technology has already become part of our practices of freedom, even as our practices of freedom continue to exceed those technologies.

This might seem at first to have something to do with the simple, infrastructural qualities of those tools and processes to which organizers turn repeatedly: messaging protocols; collaborative document editing; web-based forms; database systems. These are tools for organizing

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1 Tiziano Bonini and Emiliano Treré, *Algorithms of Resistance: The Everyday Fight against Platform Power* (Cambridge, MA: The MIT Press, 2024); Sebastián Lehuedé, "Big Tech's New Headache: Data Centre Activism Flourishes Across the World - Media@LSE," *Media@LSE*, November 2, 2022, https://blogs.lse.ac.uk/medialse/2022/11/02/big-techs-new-headache-data-centre-activism-flourishes-across-the-world/; Madiha Z. Choksi et al., "Student Privacy Activism: Protesting Radical Digital Transformation in EdTech," *Journal of Information Policy* 14 (December 2024): 599-630, https://doi.org/10.5325/jinfopoli.14.2024.0017; Jude Joffe-Block, "Why Some Cities Are Ditching Their Flock License Plate Readers," NPR, February 19, 2026, https://www.npr.org/2026/02/17/nx-s1-5612825/flock-contracts-canceled-immigration-survillance-concerns.

2 Leah A. Lievrouw, *Alternative and Activist New Media* (John Wiley & Sons, 2023).

3 Tonya Nguyen, Darya Kaviani, and Niloufar Salehi, "It Actually Doesn't Feel Very Mutual:' How Technology Impacts the Values of Mutual Aid Groups in Practice," in *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems* (New York: ACM, 2025), 1-18, https://doi.org/10.1145/3706598.3714192.

4 Christina Dunbar-Hester, *Low Power to the People: Pirates, Protest, and Politics in FM Radio Activism*, Inside Technology (Cambridge, MA: MIT Press, 2014); Mitch Perkins, "Autonomous Movements and Their Media," *Journal of Communication Inquiry* 47, no. 4 (2023): 380-98, https://doi.org/10.1177/01968599221140382.

addresses, files, slogans, links, and phone numbers; they are not decision-making or complex problem-analysis systems that control our thinking. But it would be unwise to try to define helpful or harmful technologies on this kind of formal technical basis alone. Even very simple and analog media nudge users towards certain habits of relation, problem definition, and statistical modes of assessment, realities which always require reflection and compromise. There is no clean line between DIY communication practices and more complex forms of coordination. This is especially true as digital technologies that once seemed elaborate or fantastical become cheaper and more accessible. Many mutual aid groups now use project management software and real-time videoconferencing; some may already be experimenting with machine learning, even as they grapple with the ecological costs of doing so.[5] Rather than trying to demarcate the new from the old or the good from the bad, it might be wiser not to pretend that we know in advance which types of technologies these struggles require.

So how else might we think about which technologies might prove useful on the path to more democratic, liberatory futures? Another answer is all around us: those already being employed in the pursuit of these futures. While this might sound tautological, it would be better thought of as existential. There are no answers to these questions which we do not come up with, and realize, ourselves. It is up to us to decide which technologies serve us and which we want to incorporate into our practices of being together. Although we might not see it this way during the day-to-day work of organizing, these uses of digital technology show us what technology could be: auxiliary tools in the adaptive, unending transformation of sociality and solidarity, rather than mechanisms of alienation and disempowerment. As organizers resist the latter, we prefiguratively demonstrate the former. By fighting and working together, organizers prove that new technical capacities can be governed and adopted according to need and collective assent, rather than bids for power and wealth. The key to the possible social futures of technology is not in the quantum computing lab or the AI hyperscale data center—it is everywhere there is a collectively managed Signal chat or spreadsheet.

5 Emma Strubell, Ananya Ganesh, and Andrew McCallum, "Energy and Policy Considerations for Deep Learning in NLP," *Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics* (2019): 3645-3650, https://doi.org/10.18653/v1/P19-1355.

REFUSING THE DIGITAL IMPERATIVE

Nicole West Bassoff
Digital Technology for Democracy Lab, University of Virginia

What happens when we append the "digital" to "democracy"? Some advocates interpret digital democracy as a project of digitizing democracy, or incorporating digital technologies into the workings of democratic systems.[1] In this view, digital democracy is a matter of upgrading democracy's infrastructure to the next-gen tech, making the public sector—often disparaged as a bloated or "backward" leviathan—more efficient and rational. This mentality has steered some public officials toward the belief that digitizing public services—for instance, making cities "smart"—would also make them more democratic in the process. It has rarely turned out that way.[2]

Reformers concerned with the unequal or harmful effects of the so-called "digital revolution" often feel a sense of urgency to make sure that the revolution benefits everyone. They may deploy the concept of digital democracy to describe projects of integrating democratic or progressive values into digital technology, making our digital practices more accessible, equitable and just.[3]

Both of these perspectives tend to locate the threat of, or potential for, revolution within the affordances and design of technology itself. The moment we conceive of something called digital democracy, we are almost doomed to seek ways of perfecting the digital in the service of democracy—as if we already know what that thing called democracy is and should be.

A more radically liberatory way of thinking about digital democracy from below is as a refusal to participate in the imperative of digitization, or a refusal to assume that digitization equates to progress.

This refusal would mean identifying the revolutionary potential within people instead of technology. Rather than focusing reform efforts on making technology more politically palatable, we ought to cultivate political discomfort with the assumption that the integration of the digital into any and all areas of human life is inevitable, necessary, and finished. We should begin by asking what is at stake when we rush to append the digital to ourselves and to democracy.

As scholars in my field of Science and Technology Studies (STS) argue, technological transformations shape and reflect ongoing constitutional change much the same way that legal

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1 See, e.g., the related idea of e-democracy: https://www.ebsco.com/research-starters/social-sciences-and-humanities/e-democracy.

2 Bianca Wylie, "Searching for the Smart City's Democratic Future," Centre for International Governance Innovation, August 13, 2018, https://www.cigionline.org/articles/searching-smart-citys-democratic-future. Ben Green, *The Smart Enough City: Putting Technology in Its Place to Reclaim Our Urban Future* (MIT Press, 2019).

3 See, e.g., the work of the Center for Digital Democracy: https://democraticmedia.org/.

transformations do.[4] If we want to advance today's most important political and legal struggles, we cannot ignore the constitutive role that digital technologies play in making up who "we" are as people and political collectives, as they are integrated into everything from our governments to our neighborhoods to our relationships to our bodies. This calls to mind what U.S. Supreme Court Chief Justice John Roberts wrote over a decade ago about "modern cell phones": "[they] are now such a pervasive and insistent part of daily life that the proverbial visitor from Mars might conclude they were an important feature of human anatomy."[5]

If this profound integration is tacitly constitutional, quietly re-organizing presumed rights and responsibilities, then it should be subjected to intensive political scrutiny. Political reformers know that the law as currently written and interpreted should not set limits on our visions of social progress. Yet a less common sensibility is that neither should today's technology—nor its makers and their projections. It is precisely at the moment when we name the very serious integration of the digital and the human that we risk taking it too seriously and making it seem imperative: because digital technologies appear integral, they must be more deeply integrated.

The digital imperative operates through narratives that foreclose resistance. Once one begins to look for these narratives, they appear everywhere.[6] The digital imperative is on display when lawmakers decide that the only people qualified to place limits on social media platforms and other digital technologies are the technologists who make them.[7] Or when The Washington Post Editorial Board scolds any politicians who call for bans on data center construction, insisting that "even if…the technology is moving too fast, it's too late to stop."[8] Or when the makers of AI tell us that artificial intelligence will soon surpass human intelligence, as if they have the power to define once and for all what (human) intelligence is and who has it.[9]

In the United States, we are taught to equate technological progress and social progress, to take pride in adapting quickly to new technology, and to shame and stigmatize technological refusal. In the cultural mainstream it is not a badge of honor to be called a luddite, a pessimist, or a NIMBY ("Not in My Backyard"). I shudder every time I see protestors offer up the conciliatory assurance that they are not "anti-technology"—a hedge necessary only because technological refusal is otherwise seen as a crime against progress. Digital democracy from below should be understood as a project to build a countervailing force to these narratives[10] through vital

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4 Margarita Boenig-Liptsin, "Public Trust in Computing: Analyzing Trust and Digital Technologies with the Constitutionalism Framework," *Philosophy of Law and General Theory of Law*, April 23, 2023, 95–110, https://doi.org/10.21564/2707-7039.1.275642; Sheila Jasanoff, "In a Constitutional Moment: Science and Social Order at the Millennium," in *Social Studies of Science and Technology: Looking Back Ahead*, ed. B. Joerges and H. Nowotny (Kluwer Academic Publishers, 2003); Lawrence Lessig, *Code and Other Laws of Cyberspace* (Basic Books, 1999).

5 *Riley v. California*, 573 U.S. 373 (2014), https://supreme.justia.com/cases/federal/us/573/373/.

6 See also Rebecca Williams' essay in this collection.

7 Jaron Lanier and Allison Stanger, "The One Internet Hack That Could Save Everything," *Wired*, February 13, 2024, https://www.wired.com/story/the-one-internet-hack-that-could-save-everything-section-230/.

8 Editorial Board, "Bernie Sanders's Worst Idea yet," *The Washington Post*, February 11, 2026, https://www.washingtonpost.com/opinions/2026/02/11/data-center-moratorium-bernie-sanders/. Note also that Jeff Bezos owns *The Washington Post* and sets the agenda of its Editorial Board; see: Nathan Robinson, *The Bezos "Post" Editorial Page Has Become a Mouthpiece for Pro-Billionaire Propaganda*, April 21, 2026, https://www.thenation.com/?post_type=article&p=594981.

9 Marco Quiroz-Gutierrez, "Sam Altman Thinks AI Will Surpass Human Intelligence by 2030. His Rival AI Billionaires Say It'll Be Even Sooner," Fortune, accessed May 7, 2026, https://fortune.com/2025/09/26/sam-altman-openai-ceo-superintelligence-technology/.

10 The examples above correspond to three narratives – of self-governance by experts, of technological inevitability, and of the equivalence between the human and the artificial – that I have written about with others in a statement for the 2023 Conference on AI & Democracy at Harvard University. See: https://drive.google.com/file/d/1rWdYe00zUQMvP7I7bQMfH-GrE7qDxgZ6/view.

processes of democratization that enable people to critically assess digitization and to dream of futures defined by new relationships among people, rather than by new relationships between people and their technologies.[11]

As individuals and communities, we will not always have the means, power or desire to refuse digital tools or to avoid being enrolled into projects of digital empire-building, as practiced so lucratively by billionaire tech CEOs.[12] But we can maintain a skepticism toward digitization's promises, and cultivate an awareness of how digital technologies might alienate us from our labor,[13] our thinking minds,[14] and one another.[15] We can acknowledge the power of technology to alienate us even from our own political agency—a problem that has concerned pre-digital thinkers from Hannah Arendt[16] to Martin Luther King, Jr.[17]—and empower ourselves to ask questions about the constitutional transformations happening under our feet.

There are plenty of developments already underway that offer lessons for politicians and scholars alike. My own preoccupation has been with collective refusals that defy the cultural odds in the U.S. Like when residents of Queens rejected a "done deal" to put an Amazon headquarters next to the largest public housing complex in the country in exchange for "tech jobs."[18] Or when municipalities fought back against the federally imposed national rollout of 5G wireless technologies without local control.[19] Or when school districts and state attorneys general recently (and successfully) sued social media companies on the unconventional grounds of "public nuisance," drawing comparisons to earlier tobacco and opioid litigation[20] and rejecting the longstanding assumption that digital platforms enjoy total immunity from liability in the U.S.

What I find worthwhile about these examples is not simply the attempt to say "no." It is the revelation that what seems technologically or legally "fixed" about the digital status quo can be made politically flexible—not by writing new digital code or law, but through the work of political collectives to form coalitions and articulate and assert constitutional claims in terms that refuse the digital imperative. Such intrepid acts mark the humble beginnings of digital democracy from below.

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11 See also Jonathan van Geuns' essay in this collection.

12 Karen Hao, *Empire of AI: Dreams and Nightmares in Sam Altman's OpenAI* (Penguin Press, 2025).

13 Mike Healy, *Marx and Digital Machines: Alienation, Technology, Capitalism* (University of Westminster Press, 2020).

14 Kenneth J. Saltman, *The Alienation of Fact: Digital Educational Privatization, AI, and the False Promise of Bodies and Numbers* (The MIT Press, 2022).

15 Sherry Turkle, *Reclaiming Conversation: The Power of Talk in a Digital Age* (Penguin Press, 2015).

16 Hannah Arendt, *The Human Condition* (University of Chicago Press, 2018).

17 Maria Popova, "MLK's Lost Lectures on Technology, Alienation, Activism, and the Three Ways of Resisting the System," *The Marginalian*, October 7, 2021, https://www.themarginalian.org/2021/10/07/mlk-massey-lectures/.

18 J. David Goodman and Karen Weise, "Why the Amazon Deal Collapsed: A Tech Giant Stumbles in N.Y.'s Raucous Political Arena," *The New York Times*, February 15, 2019, https://www.nytimes.com/2019/02/15/nyregion/amazon-hq2-nyc.html.

19 Nicole W. Bassoff, "Constitutional Infrastructures: The Politics of Urban Sovereignty in the 'Race to 5G,'" *Science, Technology, & Human Values*, June 27, 2025, https://doi.org/10.1177/01622439251348175.

20 Kennedy Aikey, "Is Social Media the Next Big Tobacco? Public Nuisance Litigation and the Limits of Section 230," *University of Cincinnati Law Review Blog*, April 3, 2026, https://uclawreview.org/2026/04/03/is-social-media-the-next-big-tobacco-public-nuisance-litigation-and-the-limits-of-section-230/.

GLOBAL TAX GOVERNANCE AND THE DIGITAL ECONOMY: THE LIMITS OF DEMOCRATIZING FROM BELOW?

Yujia He
Patterson School of Diplomacy and International Commerce, University of Kentucky

Michael Tyrala
Division of Public Policy, The Hong Kong University of Science and Technology

As Big Tech firms exploit existing rules to minimize their tax obligations, calls to reform the institutions of global tax governance that have historically favored capitalist elites in advanced economies have amplified. Progressive movements have garnered international pressure on the Organization for Economic Cooperation and Development (OECD) to undertake major reforms and address uneven power relations in international negotiations, which have historically produced a skewed distribution of taxing rights.[1] Despite increasing democratization of global tax governance, substantial challenges remain, particularly as intensifying hegemonic resistance threatens to negate reform efficacy and perpetuate power asymmetries. This essay outlines this complex issue and its underlying dynamics.

Historically, the basic architecture of the international tax system prioritized eliminating double taxation while neglecting (if not outright facilitating) offshore tax evasion and avoidance by multinational enterprises (MNEs) and high-net-worth individuals. It also skewed the allocation of taxing rights in favor of capital-exporting countries, where large MNEs tend to be headquartered, at the expense of capital-importing countries, where MNEs do much of their business. Negotiations conducted first under the League of Nations and then the OECD rendered non-OECD countries peripheral actors in global tax governance. The OECD's first major multilateral reform effort to address offshore tax evasion and avoidance, the 1998 Harmful Tax Competition Initiative, eventually failed following MNE lobbying and subsequent withdrawal of the Bush Administration in 2001.[2]

For Big Tech firms, especially US giants like Alphabet (Google), Amazon, Apple, Meta (Facebook), and others, the international tax system enabled the minimization of global tax obligations through offshore tax havens, transfer pricing manipulation, and other complex tax arrangements.[3] Unlike traditional manufacturing firms, digitalized business models built around hard-to-value intellectual property enabled tax avoidance on an even larger scale, since these firms could eschew conventional physical presence in most countries where they did business.

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1 Sol Picciotto, *International Business Taxation: A Study in the Internationalization of Business Regulation* (Cambridge: Cambridge University Press, 1992), https://www.taxjustice.net/cms/upload/pdf/Picciotto%201992%20International%20Business%20Taxation.pdf

2 Sol Picciotto, "Technocracy in the Era of Twitter: Between Intergovernmentalism and Supranational Technocratic Politics in Global Tax Governance," *Regulation & Governance* 16, no. 3 (2022): 634-652, https://doi.org/10.1111/rego.12351

3 Brad W. Setser, "The Spotty International Tax Record of Big U.S. Technology Companies," *Council on Foreign Relations*, July 28, 2024, https://www.cfr.org/articles/spotty-international-tax-record-big-us-technology-companies

The US Big Tech firms also aggressively lobbied Washington and other capitals[4] for tax breaks and against policies that could increase their taxes.[5] For example, in 2014, Facebook only paid £4,327 (US$6,642) in UK corporation tax while recording £105 million (US$161 million) in revenue, prompting extensive media coverage and a public outcry.[6]

In 2012, the G20 tasked the OECD with addressing the problem of offshore tax evasion and avoidance, and in 2015, the OECD launched the Base Erosion and Profit Shifting (BEPS) project. While it represented the most far-reaching reform of the international tax system to date, effective US obstructionism on behalf of its Big Tech MNEs meant that all substantive work on the digital economy was postponed.[7] The negotiations also excluded most non-OECD and non-G20 countries, leaving their priorities like a fairer reallocation of taxing rights unaddressed. Big Tech's tax avoidance spree escaped direct scrutiny yet again.

Yet the setbacks added momentum for progressive change from below.[8] Since the early 2000s, tax justice civil society organizations (CSOs) like the Tax Justice Network sprang up, joined forces with development CSOs, trade unions, investigative journalists, whistleblowers, and other allies to expose offshore tax evasion and avoidance and promote a tax justice agenda. While their direct influence in the global policy sphere was initially limited, their campaign efforts, alongside media coverage of whistleblower leaks and high-profile corporate tax avoidance scandals, bolstered demand for policy action nationally and regionally. CSOs increasingly found themselves invited to major negotiation forums as observers. The EU and emerging economies like India and China also became more assertive about curbing offshore tax evasion and avoidance. Coalitions of developing countries at the UN, like the G77 and the G24 criticized the exclusiveness of the BEPS negotiations on what were to become global rules.

This sustained pressure culminated in several notable successes. In 2016, the G20 mandated the OECD to invite all countries to the newly established Inclusive Framework on BEPS; by 2025, it had 148 members. In 2021, a two-pillar proposal was introduced as part of BEPS 2.0: Pillar One represents a minor but symbolically important reallocation of taxing rights toward countries where MNE sales occur (a win for developing countries); Pillar Two introduces a 15% global minimum tax on the largest MNEs (mostly affecting US MNEs).[9] A major agreement on Pillar Two was reached in 2023 by 138 countries, with implementation starting in 2024. What was once a radical tax justice pipe dream has gone mainstream.

Substantial challenges remain, however. While the Biden Administration signed on to Pillar

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4 Lukas Hakelberg, *The Hypocritical Hegemon: How the United States Shapes Global Rules Against Tax Evasion and Avoidance* (Ithaca: Cornell University Press, 2020), https://ecommons.cornell.edu/entities/publication/cb1cab48-112c-44a6-b24e-aeca3496add1

5 Skye Jacobs, "Big Tech Avoided $278 Billion in Corporate Tax over the Past Decade, Says Watchdog," *TechSpot*, April 17, 2025, https://www.techspot.com/news/107584-big-tech-avoided-278-billion-corporate-tax-over.html

6 Sam Gustin, "How Did Facebook Manage Such a Tiny UK Tax Bill? With Very Big Bonuses," *VICE*, October 13, 2015, https://www.vice.com/en/article/how-did-facebook-manage-such-a-tiny-uk-tax-bill-with-very-big-bonuses/

7 OECD, *OECD/G20 Base Erosion and Profit Shifting Project* (Paris: OECD Publishing, 2026), https://doi.org/10.1787/23132612

8 Justin Robertson and Michael Tyrala, *The Uneven Offshore World: Mauritius, India, and Africa in the Global Economy*, (London: Routledge, 2022), https://doi.org/10.4324/9781003161011

9 OECD, "Statement on a Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalisation of the Economy," *OECD*, October 8, 2021, https://www.oecd.org/content/dam/oecd/en/topics/policy-issues/beps/statement-on-a-two-pillar-solution-to-address-the-tax-challenges-arising-from-the-digitalisation-of-the-economy-october-2021.pdf

Two, the second Trump Administration immediately withdrew from it[10] until the OECD eventually acceded to the US-proposed "side-by-side" arrangement. This effectively shields US MNEs from key Pillar Two provisions, with one tax expert describing it as "a shift from multilateralism to selective cooperation".[11]

Within the Inclusive Framework, some developing country governments report being marginalized despite formal membership.[12] Moreover, most developing countries would gain little to no additional tax revenue from Pillar Two's 15% global minimum tax.[13] As for Pillar One, progress remains elusive. In the potential absence of a meaningful global systemic overhaul, governments have sought to preserve their taxing rights through national policies. Since 2016, over 20 countries have proposed or implemented digital services taxes (DSTs).[14]

Yet alarmingly, trade negotiations have also been weaponized to constrain countries' tax and digital policy autonomy. The first Trump Administration's tariff threats on countries implementing DSTs returned in full force with the second Trump Administration's global tariff push and threats of additional "revenge taxes", pressuring multiple countries (e.g., Brazil, Canada, France, India, Pakistan) to withdraw or delay their DSTs, while several developing countries (e.g., Cambodia, Ecuador, El Salvador, Guatemala, Thailand) were even forced to commit to not introduce any DSTs at all.[15]

The hegemonic exercise of raw power, motivated by self-interested goals of private Big Tech capital over public interest, risks selectively dismantling the historical multilateral progress toward international tax justice while perpetuating existing power imbalances and marginalization. Ensuring that all countries, not just the most powerful, can address the tax challenges of the digital economy is not merely a policy priority. It is the condition under which democratic governance of the global economy thrives.

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10 David Lawder, "Trump Effectively Pulls US Out of Global Corporate Tax Deal," *Reuters*, January 21, 2025, https://www.reuters.com/world/us/trump-declares-oecd-tax-deal-has-no-force-or-effect-us-2025-01-21/

11 Aruna Kalyanam, Chris Sanger, and Chris Miller, "How the 'Side-by-Side' Minimum Tax Accord Will Reshape Global Policy," *EY*, February 26, 2026, https://www.ey.com/en_id/insights/tax/how-the-side-by-side-minimum-tax-accord-will-reshape-global-policy

12 Julie McCarthy, "A Bad Deal for Development: Assessing the Impacts of the New Inclusive Framework Tax Deal on Low- and Middle-Income Countries," *Brookings*, May 16, 2022, https://www.brookings.edu/articles/a-bad-deal-for-development-assessing-the-impacts-of-the-new-inclusive-framework-tax-deal-on-low-and-middle-income-countries/

13 The BEPS Monitoring Group, "Taxing Multinationals: The BEPS Proposals and Alternatives," July 6, 2023, https://static1.squarespace.com/static/5a64c4f39f8dceb7a9159745/t/64a59dac21100f1f90f38c41/1688575404801/The+BEPS+Proposals+and+Alternatives.pdf

14 Margarita Gelepithis and Martin Hearson, "The Politics of Taxing Multinational Firms in a Digital Age," *Journal of European Public Policy* 29, no. 5 (2022): 708-727, https://doi.org/10.1080/13501763.2021.1992488

15 Tomasso Giardini, "Is US Pressure Against Foreign Digital Policy Working?," Global Trade Alert, December 2, 2025, https://globaltradealert.org/reports/reactions-to-tensions

THE BRASIL OF ANACÉS OR THE BRAZIL OF TIKTOK: A CROSSROADS FOR THE FUTURE OF DEMOCRACY AND TECHNOLOGY

Luã Cruz
CTRL+Z

Despite growing resistance in many regions, data centers remain infrastructures associated with techno-optimistic discourse. Some say they are essential for the economy, especially in a scenario of growing digitization of everyday life. This optimistic framing is also based on questionable arguments, such as job creation and attraction of foreign investment.[1] Brazil has accepted this at different levels of government, as evidenced by official documents and commissioned studies, as well as fiscal incentives like Redata,[2] a billion-dollar tax exemption regime for data centers. However, not everyone has accepted this story, especially those at the bottom of the ladder, whether indigenous communities or urban consumers. For many, what is being sold as modernity and technological progress will materialize as the violation of territorial rights[3] and the consolidation of foreign control over our digital infrastructures.

The Brazilian federal Government's argument is grounded in a few elements, specifically the fact that the country has excess renewable energy, and that a large portion of Brazilians' data is currently being processed in the U.S. state of Virginia. The goal then becomes to exchange energy for computational capacity.

What this policy does not ask is who benefits and who bears the costs. Redata is the centerpiece of this process—a set of tax breaks and regulatory simplifications designed to attract companies like Microsoft, Amazon, and TikTok. The program offers federal tax breaks on equipment imports and operations for five years.[4]

Civil society organizations criticize the regime for lacking basic efficiency metrics and failing to mandate transparency to monitor compliance with the required rules on energy and water consumption. These shortcomings became evident during the regime's opaque elaboration process, when several organizations raised concerns about the complete absence of community engagement mechanisms.

For Indigenous people, resistance is not a choice. It is survival.

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1 See: https://www.techpolicy.press/brazil-is-handing-out-generous-incentives-for-data-centers-but-what-it-stands-to-gain-from-it-is-still-unclear

2 See: https://ip.rec.br/en/blog/position-statement-on-redata-special-tax-regime-for-data-center-services/

3 See: https://web.archive.org/web/20110127162647/http://pib.socioambiental.org/en/c/terras-indigenas/introducao/o-que-sao-terras-indigenas

4 Other provisions mandate that data center operators must allocate at least 10% of processing capacity to the domestic market, using 100% clean energy (nuclear included), maintaining water efficiency, and investing 2% of equipment costs in national research and development.

The most vivid example of this clash is the TikTok data center project in Ceará. The company announced plans to build a facility in the state's interior, promoting job creation projections and billions of dollars investments. What TikTok did not do was meaningfully engage with the Anacé people, whose territories border the proposed site. When these communities learned of the project through the press, they organized.

They reclaimed a powerful tool: traditional community protocols for free, prior, and informed consent. Historically, these protocols have been used to defend territories against physical mega-projects like mining or dams. Now, these communities recognize that data centers similarly occupy and impact their physical and cultural territories.

Their demand is clear: the tech sector and governments must respect these same protocols. They are saying: "you cannot deploy technology here without consulting us first—on our own terms, in our own language, respecting our own decision-making processes." They are not rejecting technology but insisting on genuine community consent as a prerequisite.

But to ensure community demands reach decision-makers, civil society actors are learning that grassroots legitimacy alone is insufficient. In this dispute, we have worked to engage lawmakers in Brasília and developed a communications strategy to shape the public narrative. We understand that democratic debate on technology requires combining grassroots protocols with strategic political advocacy and media engagement, as relying on the goodwill of journalists or legislators is insufficient. For this reason, there is a need to counter narratives that reduce marginalized communities to "impacted populations." These groups must be recognized as political actors with the right to self-determination over how technologies affect their lives.

Data centers' backyard?

At this specific point in the history of technology, as we are witnessing the proliferation of hyperscale data centers, Brazil faces a choice: it can pursue data center expansion as a purely economic project, offering tax breaks and relaxed oversight to attract foreign investment, generating revenue for some while displacing voice and land for others. Or it can embed community consent into every stage of infrastructure planning and treat digital sovereignty as inseparable from territorial sovereignty.

The Anacé people's struggle against the installation of a data center on their territory is not an isolated episode in Brazil's history. It is, as the cases of TikTok and Redata demonstrate, a manifestation of a structural pattern: decisions about infrastructures that will shape the future of entire communities remain sequestered by governments and corporations, while those who will live with these structures for decades are kept at the margins.

The lessons from these cases and years of ground-level advocacy converge on a single question: not whether to have data centers, but who decides, on what terms, and for whose benefit. Here, civil society's task is to ensure that the answer comes from the communities who will live with these structures for decades, not from government studies or corporate press releases.

The Anacé resistance—in the roadblocks, in the courts, and in local advocacy—offers a path toward a radically different digital sovereignty. Not one measured in infrastructure metrics, but

rooted in community consent and territorial self-determination.

This demands that civil society fulfill its role: not to speak for communities, but to walk alongside them, ensuring that their voice and their protagonism remain non-negotiable. The knowledge accumulated by the Anacé people over decades of negotiation with corporations and the state is irreplaceable. The task now is to ensure that this knowledge, and the decisions that emerge from it, are not ignored but recognized as the foundation of any policy that genuinely respects the transparency, social participation, and human rights that Brazil's democracy should guarantee by default. I will close with the words from Anacé chief Roberto Ytaysaba Anacé:[5]

"Although framed as development and modernization, [data centers] represent a direct threat to our people's archaeological, spiritual, and environmental heritage. [...] For us, the Anacé, this would mean losing yet another piece of our spiritual and historical world. It repeats the same old pattern: large enterprises choosing Indigenous areas because they are treated as fragile, silent, and made invisible by the State itself. [...] Resisting, therefore, is not a choice: it is survival. The Anacé people stand firm, organised, united through their leaders, the troncos velhos, the memory of the ancestors, and the spiritual strength that comes from the land itself. The struggle continues – for demarcation, for justice, for visibility, for life."

5 See: https://www.bigissue.com/opinion/cop30-anace-chief-roberto-ytaysaba-datacentre/

FOR THOSE BELOW 18: CAN DIGITAL DEMOCRACY FACILITATE YOUTH ENGAGEMENT IN CIVIC LIFE?

Nancy L. Deutsch
School of Education and Human Development, University of Virginia

Those under 18 have grown up with digital technology as a near constant. From smart phones to tablets, they are used to connecting to the world from the palm of their hands 24 hours a day. This has influenced how young people engage with the social world, including in activism and social change. In the United States, those under 18 are limited in how they can participate in formal democracy by their disenfranchisement from the electoral system, except for local elections in some municipalities.[1] This makes digital democracy a particularly exciting idea for those of us who believe that youth voices should have a greater role in democratic practice. Yet the combination of individualized and collective knowledge that young people have access to via social media and other digital tools creates both opportunities and risks for their democratic engagement.

Adolescents and young adults are wired to take more risks, to question authority, and to seek a sense of belonging and purpose.[2] As a result, they are natural change agents. It is no surprise that digital tools have been adopted and used by young people for civic organizing and mobilization. From the Arab Spring to Black Lives Matter social media has played a significant role in young people's abilities to launch and participate in social movements[3]

Although some have criticized younger generations for a lack of civic engagement, there is evidence that young people, especially those from historically marginalized backgrounds, do not lack civic engagement. They practice that engagement in ways not traditionally considered part of democratic activity. Given that those under 18 cannot vote in most elections, taking account of the kinds of democratic engagement that young people engage in online and elsewhere requires a broader definition of civic participation.[4] Digital platforms offer opportunities for digital organizing, community building, education on social issues, and other engagement in our democratic processes outside of the formal electoral system. From that frame, digital platforms open up democratic practice to those who are otherwise disenfranchised by age, expanding rather than simply replicating the civic sphere.

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1 Some localities, such as Takoma Park, Maryland and Oakland, California, have lowered the voting age to 16 for some local elections. In early 2026, The United Kingdom introduced a bill to lower the voting age to 16 for all elections.

2 National Academies of Sciences, Engineering, and Medicine, *The Promise of Adolescence: Realizing Opportunity for All Youth* (Washington, DC: The National Academies Press, 2019); Laurence Steinberg, *Age of Opportunity: Lessons from the New Science of Adolescence* (Boston: Houghton Mifflin Harcourt, 2014).

3 J. Fullum and I. Waite, "Youth Activism in the Internet Age: Promises and Perils," in *DeGruyter Handbook of Youth Activism*, ed. C. Erdal and J. Kennelly (Boston: DeGruyter, 2025), 383-92.; B. Gentri, "Youth Activism in the Social Media Age," in *Youth Activism in America: An Encyclopedia of Ideals in Action*, ed. B. Gentri and S. Gelbman (New York: Bloomsbury, 2026), 15-23.

4 For examples of frameworks for considering youth civic engagement see: CIRCLE (Center for Information & Research on Civic Learning and Engagement), "Understanding Civic Engagement," 2026, https://circle.tufts.edu/understanding-youth-civic-engagement/what-it; Cathy Cohen and Joseph Kahne, *Participatory Politics: New Media and Youth Political Action* (Oakland, CA: Youth & Participatory Politics Research Network, 2012); James Youniss et al., "Youth Civic Engagement in the Twenty-First Century," *Journal of Research on Adolescence* 12 (2002): 121-48.

At the same time, digital feeds are controlled by algorithms that narrow our field of vision to content that is selected to keep us engaged.[5] The majority of young people report getting their news from social media.[6] This means they receive a selective slice of world news, curated by algorithms designed not to provide accurate information but to maximize time on platform. The digital town square does not necessarily expose us to new or contradictory ideas in the same way a physical one might. Yet searching for news online has the potential to diversify one's sources of information. This is because whereas we may choose a single newspaper or television station as our news source of choice, searching for news online carries the possibility of being led to alternative sources we would not have selected on our own.[7] But the democratization of knowledge online has come with a concerning decline in trust in institutions and expertise.[8] Perhaps most disturbingly, Americans trust each other less too. Thus, the digital space has become a site of mis/disinformation and radicalization as well as a site of critical consciousness and civic engagement.[9] Without fact-checking and democratic dialogue, indoctrination to extremes may be more likely than healthy political participation.

So how do we ensure that the opportunities that digital tools offer for those below the age of 18 facilitate positive civic and democratic engagement? First, we need to listen to young people and learn from them what they see as both the potential and the pitfalls of digital spaces for civic life. Adults cannot serve as the sole arbiters of digital governance. We need young people to help create the tools and norms that are shaping their worlds. Second, we need to focus on how we, as individuals and as a society, are fostering spaces for young people to build supportive relationships with peers and adults, relationships that expose them to new ideas and encourage healthy debate and discussion. History Co:Lab recently worked with young people to create a definition of civic thriving, which "reimagines civics as systems of care, aspiration, and contribution, connecting young people and communities to co-create a better future for all."[10] The promise of civic thriving requires leaning into the connective power of the digital world, but also acknowledges that the promise of that world cannot be achieved without human connection. Finally, we need to consider the full range of civic activities that young people can participate in and ensure that our schools and community institutions are scaffolding their engagement. Healthy democratic and civic engagement is a muscle, and it won't develop without practice. The earlier we engage young people in that practice, the more likely we are to build lifelong habits of civic behavior, both online and off.

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5 Eli Pariser, The Filter Bubble: What the Internet Is Hiding from You (New York: Penguin, 2011).

6 AP-NORC Center for Public Affairs Research, "The Evolving News Landscape: Comparing Media Habits and Trust Between Teens and Adults" (April 2026), https://apnorc.org/projects/the-evolving-news-landscape-comparing-media-habits-and-trust-between-teens-and-adults/; "Internet, Broadband Fact Sheet," Pew Research Center, November 20, 2025, https://www.pewresearch.org/internet/fact-sheet/internet-broadband/.

7 See: Axel Bruns, Are Filter Bubbles Real? (Cambridge, UK: Polity Press, 2019); Richard Fletcher, "The Truth behind Filter Bubbles: Bursting Some Myths," Reuters Institute for the Study of Journalism, January 24, 2020, https://reutersinstitute.politics.ox.ac.uk/news/truth-behind-filter-bubbles-bursting-some-myths.

8 Claudia Deane, "Americans' Deepening Mistrust of Institutions,' Trend Magazine, Fall 2024, Pew Charitable Trusts, https://www.pew.org/en/trend/archive/fall-2024/americans-deepening-mistrust-of-institutions.

9 Séraphin Alava, Divina Frau-Meigs, and Ghayda Hassan, Youth and Violent Extremism on Social Media: Mapping the Research (Paris: UNESCO Publishing, 2017).

10 Fernande Raine et al., Civic Thriving: The Essential Complement to Human Flourishing: From Silos to Convergence (History Co:Lab, 2026), https://www.civicthriving.org/.

WHY AN ABYA YALA PLURIVERSITY

Fernanda Rosa
Science, Technology, and Society, Virginia Tech

"I cried aloud, shaking my head all the while until I felt the cold blades of the scissors against my neck, and heard them gnaw off one of my thick braids. Then I lost my spirit."[1]

Zitkála-Šá (1876-1936) was a child of the Yankton Dakota (Sioux) tribe when missionaries arrived in their territory offering her mom free education for her children. In her memoir, feeling Zitkála-Šá's pain is unavoidable. When her hair was cut to follow the rules of the school, she cried in despair: "Our mothers had taught us that only unskilled warriors who were captured had their hair shingled by the enemy. Among our people, short hair was worn by mourners, and shingled hair by cowards!"[2]

Zitkála-Šá's memories have the complexities of our colonial history. She expresses how actively she asked her mom to let her go to school, not knowing where her curiosity would lead, including an incomplete college degree years later, against her mom's desire. While reading, I then thought of my own mom and her apparently opposite story. A Black woman going to a public school in the 1950s, she asked her mom to quit formal education in the second grade, motivated by the mistreatments she faced, as she remembers, including the teacher's physical abuse. She then joined my grandmother's work, washing other families' clothes in the river and ironing them, to guarantee some food for her seven kids.

Zitkála-Šá wrote her essays in English, which she learned as second language at the missionary school. She then became an Indigenous writer, artist, and politician. My mom, in turn, became a Black house maid from childhood. She learned to write numbers and her name only. Her Portuguese last name, passed to me and my sister, is a reminder of how our ancestors were named after the families who believed we were their property. It is their language that we inherited too. When we became the first generation in the family to go to college, it seemed like a way to break that long colonial history. But at which cost?

That education leads to social mobility is well-known. However, if science and technology are not accountable to the lives and knowledges of Black and Indigenous peoples, society has merely perpetuated western thinking as universal knowledge, spreading the understanding that this is the only way to become civilized and the only valid path of formal education. The intentional or unintentional erasure of Black and Indigenous knowledges from science and technology confirms what Zitkála-Ša noticed when she became a teacher, how education becomes a means to perpetuate racial hierarchies and ways of knowing and being.[3]

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1 Zitkála-Šá, *American Indian Stories* (Modern Library, 2019), 31.

2 Zitkála-Šá, *American Indian Stories* (Modern Library, 2019), 30.

3 Zitkála-Šá, *American Indian Stories* (Modern Library, 2019).

All of us with Black or Indigenous heritages who went to college may share this conflict. The recognition of the importance of higher education sits in tension with the sense of not belonging, of being out of place, of having always to catch-up on content that has never been familiar, and of never expecting that familiar content would be included in the curriculum. Working with Indigenous communities in Abya Yala—the Americas—I heard from Oswaldo Martínez, a Zapoteco agronomy engineer and collaborator, from Santa María Yaviche, in Oaxaca, Mexico, how learning western science is not the same as "understanding the moon, understanding the rites, the language, why you lose the spirit, why you have to do tequio [community work], why you have to go to the party, why you have to receive the little glass that they give you..." As he says: "I practically didn't know anything [after college]."[4]

This conflict, a result of the colonialist values of western universities, occurs not only in the return to the territory but also during the years of formation, both due to the lack of Indigenous knowledges in the curriculum, as well as the absence of interlocution and reciprocity of knowledge in conventional science and technology education. To fight against this pattern, Santa María Yaviche has now an Indigenous university: the Institute of Applied Technologies Kieru Kass, which means "of everyone and of ourselves at the same time." From this experience, we see some light to rewrite this pernicious colonial history of Black and Indigenous peoples in academia, and to build not universal knowledges but "pluriversal" ones.

The pluriversal implies the coexistence of multiple knowledges and ways of living, many consistently disregarded by dominant knowledge hierarchies. Not by chance, the pluriversal praxis is associated with the Zapatista movement—known for the memorable uprising of the Indigenous peoples of Chiapas, Mexico, in 1994. The Zapatista movement demarcated a striking opposition to neoliberal and violent state reforms by defending "a world where we all fit"[5]or "the practice of a world of many worlds."[6]

This vision is also expressed by Antonio Bispo dos Santos, a maroon author, who coined the term "diversal" to oppose the "universal," to counter the Eurocentric "uniqueness" spread through globalization and imposition of hegemony.[7]Language and neologism function here as counter-hegemonic tools, exposing the colonial roots of supposedly universal values. In view of that, different experiences in Latin America, including Indigenous universities, have called themselves and have been recognized not only as universities, but as "pluriversities" a movement that reminds us of Catherine Walsh, when she states: "To name is also to fight."[8]

Inspired by Indigenous pluriversities, and specifically the experience of Santa María Yaviche, and recognizing the urgency to join this fight led by many before us, we started the Abya Yala Pluriversity[9] in 2023, in collaboration with Black and Indigenous organizations, scholars, activists and allies. Guided by the goal of counterpointing the continuous erasure of Black and

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4 Personal interview with Oswaldo Martínez, 2017, Santa María Yaviche.

5 Ejército Zapatista de Liberación Nacional, "Segunda Declaración de La Realidad por la Humanidad y contra el Neoliberalismo," *Enlace Zapatista*, August 4, 1996, https://enlacezapatista.ezln.org.mx/1996/08/03/segunda-declaracion-de-la-realidad-por-la-humanidad-y-contra-el-neoliberalismo/.

6 Marisol de la Cadena and Mario Blaser, eds., *A World of Many Worlds* (Duke University Press, 2018).

7 Antônio Bispo dos Santos, *A terra dá, a terra quer* (RuiGE, 2023).

8 Catherine Walsh, "Estudios (inter)culturales en clave de-colonial," *Tabula Rasa*, no. 12 (January 2010): 209-27.

9 The Abya Yala Pluriversity website can be found here: www.abyayalapluriversity.org.

Indigenous knowledges in academia, we form a network of more than forty people, distributed across Abya Yala. We materialize our values through multiple actions that aim at nurturing each of us, while also producing scholarship that reverberates our truth. For me, an academic formed in the western university, the Pluriversity also works a way to bring together collaborators of long-term ethnographic projects based on an ethics that breaks the researcher-subject binary, honor relationships and kinships that extend beyond research projects, and assume feminist objectivity as always situated.[10]

The Abya Yala Pluriversity is built on a decentralized architecture in which the center can be in any part of the network, depending on the activities and desire of each node. It started at Virginia Tech, a university built on the lands of Tutelo and Monacan peoples known as a land grant institution, where, as contradictory as it may sound, the number of Indigenous students has not yet reached double digits. Despite that, the vibrant events and celebrations led by the Black, Latino, and Indigenous communities through community centers, caucuses, and academic programs at the university continuously motivate our work and the need to think as a pluriversity.

In the framework of Democracy from Below, it is hard to imagine taking our democracies to the next level without furthering our pluriversal values in academia that include not only humans but multiple beings. The narratives of AI lead us to believe in magical technology, ableist solutions and technosolutionism.[11] This is an invitation to open space for alternatives where we can learn with the pluriversal understandings of the world and with ancestral knowledges of Black and Indigenous peoples, for the benefit of all. It is our responsibility, inside educational institutions, to refuse the imposition of universal narratives that do not account for our knowledges. The Abya Yala Pluriversity is just one more response to this enormous task.

10 Sandra Harding, *Sciences from Below: Feminisms, Postcolonialities, and Modernities* (Duke University Press, 2008), https://doi.org/10.1215/9780822381181.

11 Ashley Shew, *Against Technoableism: Rethinking Who Needs Improvement* (W. W. Norton & Company, 2024).

BUILDING NETWORKS OF CARE TO RESIST AI AND TECHNO-SOLUTIONISM

Jess Reia
Digital Technology for Democracy Lab and School of Data Science
University of Virginia

As the world watches democratic processes and institutions erode in so many Western countries, questions about the role of digital technology in that erosion are surfacing more frequently. In the past decade, formal systems have repeatedly failed us: insufficient responses to a pandemic, climate change denial, the dehumanization of trans people, the spread of mis-and disinformation, and the undermining of welfare state policies are examples of what we recently witnessed.

When generative AI entered the mainstream in 2023, becoming ubiquitous thanks to massive investments and hype, many already fragile structures started to collapse. From workforce displacement[1] to the theft of artists' creative work,[2] the AI industry thrives on destruction.

Digital technology is often presented as a solution to complex problems—what we call techno-solutionism[3]—and Big Tech companies offering these so-called solutions are openly aligning with far-right rhetoric and governments.[4] If the state fails us repeatedly, and technology companies facilitate the degradation of living conditions for the majority, can we still passively wait for current democratic institutions to rescue us from the abyss?

Democracy is often framed around political rights and civic engagement. These are essential elements but have been well-documented as limited in reach and changemaking.[5] Voting rights have been historically tied to legal status, gender, race, ethnicity, and class, while traditional civic participation mechanisms do not necessarily get to those at the social and regulatory margins of society. Increasingly, alternative models of engagement and action are needed, and people are turning to decentralized support. It is in this context that efforts to build networks of care, especially through mutual aid, emerge as a democratic moving force.

Technopolitics of care and affective alliances

Democracy from below means more than making voices heard and participating in formal decision-making. It is also created through networks of care like mutual aid, which sustain

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1 Alexandra Mateescu, Aigerim Nguyen, and Sofia Pinto, "Last Place in the AI-First Economy: How the AI Industry Relies on Worker Disempowerment," *Data & Society*, 2026, https://doi.org/10.69985/FDQO6355.

2 Trystan S. Goetze, "AI Art Is Theft: Labour, Extraction, and Exploitation; Or, On the Dangers of Stochastic Pollocks," in *Proceedings of the 2024 ACM Conference on Fairness, Accountability, and Transparency (FAccT '24)* (New York: Association for Computing Machinery, 2024), 186-196, https://doi.org/10.1145/3630106.3658898.

3 Evgeny Morozov, *To Save Everything, Click Here: The Folly of Technological Solutionism* (New York: PublicAffairs, 2013).

4 Mark Coeckelbergh, "Technofascism: AI, Big Tech, and the New Authoritarianism," *AI & Society* (2026), https://doi.org/10.1007/s00146-026-02862-9

5 See, for example: Shanelle Davis, *Replace the State: How to Change the World When Elections and Protests Fail* (Minneapolis: University of Minnesota Press, 2025).

engagement, build trust, and create material conditions necessary for democratic life. Examples include food distribution, housing support, support for reproductive rights and gender confirming care, and protecting our neighbours against violent immigration enforcement.

Mutual aid is a reciprocal exchange of resources and services in which members of a community work together to meet common needs that are not met otherwise. It is not an alternative to the State; this is a horizontal process, distinct from philanthropy because it is based on solidarity, not top-down giving that comes with strings attached.

By centering solidarity and collaboration, networks of care are created across cities—in food drives—and across continents, through grassroots international organizations providing help to those in countries that criminalize reproductive rights. Digital technologies are ambivalent tools in these networks: on the one hand, they allow quick organizing and extend the reach of mutual aid efforts; on the other hand, they pose threats related to surveillance and control. The latter is even more important in places where the mutual aid being provided does not comply with authoritarian legislation.

When AI and Big Tech companies are aligned with far-right governments, networks of care must carefully weigh the trade-offs of tools and platforms offered as a convenience or key communication channel. Meta discontinuing end-to-end messaging encryption[6] and sharing Facebook private messages about healthcare[7] and X/Twitter rolling back protections against discrimination[8] are examples of how digital spaces are becoming less secure for minorities and those organizing care.

Awareness of the role of these platforms in reproducing power and inequality must be a significant component of building networks of care. However, other aspects of this tiresome process are more hopeful. In Defense of Solidarity and Pleasure,[9] Firuzeh Shokooh Valle presents a feminist technopolitics of care based on fieldwork in the global majority communities that have centered their digital practices care. It shows that searching for novel forms of collective pleasure and joy while pursuing social justice is not only a possibility, but necessary to build better worlds.[10]

Building upon this concept, we can find various examples of practices of care globally. For instance, in efforts to guide vulnerable users through the shortcomings of online platforms,[11] create resources to help people navigate the pitfalls of digital consent,[12] projects to foster

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6 See: https://www.bbc.com/news/articles/clypzxl3lvqo

7 "Facebook Turned Over Chat Messages Between Mother and Daughter Now Charged Over Abortion," *NBC News*, August 9, 2022, https://www.nbcnews.com/tech/tech-news/facebook-turned-chat-messagesmother-daughter-now-charged-abortion-rcna42185.

8 "Twitter Drops Policy Against Misgendering, Deadnaming Transgender People," *CBC News*, April 19, 2023, https://www.cbc.ca/news/world/twitter-transgender-deadnaming-1.6815021.

9 Firuzeh Shokooh Valle, *In Defense of Solidarity and Pleasure: Feminist Technopolitics from the Global South* (Stanford: Stanford University Press, 2023).

10 Shokooh Valle, 2023.

11 See, for example, GLAAD, "We Keep Us Safe: A Digital Safety Guide for LGBTQ People," Social Media Safety Program, accessed July 2026, https://glaad.org/smsi/lgbtq-digital-safety-guide/.

12 The Consentful Tech Project, accessed July 2026, https://www.consentfultech.io/. See also Una Lee and Dann Toliver, Building Consentful Tech (Toronto: And Also Too, 2017).

open source and non-proprietary tech,[13] or rapid response programs for activists and social movements.[14] Many of these initiatives can be useful to sustain foundations of democratic practice and protect fundamental rights.

But what does care become when pleasure is absent? We can find the answer in gendered and racialized expectations of self-sacrifice, burnout, and exploitative, insecure, and undervalued labour. In "I Hope We Choose Love,"[15] Kai Cheng Thom writes about the pitfalls of building such networks, showing the need for boundaries, support and tolerance for flaws when working toward care. Digital technologies also need to be considered in this context. Doomscrolling can make us feel powerless, private messages may be shared without consent, and the devices collecting data about us 24/7 can turn dissidence into persecution.

How, then, do we move forward? Brazilian philosopher Ailton Krenak[16] introduces the concept of "affective alliances" as a possible path for social and political organization, challenging the traditional Western ideas of citizenship and equality, which often demand a level of uniformity that can become oppressive. Affective alliances, by contrast, are constituted by recognizing radical differences between beings and do not require participants to assimilate or conform. They are built on mutual recognition and respect, allowing different worlds to coexist and influence each other. So, could digital technologies become catalysts for such alliances and change?

Networks of care as democratic infrastructure

Democracy is deeply connected to conditions of livability. Maybe we should reframe from "How do we get more people to participate?" to "What infrastructures and support make participation possible?"

Networks of care and affective alliances can be considered a form of democratic infrastructure. They call for a non-romanticized view of collective building; coalitions, strategic litigation, bridging across different activisms, and being open to mistakes—all fill in the gaps left by institutions that keep failing us. Meeting basic needs frees people to engage politically, and repeated acts of care foster stronger social bonds and more durable organizing.

We cannot escape digital technologies, but we can operationalize their best use in service of the community. Joining forces with those advocating for digital rights, less surveillance and connectivity. Looking for open source, local groups and those engaged in reimagining AI in smaller, personal scales."[17] Digital democracy from below will not be shaped by new platforms or AI, but by how communities organize, care and build? solidarity. This is how we can find hope when the world is falling apart.

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13 For instance, the tools offered by the Open Knowledge Foundation, accessed July 2026 (https://okfn.org/en/what-we-do/tools/).

14 In Latin America, a good example is the Fondo de Respuesta Rápida (FRR) by the nonprofit Derechos Digitales, accessed July 2026 (https://fondos.derechosdigitales.org/home).

15 Kai Cheng Thom, *I Hope We Choose Love: A Trans Girl's Notes from the End of the World* (Vancouver: Arsenal Pulp Press, 2019).

16 Ailton Krenak, *Ancestral Future: Critical Essays* (Cambridge, UK: Polity Press, 2023), 44.

17 AIxDESIGN, accessed July 2026, https://aixdesign.co/.

DEMOCRACY, RECATEGORIZED

Bianca Wylie

Democracy, as practiced between elections, is hard. If we work from the ground up and consider what it means to facilitate collective decision-making, democracy requires real, often unpaid, labour, work of many kinds. It takes work to figure out the conditions under which we can peacefully coexist. It's difficult on a personal level—requiring us to listen a lot more than we speak, to things we don't want to hear. It requires us to hold space for people with different beliefs, to refuse to refuse another's humanity, regardless of their conduct. It's exhausting.

In light of democracy's tiresome demands, the daily and mundane bits of our lives, and particularly how we manage our digital existence, how we choose to use technology (or not), offers us space to sharpen our patience and grow our confidence in each other and in our common interests—by establishing new methods and social norms.

This could mean: Thinking first about accessibility and inclusion when making technology choices, because they create wonderful trouble for universalism and help us practice pluralism. There is no one right way to support accessibility, and there is no one right way to live—how do we co-exist, with difference? How do we support all kinds of differences? These are questions common to disability justice and to liberal democracy.

If you're holding a meeting online, don't default to surveillance—do not assume a recording should happen, and do not assume it should not. Talk to the people involved in a meeting, understand if and how transcription or other note-taking tools might be beneficial for some, or not preferred by others. Use captioning if it is available for public events. Push back on surveillance by default through always-on transcription and summary, features that are being promoted in a range of online meeting tools and administrative product suites. Evoke and normalize explicit consent when recording things, with care taken as to what happens to records after they are created. Ask yourself each time whether or not a recording is really necessary. Then get consent from everyone, consider the power dynamics, consider whether it's a high-trust or a low-trust setting, be clear on what you are going to do with the recording, consider the environmental impact and corporate dependencies created when you constantly churn out more notes, more data, more data storage.

Be thoughtful in your use of generative AI when communicating with other people, because it impacts our relationships. Reclaim interest in defending your authority to make decisions, and being held accountable for them, in the face of accelerating automation. Sometimes doing the focused work of notetaking or the laborious work of synthesis is what creates that physical and visceral connection to knowledge, which is key to being willing and able to defend it when challenged. These are not minor elements of managing power.

The questions hanging in the air for liberal democracy relate to how to construct the idea of society at this stage of deeply neoliberal and technology-infused existence—how to go from

here to practical, everyday solidarity and collectivism. Wendy Brown once wrote that the consequences of neoliberalism have far outrun its founders' wildest dreams.[1] And the idea of polarization has made it difficult to remember that people are going to have drastically different beliefs about things. This may not be polarization; it may just be deeply inconvenient.

It is plausible that the unsatisfying answer of this era is to hold a funeral for the idea of scale and connectedness[2]—without swinging all the way to a hyper-local that disconnects from the rest of the world. There is a need to consider how to practice democracy differently: at smaller units, in different increments, than those solely on offer through formal institutions. Part of this work is reorganizing our categories, one of the most politically powerful and problematic features of Western thought.

Rather than understanding democracy through its most familiar containers—elections, parties, community meetings—which have become confused by ideas of winning and being "right," attending to the democracy on offer through the daily and the mundane will help us build norms that extend outward to the protection and expansion of our institutions. And it will help us remember the incredible power we refuse by situating our political power in rare events rather than common practice.

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1 Wendy Brown, *In the Ruins of Neoliberalism: The Rise of Antidemocratic Politics in the West* (Columbia University Press, 2019).

2 David Murakami Wood, "Only (Dis)Connect: Facing the Intertwined (in)Security of Self, Systems and Society," *First Monday*, ahead of print, August 17, 2025, general, https://doi.org/10.5210/fm.v30i8.13776.

A ROADMAP TO PARTICIPATORY WORKSHOPS IN ACADEMIA AND BEYOND

A ROADMAP TO PARTICIPATORY WORKSHOPS IN ACADEMIA AND BEYOND

Jess Reia
Jonathan van Geuns
Nicole West Bassoff

The format we used on 20 February 2026 is documented here so anyone interested can take and adapt it to fit their specific needs. It works best when scholars, practitioners and civic actors are together in one room, with the goal of leaving the meeting with more than a panel summary. The structure is simple: a short public panel to surface tensions, followed by two workshops that move the conversation from diagnosis to action. Finally, participants are invited to contribute essays to an edited collection.

Even though the current collection is not formally part of a series, it belongs to the same story and has its place in the narrative built by Ana Brandusescu and Jess Reia for the AI in the City (2022) publications and by Jess Reia, MC Forelle and Yingchong Wang for the Reimagining AI (2025) collection.

Below we describe the reasoning behind each step in our process.

The format

Block	Time	What it is for
Panel	*90 min*	*Five or six provocations of 5-7 minutes, then moderated dialogue. Not a lecture series or paper presentation. Guiding questions were provided in advance. This panel is free, open to the public and livestreamed. Afterwards, the discussion is uploaded to a YouTube channel.*
Workshop 1	*75 min*	*Map failures. Locate the problem in a real decision, document or workflow. Interactive materials were provided, such as paper, pens and colourful stickers.*
Workshop 2	*60–75 min*	*Move to ideation and strategy, starting from the tensions named in earlier sessions. Interactive materials were provided, such as paper, pens and colourful stickers.*

The people

The people invited are central to this kind of convening. We mapped all faculty members across the university, identifying those who might be interested in the topic and would bring different perspectives to the conversation. In

issuing invitations, we adhered to a few key mandates. Go beyond the usual disciplines you collaborate with and try to be as comprehensive as possible. Invite scholars at different stages, from early career to senior, and include students when appropriate. Most importantly, invite local organizations and local governments, as well as international collaborators if possible. Avoid using titles and hierarchy, so everyone feels they have something to say, and what they say matters. Always pay participants who are not part of the university an honorarium, especially community members and those working in nonprofits and civil society organizations that are usually underfunded. Organize the convening in blocks of time that work for most people, keeping overall length reasonable. Follow accessibility guidance, offer accommodations and be open to learning.

The method

We chose Participatory Action Research (PAR) as the method, which means we learn with each other by working from real experience toward practical insight. PAR treats lived experience, practice knowledge and research as equally valuable forms of expertise. It is what makes a mixed room productive. In practice it commits you to six things: hearing the voices often left out, cross-pollinating between fields, challenging assumptions rather than collecting them, orienting toward strategy rather than description, treating the day as one step in a longer inquiry, and most of all, staying concrete. Prioritise real things over abstractions; general claims are where cross-sector conversations go to die.

Principle	What it means on the day
Inclusivity and diversity	*Hear the voices usually left out. Stewards invite thoughts from whoever has not spoken and encourage friendly disagreement.*
Interdisciplinarity	*Seat people together who would not otherwise share a table. The friction is the feature, not a problem to manage away.*
Critical reflection	*Challenge assumptions rather than collect them. Ask what a claim would look like if it turned out to be wrong.*
Action orientation	*Aim at strategies and recommendations, not description. Every activity should produce something to take forward.*
Iterative learning	*The day is one step in a longer inquiry, not a conclusion. The essays are the next step.*
Concreteness	*Prioritise artifacts and venues — a clause, a permit, a threshold. Encourage participants to offer concrete examples from their experience.*

Workshops: Seat six to eight participants and one steward per table

A steward is a participant who also steers: they take notes, watch for anyone dominating the conversation, invite in the people who have not spoken, and pull the group back when it drifts. They share their own views, too. The best stewards are trusted people who understand the event's goal, but no advance preparation is needed. It is sufficient to gather stewards together for a half-hour preparatory huddle between the panel and workshops.

Across the afternoon each table does three things

(1) Surface where democracy is made or unmade in each participant's work, such as in everyday processes, documents and assumptions

(2) Name the tensions and trade-offs that keep recurring, even across very different contexts

(3) Translate those tensions into a few practical insights that participants can carry back, which then seed the essays that follow.

Activity 1 explores background power dynamics

Have each participant reflect on and respond to the following questions, drawing from their own work and experience. Who is treated as the default public in a given context of interest, and who is missing by design? Who defines the problem, and who has to live with the outcome? Where does decision-making really happen? What counts as legitimate evidence, and what gets dismissed? What was the mode of participation offered—a survey, a hearing, a comment period—and what power relations did it actually foster? For this activity, four or five prompts is plenty.

Activity 2 asks what difference the system makes

Ask each participant to identify a "technology" of interest, which can be any tool, system or infrastructure implicated in their work: an algorithm, a zoning map, a procurement process, a database standard. Start with three minutes of silent writing on sticky notes in response to a prompt: what does this technology make easy? What does it make hard? What becomes visible, and what disappears? Then open the table to discussion. Stewards can cluster sticky notes according to different criteria of interest: whether the thing is mostly about visibility, gatekeeping, measurement, speed, accountability or risk-shifting; whether it

concentrates authority or spreads it.

Activity 3 turns a tension into a strategy

Invite participants to move toward ideating concrete strategy and action that they can implement after leaving the room. For some, this might mean identifying one change they can make in their daily practice. For others, the focus might be on the essays they will write next. Reflections should build on the tensions raised previously. Who gets harmed by the easy version of the solution? How do institutions absorb this kind of critique? What exactly would you change, where would you intervene, who would need to say yes, and what is one first step in the next three to six months? End by speaking in a circle, one voice per table: what surprised you, what do you carry forward, and what is one commitment you are willing to name?

The collection of essays

We asked all participants to contribute an essay of 500 to 800 words within six weeks, based on their expertise and featuring their reflections on the topics discussed during the event. It is important to provide guidance on writing for larger audiences. The co-editors should also keep in mind that not all authors are academic, and neither are all readers. When editing, make it concise, without jargon and with references to readings and links in case the reader wants to learn more about a specific argument. We also recommend paying attention to visual appeal and following the latest accessibility guidance.

The dissemination

The dissemination plan has one central need: the collection of essays must be free to download and licensed in a way that it keeps on being so, such as the Creative Commons' Attribution, NonCommercial and ShareAlike rules (CC BY-NC-SA). You can explore more licenses here. After making it available for free under an open license, you can start mapping mailing lists, boards and other communities that could be potentially interested in the voices and topics included in the collection. Make use of your university lists and other ways used to promote knowledge, events, and publications. It is also a good idea to use social media to disseminate the final publication, as well as reach out directly to those who might find it a useful resource.

Two important rules

Take five minutes to say at the start of the event what will and will not be recorded, shared or attributed. And name the output (in this case, essay contributions) before the event, when issuing invitations, rather than at the end. People follow through when the ask was clear from the start.

EDITORS AND ORGANIZERS

EDITORS AND ORGANIZERS

JESS REIA

Jess Reia is an Assistant Professor of Data Science & Public Policy and a 2025-2027 Andrew Carnegie Fellow at the University of Virginia, where they co-lead the Digital Technology for Democracy Lab. They are also a Visiting Scholar at East China Normal University and a Research Associate at the Data & Society Research Institute. Reia works primarily on topics of technology policy, data justice, human rights and urban governance. A policymaker by training, they have collaborated with governments for over a decade and conducted research that has been published in four languages. Reia is also a public scholar whose writing and interviews have been featured in numerous outlets, including TIME, Bloomberg Businessweek, Estadão, Le Devoir, and BBC. Before joining UVA, they were appointed Mellon Postdoctoral Researcher at McGill University and worked at the Center for Technology & Society at FGV Law School in Rio de Janeiro.

JONATHAN VAN GEUNS

Jonathan van Geuns is a researcher, writer, and community-builder working at the intersection of digital governance, participatory democracy, and collective action. He examines how data, AI, infrastructure, and emerging technologies reshape power and public participation, with a particular focus on AI governance and the politics of data-driven decision-making. His work includes research and convening on AI adoption and meaningful public participatory AI governance in policy processes. Bridging interdisciplinary scholarship and grounded practice, his work emphasizes participatory methods, critical inquiry, and action-oriented outcomes that translate into concrete strategies for governing digital systems more democratically.

NICOLE WEST BASSOFF

Nicole West Bassoff is a Postdoctoral Research Fellow in the Digital Technology for Democracy Lab at the University of Virginia. She holds a Ph.D. in Public Policy from Harvard University, where she trained in Science and Technology Studies (STS). Her research theorizes the shifting boundary between public and private responsibility in the digital age, asking how communities and institutions renegotiate the terms of sovereignty and citizenship when new technologies unsettle existing political orders. She traces this question across cities asserting claims on digital development, experts and residents jointly shaping what counts as urban progress, and nations struggling to control a borderless digital public sphere. She is currently completing a book manuscript, *The Urban Social Compact in the Digital Age*, and she has published in *Science, Technology & Human Values* and *The Conversation*.

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We hope this collection will add to the many voices fighting for our democracies and rights.