Planetary Thinking and Climate Parallax: Querying the One and the Many

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I.   The trouble with oneness: the planet of Earth System Science

In *One Planet, Many Worlds: The Climate Parallax*, Dipesh Chakrabarty establishes "the fact that the problem of anthropogenic climate change required us to engage with Earth System Science (ESS)."[1] Such a requirement to engage, along with the reiterated deployment of ESS as the authoritative source to grasp the oneness of the planet, invokes eerily for me the "higher language of science" that Chakrabarty was once critical of in *Provincializing Europe*.[2] Rather than translation between languages and life-worlds, ESS seems to take the place of the "superior positivity of H2O" now, an overarching language infused with the ideal of objectivity and the status of transparency.[3] Although Chakrabarty acknowledges that the Earth system is a constructed "hyper-object" and that ESS is a product of the Cold War, historicizing the science does not provincialize the knowledge for him.[4]

It is important to inquire into how ESS has been not simply science but also politics, from the Cold War past to the perpetual war present.[5] It is part of a regime of

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[1] Dipesh Chakrabarty, *One Planet, Many Worlds: The Climate Parallax* (Brandeis University Press, 2023), 1.

[2] Dipesh Chakrabarty, *Provincializing Europe: Postcolonial Thought and Historical Difference* (Prince University Press, 2000), 75.

[3] Ibid., 83.

[4] Chakrabarty, *One Planet, Many Worlds,* 10-11, 100-101. He acknowledges other understandings and representations of the planet but emphasizes that one cannot understand "how the climate system of the planet, *taken as a whole*, works" without engaging with ESS. Ibid., 1 (original italics), 8.

[5] The politics of ESS includes, though not confined to, the question of how military patronage and funds profoundly shaped research programs and the very constitution of environmental sciences. For an informative study, see Ronald E. Doel, "Constituting the Postwar Earth Sciences: The Military's Influence on the Environmental Sciences in the USA after 1945," *Social Studies of Science* 33:5 (2003): 635-666. The politics of ESS also includes more than the question of whether "those without the power to patrol the heavens, to map and perhaps to devastate the earth can ever meaningfully participate" in producing this science. Sheila Jasanoff cited in Deborah R. Coen and Fredrik Albritton Jonsson, "Between History and Earth System Science," *Isis* 113:2 (2022).

expertise with specific epistemic borders and knotty political entanglements. The dominance of ESS, as other scholars have pointed out, involves marginalizing and displacing other ways of "studying the Earth as a system," other conceptions of the "complex assemblage of animal-micro-biome interactions," and other frameworks of collaboration across plural ways of knowing.[6] The knowledge that ESS produces is far from neutral given its collection, form, and interpretation of data. As Deborah Coen and Fredrik Jonsson demonstrate, the "geo-epistemology" of ESS relies on "remote sensing to produce homogenous global data," externalizes human activity from the Earth System, and erases subaltern agency "from its 'natural' archives."[7] Relatedly, the computer-based mathematical modeling underlying ESS neglects the complexities of climate and reduces it to "a purely physical phenomenon."[8] Whereas Chakrabarty counts on ESS sanguinely to capture the unitary planet, the hegemonic modeling paradigm made it "an agent 'of globalizing reductionism'" for others.[9]

The planet/globe distinction that Chakrabarty presents gets even murkier in the co-production of science and technocratic governance. With its epistemic lineage in the Cold War obsession with weaponizing the forces of nature, ESS is embedded in a "culture of climate modeling" geared toward prediction through simulated projections.[10] Far from decentering the human, it "fabricated … a system of management of the Earth."[11] ESS's predictive modeling of the planet is thereby bound up with managerial spheres of global governance and their domesticating schemes of

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[6] See, e.g., Coen and Jonsson, "Between History and Earth System Science"; Gregg Mitman, "Hubris or Humility? Genealogies of the Anthropocene," in *Future Remains: A Cabinet of Curiosities for the Anthropocene*, eds. Gregg Mitman, Marco Armiero, and Robert Emmett (University of Chicago Press, 2018).

[7] Coen and Jonsson, "Between History and Earth System Science," 408, 415.

[8] Matthias Heymann and Amy Dahan Dalmedico, "Epistemology and Politics in Earthy System Modeling: Historical Perspectives," *Journal of Advances in Modeling Earth Systems* 11 (2019), 1142.

[9] Ibid., 1146. See also Matthias Heymann and Dania Achermann, "From Climatology to Climate Science in the Twentieth Century," in *The Palgrave Handbook of Climate History*, eds. Sam White, Christian Pfister, Franz Mauelshagen (Palgrave Macmillan, 2018), 605-632. Nicolas Clifford also cautions us that ESS represents "an aggressive project" with "totalizing ambitions," providing "another microcosm of the globalization syndrome" wherein "power relations (between scientists, politicians, and public) are recast and reinforced … with a new technocentric method and an *expert* language." Nicholas J. Clifford, "Globalization: Science, (Physical) Geography and Environment," in *Key Concepts in Geography*, eds. Nicholas J. Clifford et al. (Sage Publications Ltd., 2009), 358-359, original italics.

[10] Heymann and Dalmedico, "Epistemology and Politics in Earthy System Modeling."

[11] Ibid., 1147.

mitigation and adaptation, particularly in UN arenas such as the Intergovernmental Panel on Climate Change.[12]

"It matters," Donna Haraway reminds us, "which stories tell stories, which concepts think concepts … which systems systematize systems."[13] It matters whether the concept of the planet stems from a dominant regime of expertise and governance that inherits its epistemological (infra)structure from the Cold War project of conquering the Earth in a race for supremacy. Or whether planetary thinking is grounded in ecological worldviews and relationships that will not register on the homogenous data and computer modeling of ESS.

It matters from which locus and with which stories we decenter the human.

II.   The oneness of modernization: can the modern be provincialized?

There is a schism between Chakrabarty's desire to "provincialize the human" as a humanist historian and the stories he tells about modernity and its emancipatory visions.[14] Although he carefully distinguishes between Western and postcolonial projects of modernity and links both to the climate crisis, the one underlying grammar he seems to take for granted is that modernity is inseparable from questions of (human) freedom and democracy.[15] Chakrabarty invokes a range of voices in the postcolonial world—from state leaders to influential intellectuals to subaltern figures such as young villagers who want city life—in order to demonstrate that emancipatory desires attached to modernization are ubiquitous and undeniable, even if "unfulfilled or unfulfillable."[16] Diverse anti-colonial visions and subaltern desires are thus folded into an astoundingly unitary narrative of liberatory modernization.

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[12] Ibid. ESS is not simply formed by scientific protocols and consensus as Chakrabarty suggests. Chakrabarty, *One Planet, Many Worlds,* 101.
[13] Donna J. Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Duke University Press, 2016), 101.
[14] Chakrabarty, *One Planet, Many Worlds,* 18.
[15] Ibid., 48-49, 87, 106.
[16] Ibid., 100, 106.

The book repeatedly references the hegemonic discourse about modernization and economic growth pulling millions out of poverty without critically examining what Ashis Nandy calls "the undying myth of development."[17] As Nandy and other scholars who investigate the modernization of poverty have emphasized, urbanization and development have exacerbated, rather than solving, large-scale destitution.[18] Their investigation attends to those made invisible by the powerful myth of modernization: the millions of people systemically pauperized and displaced by development projects, including villagers and farmers who were forcibly expelled from their land and their farming life instead of wanting city life as a matter of course. Along with those millions, entire "communities, ecosystems, and voices" get submerged by "monumental modernity," to use Rob Nixon's term.[19]

While Chakrabarty recognizes that the energy extraction for projects of modernization destroys the environment, he ties this destruction to a rhetoric of necessity and redemption. His frequent references to population, coupled with his remark on the Green Revolution, are revealing. Commenting on access to energy and artificial fertilizers, he writes, "without this environment-destroying technological innovation, the world would have found it difficult to feed its growing number of humans. And the India of my adolescent years would have been stranded with massive food crises, if not famines, in the 1960s if the so-called "green revolution" of the late 1960s had not saved the situation."[20] The feed-the-world rationalization of environmental destruction is connected to the dominant discourse of food security. Its misleadingly narrow focus on technology and productivity fails to address the vital role of food production and distribution in determining which humans would actually be

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[17] Ashis Nandy, "The Beautiful, Expanding Future of Poverty: Popular Economics as a Psychological Defense," *International Studies Review*, 4:2 (2002), 108.

[18] Ibid., 115-116. Arturo Escobar also reminds us that "massive poverty in the modern sense appeared only when the spread of the market economy broke down community ties and deprived millions of people from access to land, water, and other resources," making "systemic pauperization" inevitable. Arturo Escobar, "The Problematization of Poverty: The Tale of Three Worlds and Development," in *Encountering Development: The Making and Unmaking of the Third World* (Princeton University Press, 1995), 22.

[19] Rob Nixon, "Unimagined Communities: Megadams, Monumental Modernity, and Developmental Refugees," in *Slow Violence and the Environmentalism of the Poor* (Harvard University Press, 2011), 150-174.

[20] Chakrabarty, *One Planet, Many Worlds,* 80.

fed.[21] Furthermore, social movements for food sovereignty and agroecology have been practicing and advocating for a more sustainable and equitable way of farming and organizing food systems without falsely pitting humans against ecosystems.[22]

The Green Revolution has been criticized for the long-term social and ecological harms resulting from its industrial monocultural model and high-input, resource-intensive package.[23] What I want to highlight here is the logic of oneness undergirding this project of (agricultural) modernization: it claims to advance the only desirable and legitimate path of development. Claiming improved seeds and technological innovations, it set out to remedy Third World and indigenous (agri)culture as it saw existing peasant practices and knowledge systems hardly as anything other than "traditional," "primitive," "backward," and an "obstacle" to economic development.[24] This violence of (dis)regarding difference as backward otherness is

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[21] A decade ago, an UNCTAD trade and environment review already urged a "paradigm shift … from a 'green revolution' to an 'ecological intensification' approach" and alerted us, "Despite significant increases in agricultural productivity and the fact that the world currently already produces sufficient calories per head to feed a global population of 12-14 billion, hunger has remained a key challenge. Around one billion people chronically suffer from starvation and another billion are mal-nourished." United Nations Conference on Trade and Development (UNCTAD), *Wake Up Before It Is Too Late: Make Agriculture Truly Sustainable Now for Food Security in a Changing Climate* (United Nations Publication, 2013), available at http://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=666. See also Eric Holt-Giménez, Hans Herren, Miguel Altieri and Steve Gliessman, "We Already Grow Enough Food for 10 Billion People… and Still Can't End Hunger," *Journal of Sustainable Agriculture* 36:6 (2012): 595–598.

[22] La Vía Campesina, "Food Sovereignty, a Manifesto for the Future of Our Planet," October 13, 2021, https://viacampesina.org/en/food-sovereignty-a-manifesto-for-the-future-of-our-planet-la-via-campesina/; Elizabeth Mpofu and Henk Hobbelink, "Small Farmers Have the Answer to Feeding the World. Why Isn't the UN Listening?," *The Guardian*, September 23, 2021, https://www.theguardian.com/global-development/2021/sep/23/small-farmers-have-the-answer-to-feeding-the-world-why-isnt-the-un-listening.

[23] The harms ranged from exacerbated social inequalities to increasing dependency and farmer debts, health deterioration due to toxic pesticides, contaminated water and soil erosion caused by chemical fertilizers, excessive water use, salinization and waterlogging that led to the loss of cultivable land, among other problems. See Vandana Shiva, *The Violence of the Green Revolution: Third World Agriculture, Ecology and Politics* (Zed Books, 1991); Lakshman Yapa, "What are Improved Seeds? An Epistemology of the Green Revolution," *Economic Geography* 69:3 (1993): 254-273; Raj Patel, "The Long Green Revolution," *The Journal of Peasant Studies* 40:1 (2013): 1-63; Max Ajl and Divya Sharma, "The Green Revolution and Transversal Countermovements: Recovering Alternative Agronomic Imaginaries in Tunisia and India," *Canadian Journal of Development Studies* 43:3 (2022): 418-438.

[24] Yapa, "What are Improved Seeds?"; Gustavo Esteva, "Hosting the Otherness of the Other: The Case of the Green Revolution," in *Decolonizing Knowledge: From Development to Dialogue*, eds. Frédérique Apffel-Marglin and Stephen A. Marglin (Oxford University Press, 1996): 249–278; Aaron Eddens, "White Science and Indigenous Maize: the Racial Logics of the Green Revolution," *The Journal of Peasant Studies* 46:3 (2019): 653-673.

constitutive of modernizing projects. It is enacted—and simultaneously concealed—by the redemptive narrative of modernization as necessary and emancipatory.

Chakrabarty's "many worlds" affirm the multiplicity of political differences.[25] Nonetheless, the main human subjects he addresses remain unitary in one aspect: they are modernizing humans.[26] And modernizing humans, by definition, cannot provincialize themselves. Beyond this irresolvable contradiction, taking for granted "worldwide investment in modernity"[27] leaves many people, voices, and political paths submerged. Investigating such an investment as hegemonic, on the other hand, necessitates inquiring into counter-hegemonic visions and practices in the past and present.

III. The submerged many: other paths, desires, and ways of flourishing

As alluring as the emancipatory aspirations attached to modernization have been, its ideology of supremacy has long been contested in multiple locations. Alternative values and commitments have been articulated and pursued. Noteworthy are three important loci of dissensus that are either glossed over or missing in *One Planet, Many Worlds.*

The first one includes critical interventions from postcolonial, decolonial, and Indigenous thought which investigate the relationship between European colonialism, modernity, and ecology. Chakrabarty posits that postcolonial thought of the 1990s, including his own work, was "environmentally blind" because it "took modernity and the modernization of the world for granted."[28] Yet there were significant critiques, in the 1990s and even before, of both modernizing development and ecological destruction in more than one postcolonial context. Ashis Nandy attended to the nexus

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[25] He avows, "There is no one humanity in politics. Politics stems from what differentiates humans." Chakrabarty, *One Planet, Many Worlds,* 8.
[26] Ibid., 42.
[27] Ibid., 106.
[28] Ibid., 58.

of modernity, science, development, and violence as early as the 1980s.[29] Wary of the use of "the alibis of Development" to destroy tribal life-system and "the forest as foundation of life," Gayatri Spivak underscored "a global movement for non-Eurocentric ecological justice" as she engaged with Mahasweta Devi's work.[30] Ramachandra Guha drew attention to the continuing importance of peasant movements and "the battle for the forest" in the Third World.[31]

Beyond South Asia, Enrique Dussel provided a global account of modernity that accounted for its genocidal violence.[32] In Sylvia Wynter's diagnosis, the crisis was the "globally hegemonic techno-industrial way of life," wherein "the ongoing degradation of our human modes of life" is inseparable from the systematic extinction of many other organic forms of life.[33] In his "anthropology of modernity," Arturo Escobar examined how the development discourse constructed and intervened on both the "Third World" and "nature," and how grassroots movements resisted it and articulated alternatives.[34] Indigenous scholars and activists such as Winona LaDuke and Haunani-Kay Trask have been especially vocal about the ecological havoc wrecked by settler colonial domination, militarism, and developments. Their struggles for land and life cannot be simply folded into "minority" struggles for more rights.[35]

These examples from the 1990s and earlier show us that far from being taken for granted, modernity and the modernization of the world have been interrogated for the past few decades for its violence against both human and nonhuman beings. Notably,

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[29] See, e.g., Ashis Nandy, ed., *Science, Hegemony and Violence: A Requiem for Modernity* (Oxford University Press, 1988). In this volume, Vandana Shiva and Claude Alvares also discussed issues of non-human life, desertification, ecocide, and the growing ecological crisis.

[30] Mahasweta Devi, *Imaginary Maps*, translated and introduced by Gayatri Chakravorty Spivak (Routledge, 1995), 203-204, 198.

[31] Ramachandra Guha, *The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya* (Oxford University Press, 1989). Akhil Gupta's work also dealt extensively with questions of ecology in relation to farmers' practices, the apparatus of development, and global environmentalism. Akhil Gupta, *Postcolonial Developments: Agriculture in the Making of Modern India* (Duke University Press, 1998).

[32] He broke down key elements of "the myth of modernity," including its "civilizing" character and its self-presentation as innocent and emancipatory. Enrique Dussel, "Eurocentrism and Modernity," *boundary 2* 20:3 (1993): 65-76.

[33] Sylvia Wynter, "Is 'Development' a Purely Empirical Concept or also Teleological?: A Perspective from 'We the Underdeveloped'," in *Prospects for Recovery and Sustainable Development in Africa*, ed. Aguibou Y. Yansané (Greenwood Press, 1996), 301-302.

[34] Escobar, *Encountering Development*.

[35] Chakrabarty, *One Planet, Many Worlds,* 59.

these thinkers attributed the ecological crisis to specific modern world-ordering projects, not to humans in general as the term Anthropocene indicates.[36] They urge us to grapple with at least two implications for planetary thinking. First, we cannot redress climate catastrophe within a social imaginary hinged on the racialized production of nature as resources to be mined for human progress.[37] Second, though not recognized as emancipatory by modern measures, subalternized ways of relating ecologically hold reparative possibilities for both nonhumans and humans.

The second locus of dissensus concerns articulations of dissent in the colonized world that diverged from the historically dominant trajectory of modernizing nationalism. Instead of equating anticolonial struggles with the dominant model as if it were a foregone conclusion, it is important to excavate those voices who did not abide by it as the only legitimate path, or even a desirable one. M. K. Gandhi, often cited as a fierce critic of modernity, was only one among many others for whom "the universalist premise of industrial civilization was a hoax."[38] As Amitav Ghosh notes, from the Chinese educator Zhang Shizhao to the Burmese diplomat U Thant, significant numbers of people vocalized concerns about models of economic growth based on the industrial "devouring of the planet."[39] Crucially, heterodox proposals for decentralized and ecologically attuned political and economic systems were advanced.[40] For instance, J. C. Kumarappa, an Indian anticolonial economist, saw large-scale industrialization as an impediment rather than a pathway to meaningful

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[36] Ibid., 45.

[37] This hierarchical divide between (rational) human and (nonhuman) nature is not only foundational to modernity but also racialized since European colonization in that those deemed "primitive," "savage," or "backward" are presumed to be closer to nature and in need of domestication and improvement. See, e.g., Sylvia Wynter, "Unsettling the Coloniality of Being/Power/Truth/Freedom: Towards the Human, After Man, Its Overrepresentation--An Argument," *CR: The New Centennial Review* 3:3 (Fall 2003): 257-337; Bikrum Gill, "Beyond the Premise of Conquest: Indigenous and Black Earth-Worlds in the Anthropocene Debates," *Globalizations* 18:6 (2021): 912-928.

[38] Amitav Ghosh, *The Great Derangement: Climate Change and the Unthinkable* (The University of Chicago Press, 2016), 112. For a provocative examination of Gandhi's critique of modern culture, see Ashis Nandy, "From Outside the Imperium: Gandhi's Cultural Critique of the 'West'," *Alternatives* 7:2 (1981): 171-194.

[39] Ghosh, *The Great Derangement*, 111-115.

[40] Max Ajl and Divya Sharma revisit Tunisian and Indian dissident political thinkers and agronomists to examine these heterodox proposals in Ajl and Sharma, "The Green Revolution and Transversal Countermovements."

democracy, and advocated "village level self-sufficiency for building an ecologically regenerative 'economy of permanence'."[41] Such alternative visions of socio-economic transformation and ecological regeneration are important to reconsider, for they can offer political possibilities for the "many worlds" in our present.

This leads me to the third locus of dissensus: contemporary subaltern struggles against the dominant political economic order and its planet-devouring logics. Notable among them are global Indigenous and peasant movements. Those who have long suffered disproportionately from ecological degradation are not merely helpless victims; they have been at the forefront of demanding structural changes instead of quick fixes. La Vía Campesina, for example, unequivocally rejects the industrial monocultural model of agriculture along with the corporate trade and food regime in its fight against neo-colonialism and capitalism.[42] It mobilizes for agrarian reform, food sovereignty, agroecology, and climate justice, among other demands. Peasant movements emphasize that agroecology is not just an approach to agriculture but a "way of life": "We recognize that as humans we are but a part of nature and the cosmos. We share a spiritual connection with our lands and with the web of life."[43]

Such an articulation suggests that the worlds are many not only politically, but also ontologically. Taking seriously the many ways of being and becoming in this deeper sense of heterogeneity means refusing their submergence by the reign of oneness. We cannot engage in planetary thinking without addressing, as the above movements and thinkers do, planet-devouring forces that annihilate our kin as well as the possibility of making kin. To re-orient ourselves to the politically *and* ontologically many worlds, and to imagine ourselves as "planetary creatures rather than global entities"[44]—as Spivak provoked us to imagine at the very height of the globalization fever of the 2000s—we have a lot to learn from those who already live this imagination in their daily existence and struggles for a planet in which many worlds could breathe.

[41] Ibid., 12.
[42] "La Via Campesina: The Global Voice of Peasants," *La Via Campesina*, 2021, https://viacampesina.org/en/international-peasants-voice/.
[43] "International Forum for Agroecology, Nyéléni Center, Sélingué, Mali, 24-27 February 2015," 5, 16.
[44] Gayatri Chakravorty Spivak, "Planetarity," in *Death of a Discipline* (Columbia University Press, 2003), 73.