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ARTICLE

Thinking Fragments: Adisciplinary Reflections on Feminisms and Environmental Justice

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Abstract

Feminisms and environmental justice are some of the names of struggles to understand nature-culture linkages and conceptualize just worlds for non-humans and their human kin. In this paper, I revisit my journey of doing environmental justice research, i.e. of my feminist scientific practice in Asia and Latin America. In this retrospective telling I highlight how gender, political economy, and race were and remain fundamental in producing the subjects and objects of my research and analysis. I discuss how an implicit feminism helped me grapple with the complex nature-culture linkages I observed in the field. Postcolonial and marxist insights supplement and complement feminisms in the questions I pose as we attempt to imagine new nature-cultures.

So nature is not a physical place to which one can go, nor a treasure to fence in or bank, nor as essence to be saved, or violated. Nature is not hidden and so does not need to be unveiled. Nature is not a text to be read. (Haraway, 1992, p. 296)

When we find ourselves in the subject position of two determinate decisions, both right (or both wrong), one of which cancels the other, we are in an aporia which by definition cannot be crossed, a double bind. It is not a logical or philosophical problem like a contradiction, a dilemma, a paradox, an antinomy....Again, it must be insisted that this *is* the condition of the possibility of deciding. In the aporia or the double bind, to decide is the burden of responsibility. The typecase of the ethical sentiment is regret, not self-congratulations. (Spivak, 2012, pp. 104–105)

The idea of nature contains, though often unnoticed, an extraordinary amount of human history. (Williams, 2005, p. 67)

Feminisms and Environmental Justice as Scientific Practice

In the twenty-first century, the need to imagine different relationships between humans, and between humans and nature, is on agendas across the globe amidst fears of the social and environmental impacts of climate change, rising economic inequities, and continuing racial, gender, and sexual violence. The question driving this special issue—what are the resources within feminist thought that might allow us to imagine new nature-cultural worlds?—is both timely and urgent. In their attempt to know the world and change it for the better, feminist pursuits of new nature-cultures are by definition modern and scientific. But although rising to the conceit of modern science, they do not share its hubris of universal rationality or the idea that “one size fits all.” Rather, feminist perspectives are as diverse as the world, and include those not associated with feminism, the properly named movement. Feminists’ quests for worlds that are just and livable lead them to traverse the terrains of social change along disciplinary, political, historical, activist, and many other paths. In this article, I outline my path and ongoing struggle to understand nature-culture linkages. I trace the genealogy of my intellectual formation, which began in my childhood home, includes

formal academic training in natural and social science disciplines, and self-education through critical readings in various fields. Revisiting the journey of my environmental justice research, I realized that the journey itself embodies a feminist scientific praxis, often an implicit one. In this article, I make explicit the parameters of a feminist scientific praxis and show that it is one that is attentive to relationality and multiple logics, and necessarily anti-sexist, anti-capitalist and anti-colonial.

In this retrospective telling, I highlight how gender, political economy, and race (coded as caste and nationalism) were fundamental in producing the subjects, objects, and analyses of my early environmental conservation research. Yet these key mediating factors of knowledge production were the “present absences” in the methods and approaches I drew on. Still, an underlying sensibility I would now call “postcolonial feminism” made it impossible to ignore the busy traffic between nature and culture that was everywhere. In the language of my field, I realized that the environment, ecology, and sustainability were closely connected to economic and political development.

Race, gender, history, and political economy are present absences in mainstream social science approaches to “sustainable development.” However, they were at the forefront of Afro-Colombian ethnic and territorial claims over the Pacific lowlands of Colombia—a region slated for economic modernization and biodiversity conservation in the 1990s and overrun by violence since the turn of the twenty-first century. Over a decade of critical solidarity with Afro-Colombian movements for social and environmental justice forced me to grapple with the heterogeneities and contradictions of culture-nature connections, including the ferocious and fluid dynamics of capitalist globalization. To account for them adequately in analytical terms, I drew from many wells of critical theories, especially feminisms, postcolonialisms, and Marxisms. I can never repay my debts to those whose intellectual and political labors enable mine.¹ Risking an inadequate accounting, I note that the writings of Donna Haraway, Karl Marx, and Gayatri Chakravorty Spivak frame my understanding of feminisms, postcolonialisms, and Marxisms. Based on

their work and that of others, I show that ethical scientific practice entails persistent critique and requires wrestling with the dilemmas and ambiguities it generates.

I use a first person narrative to flag the dilemmas and ambiguities of research practice. Parallels and resonances with the scientific practice of others may foster collective knowledge about feminist environmental justice. However, these practices do not necessarily represent a generalizable or replicable form of feminist scientific research. Similarly, the seven biographical notes below that chronicle my encounters with nature-cultures are less a memoir than a method emphasizing the partial nature of evidence and the unpredictable and contingent answers to one's research questions. The notes also show the conjunctural nature of research and the far-from-seamless ways through which we gain insights into knotty problems. Academic writing norms, which stress clear transitions, often obscure the choppy and idiosyncratic paths to discovery and the fact that "ah-ha" moments are often buried under the rubble of many thoughts. This form of writing, then, is an experiment in the spirit of feminist and scientific inquiry. I trust that it does not sacrifice clarity and brings some pleasure to the reading.

Note 1: A Conversation with My Mother about God

Me: Do you believe in god?

Ma: Yes.

Me: Why?

Ma: Because we [humans] made gods.

Me: Really? Why?

Ma: Because we could not understand nature.

Me: So who made nature?

Ma: Gods.

Me: If gods made nature and humans made gods, did humans make nature too?

Ma: No, nature made humans.

Such complex and non-causal logics also defined the relations among divine and mortal characters in the folk tales and epic stories I heard from my mother and grandparents. Furthermore, these characters were shape-shifting, and the boundaries between human and non-human were fluid and dynamic. Such fluidity also underlay the spirited debates about nature and culture, science and superstition, modernity and tradition, colonialism and nationalism, philosophy and religion, power and politics, and spirituality and materialism that I witnessed during my childhood in 1970s post-independence India. A motley crew of mostly uneducated but literate members of the extended family, neighbors, *sadhus* and seers from different sects and religions, and friends (mine and my parents) animatedly discussed these themes of national importance. The family dog and strays of various species were at the center of these gatherings and, indeed, of my world.

I wistfully compared our household to that of Gerald Durrell, British naturalist and zookeeper, but I always found us coming up short. For one, our menageries were never as wild as Durrell's, and our tiny apartment in Bombay (now Mumbai) could never match the romance of his teenage home on the island of Corfu. But more importantly, Durrell's narratives of even the most chaotic situations were rooted in a coherent, light-hearted present and signaled a bright future. In contrast, the realm of the past, glorious yet beleaguered, always seemed to weigh down the multilingual and cacophonous conversations at home. They meandered through the labyrinths of India's ancient and colonial history, and lamented its

currently underdeveloped and backward society's floundering on the path to the future. I could discern no singular logic or teleological arc to these discussions.

With no place for multiple logics or polyvocal oral cultures in any imaginable future, reading science was the over-determined choice for a curious child yearning for Durrellian romance. Science held two intertwined promises: the thrill of discovery and a certainty of method—verifiable, tangible, unfettered by traditional beliefs, beyond dispute, and universally intelligible. Paradoxically, science's key appeal was that it was premised on questioning all certainties. It was also the beacon of progress that would bring India's multitudes into a modernity on par with the West.

Note 2: Angsting about Ungulates in the Semi-Arid Regions of India

By the 1980s, environmental issues were becoming issues of global concern and proper objects of science. Ecology and conservation biology were seeking disciplinary status by moving beyond the descriptive domain of natural history to establish scientific methods and theories for the study of flora and fauna, ecosystems, and environmental changes. Although these fields were not considered as prestigious or as important as other STEM (science, technology, math, and engineering) fields, I felt I could legitimately move from the lab to the field to conduct research on the wildlife I loved as long as I did it with the prerequisite degree of objectivity and scientific distance. Among other things, this meant keeping "culture" (as in, anything to do with humans) separate from the study of nature.

My undergraduate advisor and professors fully supported my honors research on wildlife biology.² However, they could not help with identifying a research project or the appropriate theories and methods through which to approach it. With the help of the Bombay Natural History Society (BNHS) and World Wildlife Fund (WWF)-India, I finally found my research object: the endangered Indian antelope or blackbuck

(*Antelope cervicapra*) in Rehekuri, a small forest reserve (2.17 sq. kms.) in a semi-arid region of western India. The antelope, whose numbers had dwindled due to hunting and the loss of their grassland habitat, were wandering into the surrounding unfenced fields and damaging crops. My objective was to understand ungulate (hoofed mammal) behavioral ecology and assess the extent of crop damage around Rehekuri. My broader goal was to contribute data to help address the issue of “human-wildlife” conflicts in national parks and protected areas in India.

Access to the forest reserve, in terms of distance from Mumbai and research permits from the Indian Forest Department, was a serious logistical hurdle. Members of BNHS and WWF finally facilitated research permits. These members and amateur naturalists were often part of India’s upper-middle class of urban professionals. Among them was a medical doctor and wildlife photographer who also served as my advisor. This vanguard was eager to build on Indian natural history (Rudyard Kipling’s *The Jungle Book* is an example) to develop a scientific basis for wildlife conservation in India. This imperative arose as much from the specificities of economic development and conservation in post-independence India as from the international conservation biology debates of the time (see Note 3 below).

Caste, gender, and class were also at play in our attempts to access the research site. When a young urban woman with a stilted command of the local language showed up alone in a rickety public bus at an isolated part of rural India one hot morning, the forest officers and guards were at a loss. Eventually, I was taken to speak with the district forest officer’s wife, who ascertained that I had a sound “moral character,” appropriate caste background, and parental consent to be there. I was then left alone to do my fieldwork, though it took a letter from my advisor for me to stay in the forest guesthouse. The hospitality and graciousness of the guesthouse guard’s wife saved me from going hungry during fieldwork, but not from burning my mouth and insides with the spicy food. When I visited the field in the company of the doctor and other urban naturalists, we were served bland or mildly spicy food. But

during my solo field trips, no amount of begging led to any significant decline in the spice level of the meals. What I cannot know for sure is whether the cook was asserting her agency and resisting my presence (respectable young women do not wander in rural areas alone), or claiming me as kin (we appeared to be the same age).

Having cleared these logistical hurdles, the next ones were of the textbook variety: identifying and accomplishing my specific research goals within money and time constraints. Neither advisors nor books on wildlife biology had any useful advice on navigating such methodological dilemmas as:

- The appropriate census methods to obtain an accurate antelope count
- Identifying and classifying grasses and sedges that antelope ate
- Assessing the extent of “crop damage” (I asked the farmers how much crop damage antelope caused, when, how. Their answers: Lots of damage, anytime the crops are in the field.)

Equally complicated was the issue of habitat loss. Colonial legacies shaped the bureaucratic structure and functions of the Indian Forest Department. Their mandates included “afforestation,” (establishing tree cover on bare or tree-less land) which meant that plantations of fast-growing eucalyptus trees were reducing the antelope’s already small open grassland habitat and lowering the water table. The afforestation mandate thus conflicted with the Forest Department’s added mandate of conserving wildlife. To resolve this, the deputy forest officers often fudged the counts by increasing the number of animals by a certain percentage every year, never mind that they exceeded the tiny reserve’s carrying capacity. Forest personnel also created havoc, albeit unintentionally, when they removed all the dung piles of antelope droppings to use as fertilizer. I had painstakingly mapped these dung piles after observing that they were markers of antelope territories and governed the herd dynamics of these highly social animals. Their removal disrupted herd patterns and drove the animals further outside the reserve’s unmarked boundaries.

Keeping people out of the reserve was just as difficult as keeping antelope in. Villagers, often women, collected firewood, fodder, and other non-timber forest products (NTFPs) “illegally” from the reserve. Such examples of what from Haraway (1989) we understand as the busy traffic between nature and culture were everywhere and haunted the margins of my field notes. But neither these hauntings nor the many fieldwork dilemmas made it into my thesis or the scientific publication based on this research. Attributing my dilemmas to inadequate methodological skills to study nature separate from culture, I came to the United States to do graduate work in environmental conservation.

Note 3: Iguanas and Other Fauna, or Old Dilemmas in the New World

Different colonial and national histories, political economies, and grammars of race, place, and gender structure environmental science in the United States. The 7000-acre Duke forest in the North Carolina Piedmont was an important research and teaching site for students at the School of Forestry and Environmental Studies. What were now regenerated forests were formerly fields and tobacco plantations. Never once in my course of study was there a discussion of who worked those fields and how slave labor contributed to the past and present “resources” we were learning to manage rationally for timber and other uses.

Not only was the past another country, there was little sense of internationalism or curiosity about the larger world among my US peers and professors. This meant that there was neither intellectual mentorship nor research funding for me to return to India to conduct fieldwork for my master’s project. While I did not know it then, Cold War politics and the absence of bilateral relations between India and the United States also had something to do with my inability to return. My sense of such history and politics was inchoate at best. But an inherited anti-colonial sentiment made me want to continue research in the “third world,” and led me to the neotropics. It also became evident that although there were well-

developed approaches to understanding temperate zone ecologies, they were not applicable in the tropics. Hence, over the next five years (from 1987 to 1991), I spent as much time in the field as academic calendars, funding, and visas would allow.

Conservation and evolutionary biologists had begun arguing that the fate of the living world depended on *biodiversity*, the diversity of living nature (Soulé, 1986; Kramer, van Schaik, & Johnson, 1997). As much of this biodiversity is concentrated in the tropics, John Terborgh, one of the leading figures in tropical ecology, extols:

The special scientific value of tropical forests is that they offer our last chance to study nature in its prehistoric condition, nature as it evolved over eons past....Pristine ecosystems still exist in parts of South America, central Africa, Indonesia, New Guinea, and some other Pacific islands. These ecosystems are priceless and irreplaceable assets, for they constitute some of the few remaining controls for biological science. (1992, p. 29)

With its marked absence of human presence or sense of history, this statement is representative of the views of classical tropical conservation ecology. No surprise then that in one of the first awkwardly expressed examples of public concern about biodiversity loss, the 1986 National Teleconference on Biodiversity (The National Academies, 2011), there is no analysis of the links between international political economy and the rising rates of tropical deforestation. Similarly, deforestation and resource exploitation were uncritically blamed on poor, local people and “resource scarcity” due to “overpopulation” (Peluso & Watts, 2001). Such views persist despite extensive evidence to the contrary.³

I was disturbed, yet influenced, by these discourses and sought neutral knowledge of tropical flora and fauna for the formulation of modern environmental policies and sound management practices. I studied agroecology, agroforestry, population ecology, black-bellied whistling ducks, and green iguanas in Costa Rica. In North Carolina, I mapped the Piedmont forests for the purpose of “ground truthing” remotely sensed data on forest cover. Later I repeated the exercise in the

forests of Belize. I also studied advanced wildlife management techniques in southern China before spending six months in the Brazilian Amazon studying aquatic and avian biology.

My research questions and the sites of my investigation were as over-determined as my ability to learn new languages. Across them, messy meshing of nature and culture, ecology and economics, and geography and politics shaped my research objects. Yet, I had no tools to account for them nor to assess observations, such as women regularly fishing in Mamiraua (the region of the western Brazilian state of Amazonas where I lived) while asserting that only men fished; a famous English scientist whose fungal infection had just been effectively treated with local remedies lecturing *caboclos* (indigenous or mestizo peasants living along the rivers) about the miracles and superiority of Western medicine; and a “poacher”—the wiry eighty-year-old who was my field father—single handedly capturing and killing a caiman the same size as him. Any lingering doubts that flora and fauna were literally and metaphorically entangled with humans, the environment, and political economy drowned in the rising waters of the *varzea* forests of the Amazon in June 1991.

A few months later, I started doctoral work at the University of Florida with funding from the Tropical Conservation and Development (TCD) program. At TCD, faculty and students from the natural and social sciences (but none from the humanities) came together to develop interdisciplinary approaches to environment and development concerns. My degree-granting department was Political Science.

Note 4: Linking Ecology and Economy through Sustainable Development

Courses in comparative politics, international development and environmental policy, and an internship at the World Bank as a “biodiversity conservation” consultant, soon made it clear that the standard approaches of the social sciences emulated the ahistorical,

apolitical empiricism of the natural sciences. It took rather longer and much wandering across literal and disciplinary (political theory, history, area studies, literature, feminist theory, and more) fields to learn that all sciences have roots in Enlightenment ideals of progress through science and reason (Hall, Held, Hubert, & Thompson, 1996). Science and technology studies (STS) was concerned with modernity and progress in Europe and the West, and “development” was their non-Western counterpart.

The West and “the Rest” emerged in relation to each other in colonial times. Within my comparative politics textbooks, however, there were no signs of such connections until the post-World War II period and the launch of the development project in the 1950s. The goals of development were to eradicate poverty in the third world and overcome political and economic underdevelopment under the tutelage of the West (Edelman & Haugerud, 2005). Governed by Cold War anti-communist rhetoric, theories of political modernization and development posited that economic growth (through industrialization, infrastructure, and development) in the newly-independent (African and Asian) and currently-underdeveloped (Latin American) countries would help them “catch-up” with the developed world. Capitalist accumulation was the “natural” or inevitable path to progress, the benefits of which were supposed to “trickle down” and lead to development and liberal democracy. When underdevelopment and poverty continued to plague the third world, their causes were traced to internal roadblocks to national capitalist accumulation and progress, such as corruption, overpopulation, and the pesky, persistent “traditional values” of its backward people. Such Eurocentric views prevail in conventional thinking about science, technology, and development.

Development was not without its critics. Marxist-inspired dependency and world-systems theorists saw the struggle for development as part of anti-imperialism and nationalism. Writing in the 1960s and 1970s, they argued that capitalist expansion depended on complex and unequal connections—between colonies, nations, regions,

and world markets—and offered structural explanations of persistent inequalities and uneven economic growth (Edelman & Haugerud, 2005). In political science classrooms, however, such critiques were discredited as “ideological” and were seldom given time or analytical attention. But both modernization and Marxist-inspired theories of development were similar in their humanism and consideration of “nature” as the de facto source of raw material for economic growth and human development. Both also relegated rural populations and women to the “economically unproductive” subsistence and domestic sectors. From the perspectives of Marxist comrades and World Bank policy pundits, the work of the women in Rehekuri and Mamiraua could only be invisible or unproductive, even to the women themselves.

Since the 1970s, a broad spectrum of gender professionals and feminists scholars from the Global North and Global South has also been examining the causes and consequences of women’s exclusion and exploitation within development (Braidotti, Charkiewicz, Häusler, & Wieringa, 1994; Saunders, 2002). Scholars rooted in Western, liberal feminism blamed public and private patriarchy for women’s oppression and sought equal economic and political rights for women. Integrating women into the formal economy, they argued, would also promote economic growth. Marxist and socialist feminists extended structural critiques of uneven development and argued that capitalist accumulation systematically depended on and undervalued subsistence production and women’s labor. Thus, they saw gender inequities as part of a continuum of inequalities between countries, classes, regions, and ethnic groups. Their critiques show the need to rethink the structures of capitalist development, and the power relations of class, race, and gender. The application of their critiques is a call for a “rights-based” approach to human development and welfare.

A parallel set of discussions was taking place at the same time regarding women’s roles and gender relations in natural resource management and the environment (Braidotti, Charkiewicz, Häusler, & Wieringa, 1994). Most famously, “ecofeminists” such as Vandana Shiva

from India and Wangari Maathai from Kenya highlighted that poor rural women in the third world depended on nature for their survival and were more likely to be knowledgeable "resource guardians" rather than "resource degraders" or hapless victims of development. Viewed through these lenses, rural women's work—collecting firewood, fishing, farming, and more—takes on different value. But the analytical insights and questions raised by feminists in the extensive literature on "women, gender, development, and the environment" seldom make it into most classrooms or policy boardrooms.

Feminists do deserve a degree of credit for getting scientists and policy makers to see that economic and environmental issues are two sides of the same green coin. In 1987, the World Commission on Environment and Development (WCED) published a report titled *Our Common Future*. Published under the direction of Gro Harlem Brundtland (then prime minister of Norway), the WCED report famously introduced the concept of "sustainable development," which it defines as:

development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of "needs," in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs. (WCED 1987, p. 43)

The report and the WCED laid the groundwork for the United Nations Conference on the Environment and Development (UNCED) and the parallel Earth Summit, held in Rio de Janeiro in 1992. The linkages between environmental-ecological issues and their correlate "economic development," were consolidated at UNCED. An action plan for the twenty-first century (Agenda 21) was outlined and a Commission on Sustainable Development (UN Department of Economic and Social Affairs, n.d. (a)) was established. It was charged with following up on Agenda 21 and the various accords signed at the Earth Summit.

Ecological and economic sustainability became the focus of debate in a wide range of disciplinary and organizational realms (Kramer, van Schaik, & Johnson, 1997), including in the TCD program at the University of Florida. Following UNCED, many states, nongovernmental organizations, and multilateral institutions engaged with sustainability, the environment, women, and gender.

This institutionalization of sustainability paralleled the globalization of development. After the unexpected end of the Cold War, a neoliberal phase of development emerged in the 1990s that emphasizes economic globalization through free trade and markets. It persists to this day. This phase of economic globalization suffers from amnesia about the natural and cultural bases of its past ascendancy and the uneven negative impacts of market capitalism. According to neoliberalism, empowering women, peasants, indigenous peoples, Afro-descendant communities, and marginal groups to become consumers and entrepreneurs in global markets can overcome their social and economic exclusion. In this framework, environmental problems are anomalies or externalities to be addressed through market integration. In 1992, I did not yet know the analytical parameters of this logic but saw it at play when I was an intern with the Global Environmental Facility at the World Bank. Their approach to biodiversity management and conservation in Latin America was premised on pricing it correctly. That is, biodiversity was understood as an economic commodity in which its ecological characteristics had no bearing.

Economic logic also governed the Millennium Development Goals (MDGs) (Millennium Project, 2006). The MDGs aimed to reduce poverty by half between 2000 and 2015, but were based on a narrow and centrally-defined set of targets and indicators. Issues of equity or sustainability were virtually absent from the MDGs. Opinions are divided about whether the MDGs were successful even by their own shifting criteria (the baseline of measurement was moved from 2000 to 1990). In 2012, twenty years after UNCED in Rio de Janeiro, the call for sustainable development and poverty eradication needed to be renewed at the UN

Conference on Sustainable Development (UN Department of Social and Economic Affairs, n.d. (c)).

In 2015, more broadly defined Sustainable Development Goals (SDGs) (UN Department of Social and Economic Affairs, n.d. (b)) replaced the MDGs. But in those too the various state agencies and multilateral institutions concerned with the SDGs and other global issues (now appearing as subsets of climate change) lauded the virtues of the “green economy” and “green growth,” despite the lack of conceptual clarity or agreements about the applicability or desirability of these terms. Persistent inequalities (including those of gender, race, and class) remain subject to management through pragmatic and depoliticized projects to “empower women” and “mainstream gender.” Such attempts not only ignore structural factors driving existing inequalities and unsustainable development but undermine public action for social and environmental justice (UN Women, 2014).

Note 5: Economy, Environment, and Ethnic Rights in the Pacific Lowlands of Colombia

Needless to say, these standard approaches to environment and development linkages provided inadequate accounts of the complex socio-natures that I had first observed as a field biologist. Nor could they help explain the dynamic interrelations between economic, environmental and local struggles I began witnessing in the biodiverse Pacific lowlands of Colombia in the 1990s while conducting doctoral research there. My time in the field coincided with the “cultural turn” in the social sciences and poststructural and postcolonial critiques of modernity and science. Scholarship from a range of fields—anthropology, sociology, geography, and environmental history—were contesting the technical, apolitical, and ahistorical nature of modernization and opening up conversations about the meanings, production, and effects of scientific knowledge and development interventions (Crush, 1995; Saunders, 2002).

Feminist, queer, and other critical perspectives were also reframing

debates about the nature of subjectivity, domination, and resistance and positing that reclaiming different identities and subjugated experiences is a form of politics. New ideas about knowledge and power were leading to new evaluations of these kinds of grassroots struggles and “new social movements” (NSMs). In Latin America, NSMs described the loosely-organized coalitions of factory workers, peasants, women, urban squatters, and ethnic groups who rose up in protest against the state and forces of late capitalism starting in the 1980s (Escobar & Alvarez, 1992). Marked by a diversity of interests, identities, and organizing strategies, these NSMs drew on idioms of traditional or popular culture to seek democratic participation and imagine alternative forms of politics beyond liberal (equality) and Marxist (class-based exploitation) claims.

In conjunction with this scholarship, many activists and professionals from the third world denounced development as a tool of hegemonic, Eurocentric modernity, which imposed Western rationality and marginalized non-Western systems of knowledge (Sachs, 1992). These writers argued that the traditional lifestyles and livelihood practices of marginalized local communities suggested sustainable alternatives to development and heralded a “post-development” era.

Such postmodernist, postcolonial, and anti-modernist perspectives keenly shaped my observations of Afro-Colombian struggles for ethnic and territorial rights. In a first approximation (my dissertation), I interpreted these black movements as resisting the state and institutionalized development and these activists as reclaiming their identities and experiences as Afro-Colombians. I uncomfortably echoed post-development claims that the assertion of cultural practices closely linked to nature could be the basis of economic alternatives. Such an explanation of Afro-Colombian ethnocultural politics, however, did little justice to the heterogeneity of black movements and experiences. It was as rooted in nature-culture binaries as the standard approaches of my disciplines.

Extended fieldwork with social movements obliged me to grapple with how capitalist development (as a practice of science) and struggles

for social change were intertwined in contradictory, complex, and contingent ways. Rather than autonomous expressions of resistance, black struggles, including black women's expressions, were at least partially shaped by and through the very discourses of political and economic modernity they opposed. A decade after my first interpretation and aided by critical (re)readings of critical scholarship, my second interpretation of Afro-Colombian struggles theorized the dynamics between development and struggles for change beyond such binaries as tradition vs. modernity, exploitation vs. resistance, global vs. local, theory vs. practice, cooptation vs. autonomy, and development vs. alternatives (Asher, 2009).

As with all projects of knowledge production, this one generated many questions. These questions have since structured my scholarship and activism. How are processes of differentiations (of class, race, ethnicity, gender, nation, nature, and regional origin) shaped by the state and society, and shape them in turn? How can we grasp the ferocious yet fluid onslaught of capitalist globalization and its constitutive intersections with nature and culture? That is, how are the subjects and objects of analysis, attention, and intervention constituted as such? How can we eschew romantic understanding of subaltern agency while accounting adequately for their power and resistance? How can we be in critical solidarity with struggles for social and environmental justice?

Insights into these questions came from the challenges of teaching in the US academy. I began to learn what I was trying to teach: the slow, unguaranteed labor of persistent critique as ethical practice, which is the abiding concern of feminisms, postcolonialisms, and Marxisms.

Note 6: Feminism as Science among Ecofeminists and Foresters

Feminism was implicit in my early research on nature, even though women were absent. In my current work on the raced and gendered dynamics of environmental change in the Global South, feminism and women are explicitly central. As part of that work in March 2011, I

attended the inaugural activities of a three-day Grandmothers University at the Beej Vidyapith, Vandana Shiva's organic farm and training center, located a few hours from Dehra Dun in the Garhwal hills of Northern India. Among the attendees were young students, mostly white Euro-Americans but also some from Latin America, and many thirty-to-forty-somethings from the Indian diaspora, who had come to learn organic and sustainable agricultural techniques from Garhwali women. The speakers at the flower-draped podium included Shiva (a world-renowned activist and critic of mainstream agriculture and development, who trained as a physicist), Sunderlal Bahuguna of *Chipko* fame, and Margaret Alva, then-governor of Uttar Pradesh. The Garhwali teachers—a dozen grandmothers, mothers, daughters, and daughters-in-laws—were at the edges of the crowd, barely visible behind Governor Alva's black-suited bodyguards.

In their inaugural remarks, Alva and Shiva extolled the many virtues of grandmothers: their long view of what is called “sustainability” now, their traditional knowledge and wisdom about the earth, and their advice to practice love and compassion. Shiva noted that, “because most of our grandmothers have not gone to school, they have a holistic knowledge of the world, not the broken knowledge of textbooks. They teach us prudence and not to run after money. Grandmothers seek wealth of nature in harmony, and of social relations.” Shiva's powerful and charismatic remarks focused on valorizing knowledges heretofore undervalued in scientific discourses. I had heard similar things from my grandmothers and mother, and shared many of Shiva's claims. Yet, I was uneasy with her reversals. Her simplistic representations seemed to be missing the opportunity to invite her audience to engage with gender-environment relations in all their complications. I first learned about such complications from my mother, and they underlie Haraway's (1989) admonition that in feminisms simple reversals will not do and Spivak's (1999) argument that postcolonialism cannot simply recover subaltern agency or reveal the hidden.

My unease became tinged with irony upon observing that notions of “traditional knowledge” shape not only “post-development”

alternatives but also policies of mainstream development institutions that once deemed such knowledge an impediment to progress. The World Bank's Operational Directive 4.2 to integrate gender, indigenous peoples and Afro-descendant communities into development is perhaps one of the most notable examples of such policies. The impact of these policies is highly debatable. But my concern here is to convey the complications of nature-cultures that get sidestepped or, worse, recreated in binary representations of tradition vs. science. I had an opportunity to grapple with this task a few years after I heard Shiva's remarks in Dehra Dun.

With gender and forests re-emerging as central to the global sustainable development agenda, environmental organizations were also attempting to integrate gender into their research and actions. Diverse professional networks and coincidences led me to work at one such organization, the Center for International Forestry Research (CIFOR) from 2013 to 2015. After two decades I once again found myself working with natural scientists who prided themselves on their "sound science." They implicitly and explicitly rejected any form of advocacy or politics. Thus, feminist insights were suspect, but women's contributions to forestry or natural resource management were valid as long as they were empirically and objectively verified. Unsurprisingly, attempts to talk about gender beyond a natural, neutral, biologically-determined difference between women and men were dismal failures.

A momentary connection occurred in Science@10, a weekly event where CIFOR scientists gave ten-minute presentations on their research to their colleagues. These presentations and the discussions afterwards were recorded for wider dissemination. In my presentation, titled "Women Are to Gender What Trees Are to Forests" (Center for International Forestry Research, 2015), I made an analogy between the heterogeneity of forests and the diversity of women to draw attention to the lessons from forty years of scholarship on gender, development, and the environment. I reviewed some of the fundamental points of departure of forestry research, including that forests are complex biophysical and ecological entities, that there are many kinds of forests, and a collection

of trees does not automatically make a forest. I juxtaposed those with some insights from “gender” research, including that gender is not simply a relation between men and women, and that a focus on the heterogeneity of women and their social roles is necessary but provides insufficient accounts of inequities and power. Through such juxtaposition, I argued that gender in forestry research means not just adding women but asking questions about our assumptions, approaches, and explanations about gender and forests.

This short presentation generated many questions about women and—or *in*—forests. It even skirted the edges of the question, “What are forests?” In a limited way, it was more successful than any of my previous conversations with my colleagues about gender or, indeed, any social issue. Yet, it fell short of an engagement with the social and political nature of *all* research and scientific knowledge production. Animating such conversations is part of the ongoing challenge of feminist environmental work. It was clearly one of the objectives at the Grandmothers University at Beej Vidyapith.

Note 7: Re-Encountering Nature-Cultures

In the context of the early twenty-first century, when fears of climate change catastrophes are linked to indices of social inequalities, the need for different relationships between humans and nature is on agendas across the globe. Attempts to imagine new nature-culture relationships within feminist STS, and this special issue, remind me of that conversation long ago with my mother. I invoke her not to reveal her agency or “give her voice.” Rather, her formulation of nature-culture was my introduction to the idea that subjects emerge in relation to each other. This idea of subjects in relation is prevalent in many cultures and ways of thinking. This does not mean that relations are simple, outside of power, value-free, or uncontested. It is certainly not easy to understand or act upon this idea. But it stands in contrast to a key assumption of modern sciences, including the social or human sciences—that subjects of inquiry

and action are discrete, a priori entities (individuals, animals, societies, countries, etc.) By obscuring the multiple relations that constitute and bind the socio-natural world, mainstream, disciplinary, scientific thinking provides inadequate accounts of it, and cannot strive for a better world or achieve development. As the anthropologist Eric Wolf notes in the opening lines of his book *Europe and the People without History*, the world of humankind constitutes a manifold, a totality of interconnected processes, and inquiries that disassemble this totality into bits and then fail to reassemble it falsify reality. Concepts like “nation,” “society,” and “culture” name bits and threaten to turn names into things. Only by understanding these names as bundles of relationships, and by placing them back into the field from which they were abstracted, can we hope to avoid misleading inferences and increase our share of understanding. (1992, p. 3)

My attempts to understand the “bundles of relationships” between the environment (which I understood to be non-human nature) and human development (which I understood to be social and cultural) led me to wander purposefully through various fields of scientific inquiry. My wanderings convince me that suturing the many severed connections between nature-cultures and imagining a more livable world for all requires methodological and epistemic multilingualism. That is, it requires learning the different grammars of actual and analytical languages or approaches. In closing, I sketch why and how the grammars of feminisms, anti-colonialism, and Marxisms crucially inform my struggles for environmental justice.

Feminist theorists of various persuasions have asked, Who counts as a legitimate subject of knowledge production (science) and action (politics)? Who/what is relegated to object status? How are such subjects produced in space and time? How are sex/gender constitutive of subjectivity and vice versa? What are the implications of exclusion and inclusion? Aside from the key issues of sex/gender, such questions have also been central to numerous variants of postcolonial scholarship. That is, anti-colonial scholars from early nationalists to current postcolonial

and decolonial thinkers have interrogated and contested the relationship between those people and places deemed “civilized” (generally from the West or developed societies) and those seen as unable to govern themselves (generally aborigines or those from “the Rest” of the world). Since the Enlightenment, the gendered and raced bodies of women and the colonized have been equated with nature and made into objects of Western science and governmentality. What feminist and postcolonial projects have in common is a concern for how to respond to this reductionism.

The projects of social change within contemporary feminist and anti-colonial politics then are not only about claiming the status of knowing and legitimate subjects but asking fundamental questions about how subjects and objects (culture, nature, nations, colonies, etc.) emerge in relation to each other within specific historical and geographic contexts.

Since the processes of (colonial) capitalism have been key in shaping the modern world, understanding the political economy of capitalist production is a necessary (but not sufficient) labor. That a critical engagement with the work of Karl Marx, one of capitalism’s greatest critics, might be fruitful for nature-culture thinking is something I learned from Wolf and Haraway. In his chapter outlining the parameters of various modes of production, Wolf (1992) begins by flagging Marx’s axiomatic understandings of the human condition—that humans being are part of nature but also change it to survive. In the process, they change their own nature. That is, humans and nonhumans are linked together in a dialectic and mutually constitutive relationship. Within the capitalist mode of production, that relationship is both governed and hidden by the commodity form. As Haraway explains,

Marx, of course, taught us about the fetishism of commodities. Commodity fetishism is a specific kind of reification of historical human integrations with each other and with an unquiet multitude of non-humans, which are called *nature* in Western conventions. In the circulation of commodities within capitalism, these interactions

appear in the form of, and are mistaken for, things. (1997, p. 135; my emphasis)

It is a consensus among many fields that truly just relations cannot emerge from within Enlightenment thinking and colonial capitalist modernity (which constitutes and rests on gendered, raced, classed, and sexed inequities). But it would be a mistake to think that we can simply reject them and have recourse to “traditional” alternatives. We must take the knowledges of grandmothers and indigenous peoples seriously but we cannot romanticize or fetishize them.

I suggest that Spivak offers useful insights into how to mobilize or operationalize this insight. In the afterword to *Imaginary Maps*, her translation of Mahasweta Devi’s short stories about tribals in India, she notes:

I have no doubt that we must *learn* to learn from the original practical ecological philosophers of the world, through slow, attentive, mind-changing (on both sides), ethical singularity that deserves the name of “love” — to supplement necessary collective efforts to change laws, modes of production, systems of education and health care....Indeed, in the general predicament today, such a supplementation must become the relationship between the silent gift of the subaltern and the thunderous imperative of the Enlightenment to “the public use of Reason,” however hopeless that undertaking might seem. One filling the other’s gap. (1995, p. 201; emphasis in original)

Spivak’s postcolonialism is often dismissed as mere critique that does not offer a roadmap for a different future. But I read in her call “to learn from below” an invitation to engage in the slow, unguaranteed labor of careful critique and patient undoing of the problematic of development or science. Paraphrasing and summarizing her complex formulations (1999), I suggest that her methodology entails mobilizing a historico-political perspective to supplement science in service of feminist, anti-racist and anti-colonial efforts. For social and environmental justice work, this supplementing involves tracing how rural communities, third-world

women, and nature are inserted into the circuits of global capitalism. That is, it means tracing their complex and contradictory relations with the state, nationalism, development, and environmental politics. Such tracings reveal the gaps and fissures of dominant logic and the traces of other logics that are always already there. These are some of the radical but unromantic tasks that we must necessarily undertake to imagine new feminist STS nature-cultures.

Notes

¹For this reason, I have mostly cited anthologies and edited collections that contain the scholarship I draw on or that focus on the debates I engage, rather than books or articles by individual authors. For this same reason, I have kept self-citation to a minimum.

² I will be forever grateful to my mother and my undergraduate advisor Dr. Sam Waugh (who passed away at a young age a few years later) for enabling me to pursue what was an unusual venture. They and my science teachers at St. Xavier's College were truly remarkable in their willingness to let their students follow their curiosity beyond the college curriculum. This was no small thing in Indian science then.

³ See, for example, the journal *Different Takes* (Population and Development Program, n.d.).

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Bio

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