Laurie Parsons. *Carbon Colonialism: How Rich Countries Export Climate Breakdown.* Manchester, UK: Manchester University Press, 2023. 248 pp.

A Review by Ankitha Reddy

Laurie Parsons' *Carbon Colonialism: How Rich Countries Export Climate Breakdown* offers a compelling account of how the environmental cost of wealth generation is paid in places far from where that wealth is accumulated, and toward those with the least capacity to resist or recover. Drawing on extensive fieldwork in Cambodia and a broader critique of development economics, Parsons provides a powerful entry point to understand the enduring colonial structures that continue to shape climate vulnerability in the contemporary global economy.

Parsons begins by dismantling the comforting "One World" façade that "our responsibility is equal, our vulnerability is equal, and crucially, our capacity to act is also equal" (p. 87). They define vulnerability as a function of wealth and its absence. One can't remove money from the geography of disaster, a notion they establish by juxtaposing the Netherlands' and Bangladesh's dam protections, or lack thereof, against floods. As Parsons notes, one can either stop contributing to environmental destruction or accumulate the resources to mitigate its impacts. The Global North's apparent environmental progress, therefore, hinges on industries being shunted to the margins of what they term the global factory. This externalisation is sustained by a second, crucial dimension of carbon colonialism: control over knowledge as "...nothing should be visibly contradictory to their *[companies']* claims… 'Visibly' being the operative word" (p. 62). Hence, long supply chains go further than obscuring emissions such that responsibility dissolves across borders, producing what they describe as "standardised invisibility" (p. 65).

Throughout the book, Parsons grounds these abstractions in lived experience with a particularly arresting chronicle of brick kilns in Cambodia in 2017. They chronicle workers, including children, wheezing through black smoke, hauling bags of bricks destined for distant cities. It produced a moment of cognitive dissonance, both within the author and the readers: the mundane brick, stripped of context, versus the violence of its production. As Parsons makes clear, "it is not about the brick itself, nor even the emissions it generates, but about how environmental laws apply only to fragments of supply chains in a globalised, warming world where this kind of narrow focus no longer makes sense" (p. 91).

The historical core of the book traces how this fragmented accounting materialised through the founding of the global factory. Parsons challenges the assumption embraced in the Global North that industrialisation follows a linear, benevolent path along the Environmental Kuznets curve, which hypothesises that economic growth initially deteriorates the environment before eventually improving it. While economies of scale may reduce costs in manufacturing, extraction, around which most colonial economies were organised to fuel imperial growth, behaves differently. Even after formal decolonisation, these structures proved remarkably durable, locking newly independent states into extractive roles and middle-income traps that development theories struggle to explain. Parsons is particularly incisive in their critique of orthodox models such as theories of convergence and the dual-sector model, which assume an endless supply of labour ready to be absorbed by industry. Although the book occasionally risks treating these frameworks as more hegemonic than they are in contemporary development scholarship, it convincingly shows how their underlying assumptions continue to shape understandings of industrialisation. Within such accounts, nowhere, they note, is there room for smallholder agriculture and industry to coexist sustainably. Instead, as Parsons puts it, "family and farm are absorbed into the market" (p. 39), rendered capital-dependent through attrition.

This absorption becomes a self-reinforcing trap of climate precarity, as Parsons traces how declining agricultural returns, driven by climate instability, force farmers into fertiliser dependence and debt. They then explicate how these converge to push farmers into industrial labour; labour that further destroys the local environment beyond repair, foreclosing any possibility of return to the subsistence they were forced to abandon. Though this story is a classic case of climate change in the Global South, it would rarely be recorded as such because the loss of their land was as much about debt and mechanisation as climate change. In doing so, the book is at its strongest, demonstrating that climate vulnerability is produced through social and economic relations. Yet while Parsons frequently references poverty, labour exploitation, indebtedness, and migration, these largely remain empirical illustrations supporting the broader argument about unequal North-South relations. The meso-level differences shaped by class position, socioeconomic status, and gender are not consistently theorised and incorporated into the central analytical framework to the same degree as geopolitical inequality. As a result, the book offers a convincing critique of uneven vulnerability between regions while providing a less developed analysis of how climate precarity is distributed within them. This under-exploration, however, does not diminish one of Parsons' most important interventions: that the gap between how people experience climate change and how models describe it has long allowed lived perceptions to be dismissed as junk data. "The result," they argue, "is a schism between the disembodied objectivity of the climate itself and the physical, embodied, tangible subjectivity of the suffering it engenders" (p. 117).

Though they develop this argument through rice farmers in Cambodia, bound to the region's brick kilns, the enduring strength of Parsons' framework is that it applies just as forcefully to the extractive economies underpinning AI. Technology has long been heralded as a force capable of transcending borders and bringing about the "death of geography" (p. 208). Yet, the rise of artificial intelligence, and specifically LLMs, has paradoxically created a new, more deleterious form of geographical asymmetry.

The demand for AI hardware relies on critical minerals largely sourced from regions already structured by colonial and postcolonial extraction.[1] Over 70% of the world's cobalt is extracted in the Democratic Republic of the Congo, placing it at the forefront of the green and digital transitions alike.[2] However, large-scale mineral extraction relies on the same conditions of climate-induced instability, debt dependence, and lack of viable employment options that Parsons identifies in Cambodia. As they observe, mineral supplies are geologically determined yet socially mediated, such that geopolitical instability and weak local governance entrench this unequal dependence.

Semiconductor fabrication and chip manufacturing further exacerbate these epistemic and material asymmetries, but the operational phase introduces a critical inflection point that complicates Parsons' framework. While "earlier empires enacted similar ecological disruptions in the service of the colonisers" (p. 63), LLM inference is bound by 200-500 millisecond latency requirements, 99.9% uptime, and by extension, network proximity, preventing data centres from being offshored wholesale in the way that other polluting industries historically were. As a result, the Global North is forced to internalise a greater share of these environmental burdens within its own borders. This is already evident in towns such as The Dalles, Oregon, where Google's facilities reportedly used over 25% of the town's municipal water supply for cooling servers.[3] What emerges here is a displacement of expropriation onto domestic regions that are considered acceptable sites of sacrifice. Interestingly, the carbon intensity of LLM inference can vary by roughly five to tenfold depending on the local energy mix, even within the same company or country.[4] Google's Iowa data centre, for instance, achieved a sixfold reduction in CO_2e per kilowatt-hour by leveraging nighttime wind energy.[5] That such variation exists demonstrates that the environmental burden of large-scale computation is highly malleable in principle. Research consistently shows that the combined effect of energy-efficient cloud datacentres, sparsely activated model architectures, and specialised hardware could reduce carbon footprints by two to three orders

of magnitude.[6] Yet under a neoliberal regime that privileges throughput, these efficiency gains are simply redeployed to justify further scaling.

However, this re-internalisation only holds for a small cog in the global factory; beyond data centres, the LLM supply chain remains deeply colonial in structure, returning to the same in the de-manufacturing line. E-waste processing, concentrated in places such as Agbogbloshie and parts of Southeast Asia, constitutes the toxic afterlife of AI hardware. A World Health Organization report found that a child who eats a single egg from the Agbogbloshie area may absorb up to 220 times the European Food Safety Authority's daily limit for chlorinated dioxins, highly toxic compounds released during the burning process.[7] Even those who do not labour in these industries bear their costs through proximity to contaminated food, air, and soil, illustrating Parsons' broader argument that carbon colonialism operates not only through employment but through the inescapability of environmental harm once it is spatially displaced.

As Parsons makes clear, the issue is not that governments lack information, but that they accept, indeed authorise, these absences as legitimate. "Technical frameworks," they write, "are therefore not only a way of explaining the world, but also of controlling it" (p. 149). This emphasis on knowledge control also reveals another limitation of Parsons' framework when applied to the contemporary LLM landscape, as even where political will exists, control is undermined by how notoriously difficult the impacts are to trace. The physical realities of infrastructure are treated as commercially sensitive, while the models themselves function as black boxes. This even extends to labour, with much of the AI economy relying on forms of ghost work, such as data annotation and content moderation in Kenya, India, and the Philippines, that fall outside conventional environmental accounting altogether. In essence, we do not fully understand how these systems operate, materially or socially, let alone how to govern their cascading effects.

If this book leaves us with a sense of impasse, it also clarifies where meaningful redress must begin. While the final chapter's organisation around six myths that sustain carbon colonialism feels somewhat detached from the sustained empirical analysis that characterises the rest of the book, it effectively distils the political implications of Parsons' broader argument. They reject the re-centring of responsibility on individual behaviour, insisting instead that meaningful action lies in "redirect*[ing]* the energies of the people you encounter towards politics and legislation" (p. 74). This resonates even more strongly in the context of the material infrastructure of today's immaterial technologies, where meaningful consumer choice barely exists. Carbon Colonialism ultimately argues that environmental harm is a calculated condition of how power, wealth, and knowledge are organised, and that responsibility lies within those structures. In this light, its enduring contribution is to shift the horizon of action back to law and collective political struggle.

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[1] Hine, Amelia, Chris Gibson, and Robyn Mayes. 'Critical Minerals: Rethinking Extractivism?' *Australian Geographer* 54 (05 2023): 1–18. https://doi.org/10.1080/00049182.2023.2210733.

[2] Gulley, Andrew. 'One Hundred Years of Cobalt Production in the Democratic Republic of the Congo'. *Resources Policy* 79 (12 2022): 103007. https://doi.org/10.1016/j.resourpol.2022.103007.

[3] Rogoway, Mike. 2022. "Google's Water Use Is Soaring in the Dalles, Records Show, with Two More Data Centers to Come." Oregonlive. December 17, 2022. https://www.oregonlive.com/silicon-forest/2022/12/googles-water-use-is-soaring-in-the-dalles-records-show-with-two-more-data-centers-to-come.html.

[4] Patterson, David, Joseph Gonzalez, Quoc Le, Chen Liang, Lluis-Miquel Munguia, Daniel Rothchild, David So, Maud Texier, and Jeff Dean. 'Carbon Emissions and Large Neural Network Training'. *arXiv [Cs.LG]*, 2021. arXiv. http://arxiv.org/abs/2104.10350.

[5] Patterson et al., 'Carbon Emissions and Large Neural Network Training'.

[6] Patterson et al., 'Carbon Emissions and Large Neural Network Training'.

[7] Ceridwen Johnson, "Soaring E-Waste Affects the Health of Millions of Children, WHO Warns," World Health Organization (World Health Organization, June 15, 2021), https://www.who.int/news/item/15-06-2021-soaring-e-waste-affects-the-health-of-millions-of-children-who-warns.