PLOS Climate

OPINION

When algorithms decide the climate: AI, disinformation, and the crisis of environmental truth in the Anthropocene

Diogo Guedes Vidal[1,2*]

1 Department of Social Sciences and Management, Universidade Aberta, Lisbon, Portugal, **2** Societies and Environmental Sustainability Research Group, Centre for Functional Ecology—Science for People & the Planet, Associate Laboratory TERRA, Department of Life Sciences, University of Coimbra, Coimbra, Portugal

* diogo.vidal@uab.pt

OPEN ACCESS

Citation: Vidal DG (2026) When algorithms decide the climate: AI, disinformation, and the crisis of environmental truth in the Anthropocene. PLOS Clim 5(1): e0000799. https://doi.org/10.1371/journal.pclm.0000799

Editor: Jamie Males, PLOS Climate, UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

Published: January 16, 2026

Funding: The author acknowledges the support of FCT – Fundação para a Ciência e Tecnologia, I.P., within the framework of Project UID/04004/2025 – Centre for Functional Ecology – Science for the People & the Planet,with DOI identifier 10.54499/UID/04004/2025 (https://doi.org/10.54499/UID/04004/2025), with an extension at Universidade Aberta, as well as the Associate

The epistemic fault-line of the anthropocene

We often describe the Anthropocene as a planetary emergency. Yet beneath the ecological upheaval lies a deeper and more destabilising fracture: the erosion of environmental truth [1]. By environmental truth, I refer to the collectively negotiated understanding of climate and ecological realities, shaped by scientific, social, and technological processes. Climate knowledge today is reported, debated, and contested, but increasingly it is computed [2]. Algorithmic infrastructures now decide what becomes visible, credible, and politically actionable. My argument here is direct: AI systems and digital platforms have become co-producers of environmental truth, and this reconfigures the very conditions under which climate policy, public debate, and democratic decision-making occur. The Anthropocene is as much a crisis of meaning as it is of ecology.

From my vantage point teaching sociology of information and communication, I see how students navigate an environment saturated with climate content yet precariously anchored to reliability. AI-generated or AI-mediated information, often wrapped in the aura of objectivity, can obscure the situated, negotiated, and provisional nature of scientific knowledge. And beyond the epistemic erosion lies another layer that becomes evident in my experience teaching: environmental truth is not eroded evenly. The capacity to navigate climate information is deeply stratified across social groups. Students with different levels of digital literacy, socioeconomic resources, or exposure to quality journalism encounter radically different informational ecologies. Algorithmic curation amplifies these disparities, producing uneven vulnerabilities to simplified narratives, misinformation, and emotionalised climate framings. In this sense, the Anthropocene's crisis of truth is inseparable from pre-existing social inequalities. In practice, algorithms act as gatekeepers, translating complex socio-ecological realities into digestible narratives while simultaneously producing epistemic friction. Agenda-setting theory once illuminated how media shape what publics think about. The digital Anthropocene transforms this into a distributed sociotechnical process. Algorithms now select, rank, and increasingly generate environmental news through a logic centred on attention maximisation. Accuracy and justice

Laboratory TERRA (reference LA/P/0092/2020). The funders had no role in the study design, data collection and analysis, decision to publish, or preparation of the manuscript.

Competing interests: Non-financial competing interests. The author is a member of the PLOS Climate editorial board.

are not part of the calculus. Nearly half of AI-generated environmental news stories misrepresent their sources [3,4]. This is not a malfunction, it is the predictable outcome of systems engineered to optimise engagement.

The provocation: AI is becoming an environmental actor

We must stop treating AI as a neutral conduit. AI is becoming an environmental actor because it shapes the informational ecosystem upon which climate action depends [5]. Algorithmic personalisation fosters communicative enclosures in which students encounter environmental knowledge filtered through the value systems of their online communities rather than through scientific consensus. Environmental truth therefore becomes localised: what is credible, urgent, or even real varies by community, creating fragmented climates of belief. Thus, as engagement-driven platforms reshape environmental messaging: local realities of climate adaptation may vanish under homogenized global narratives, while catastrophic events are sensationalized without context. The sociological questions are unavoidable: How does AI recode the authority of environmental expertise? Which interests profit from the algorithmic privileging of certain risks and responsibilities? And how can publics trust environmental knowledge when the medium itself obscures the conditions of its production? In short, environmental truth is being curated by infrastructures built for profit, not planetary stewardship. Is the result of economic imperatives that intersect with these processes, constraining the capacity of media to serve as arenas for critical debate. Journalism, embedded in market logics of attention, advertising revenue, and platform engagement, favours dramatic, high-impact stories that attract audiences rather than those that foster nuanced understanding [6,7].

Traditional journalism is not immune. Under the imperatives of attention capitalism, newsrooms favour narrative drama over analytic depth. Extreme weather becomes synonymous with “climate change,” while biodiversity collapse, pollution, and environmental injustice receive fragmented and episodic treatment. The result is a public that experiences climate change not as structural transformation but as a sequence of disconnected shocks [8]. Students report difficulty distinguishing between interpretive commentary, scientific communication, and ideologically motivated messaging.

Disinformation is a system feature, not a failure

I believe that the contemporary struggle over environmental knowledge unfolds across three regimes: (i) Institutional technocracy, privileging metrics, modelling, and managerial abstraction; (ii) Algorithmic curation, privileging engagement, virality, and profit; and (iii) Civic imagination, privileging justice, care, and democratic participation. Climate truth emerges from the friction and negotiation between these regimes. Each claims legitimacy; each shapes public understanding; each carries its own biases and blind spots. In this landscape, disinformation is not simply an attack on truth; it is the expected outcome of sociotechnical architectures optimised for attention. It thrives in systems where speed overrides verification, engagement outranks accuracy, and algorithmic opacity shields responsibility. This is why addressing disinformation requires more than fact-checking. It requires redesigning the infrastructures that allow it to flourish [9].

Yet the digital sphere is not only a site of distortion, it is also a site of reinvention. Across Europe and Portugal, young climate activists mobilise platforms as technopolitical tools. Movements such as Fridays for Future and Extinction Rebellion construct affective communicative ecologies, blending imagery, irony, performance, and narrative to spark empathy, outrage, and mobilisation [10]. They counter the managerial, technocratic rationality of institutional climate policy with moral urgency and intergenerational ethics. In my classrooms, students dissect these campaigns and recognise them as novel forms of environmental truth-making that challenge the dominant epistemic order. These practices operate in tension with mainstream media frames, which often oscillate between paternalistic fascination and skepticism, shaping the symbolic authority of young voices in public discourse [11].

If AI now shapes environmental truth, then climate governance must expand its scope. Three shifts are essential in my view: Recognise AI as an epistemic actor, which requires environmental sociology to incorporate AI into analyses of climate knowledge production, treating algorithms as participants in shaping truth regimes; Embed digital climate literacy into democratic life since citizens must understand not only climate science but the media systems through which climate science is encountered; Regulate algorithmic infrastructures as part of climate policy, with transparency mandates, public-interest design, and accountability mechanisms in climate governance tools, not just digital policy.

The Anthropocene forces us to confront a difficult reality: we cannot solve the climate crisis without addressing the crisis of environmental truth. AI and platforms transmit ecological information but they also configure its meaning, its emotional resonance, its political visibility. Up till now civic actors continue to invent countervailing communicative forms that keep democratic imagination alive. The task ahead is to democratise the architectures that mediate environmental understanding. Only then can societies deliberate meaningfully about the futures they hope to build and the planetary boundaries they must respect.

Author contributions

Conceptualization: Diogo Guedes Vidal.

Formal analysis: Diogo Guedes Vidal.

Investigation: Diogo Guedes Vidal.

Resources: Diogo Guedes Vidal.

Supervision: Diogo Guedes Vidal.

Validation: Diogo Guedes Vidal.

Visualization: Diogo Guedes Vidal.

Writing – original draft: Diogo Guedes Vidal.

Writing – review & editing: Diogo Guedes Vidal.

References

1. Sinatra GM. The erosion of trust is contributing to science denial. Curr Opin Psychol. 2026;67:102214. https://doi.org/10.1016/j.copsyc.2025.102214 PMID: 41297286
2. Stern N, Romani M, Pierfederici R, Braun M, Barraclough D, Lingeswaran S, et al. Green and intelligent: The role of AI in the climate transition. npj Clim Action. 2025;4(1). https://doi.org/10.1038/s44168-025-00252-3
3. Cazzamatta R, Sarısakaloğlu A. AI-Generated misinformation: A case study on emerging trends in fact-checking practices across Brazil, Germany, and the United Kingdom. Emerging Media. 2025;3(2):214–51. https://doi.org/10.1177/27523543251344971
4. Sunstein CR. Liars: Falsehoods and Free Speech in an Age of Deception. Oxford University Press. 2021.
5. Latour B. Reassembling the Social: An Introduction to Actor-Network-Theory. Oxford: Oxford University Press. 2005.
6. Zuboff S. The Age of Surveillance Capitalism. Profile Books Ltd. 2019.
7. Tufekci Z. Algorithmic harms beyond Facebook and Google: Emergent challenges of computational agency. Color Technol Law J. 2015;13:203–18.

8. Mendonça AMB, Leal Filho W, Alves F. Written Press's Approach to Climate Change in the Autonomous Region of madeira and the autonomous community of the Canary Islands. Climate Change Management. Springer Nature Switzerland. 2023. p. 459–74. https://doi.org/10.1007/978-3-031-28728-2_22
9. Vidal DG. Social and systemic redesign as a response to climate crises: Reflections on "Alter Nativas" documentary. PLOS Clim. 2025;4(1):e0000578. https://doi.org/10.1371/journal.pclm.0000578
10. Silva DF, Carvalho A. Climate activist groups' discourses on science and knowledge: Merging rhetorical strategies with political visions. Environmental Communication. 2025;19(8):1394–410. https://doi.org/10.1080/17524032.2025.2490960
11. Santos TR, Üzelgün MA, Carvalho A. Reporting on young climate activism: How journalistic multimodal choices on television can delegitimise disruptive dissent. Journalism Practice. 2024;:1–21. https://doi.org/10.1080/17512786.2024.2433649