Where Ecology, Nature, and Politics Meet: Reclaiming *The Death of Nature*

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ABSTRACT

The Death of Nature offered a promising bridge between the history of ecological thought, a subject of the history of science, and the history of environmental change, the purview of environmental history. Such bridging was an ambitious goal, hindered, as this essay argues, by the histories and politics of academic disciplines and their publics. Directions in both the history of science and environmental history, as well as the current political climate in the United States, make today an opportune moment once again to explore productive places of exchange that *The Death of Nature* invited us to consider twenty-five years ago.

RETURNING TO CAROLYN MERCHANT'S *The Death of Nature* takes us to a historical moment that is as relevant today as when the book first appeared. In 1979, one year before its publication, news of a faulty reactor at Pennsylvania's Three Mile Island gripped the nation. Horrified by the possibility of a nuclear meltdown, made only more terrifying by Hollywood's release of *The China Syndrome* just days before, 140,000 residents haphazardly fled the area, while Governor Dick Thornburgh watched helplessly as his state's ill-conceived evacuation plans failed in the face of a disaster unprecedented in history. On Sunday, 1 April, five days into the unimaginable event, scientists and engineers announced that they had stabilized the reactor's core. Disaster had been narrowly averted. But for years residents harbored anxieties regarding the exposures to radioactivity they had received as a result of U.S. energy policy and an unbridled optimism about the ability of scientists and engineers to harness, master, and fully control the forces of nature. Such intellectual hubris, Merchant wrote in 1980 in the epilogue to *The Death of Nature*, evident

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in "the March 1979 accident at the Three-Mile Island nuclear reactor, epitomized the problems of the 'death of nature' that have become apparent since the Scientific Revolution."[1]

The radioactive cloud building inside the Three Mile Island reactor in the spring of 1979 revealed that political gains made by the American environmental movement were far from sufficient. Environmentalists took pride in a host of Congressional bills, passed in the early 1970s, that created agencies such as the Environmental Protection Agency and legislation such as the Endangered Species Act. Yet such gains fell short of those envisioned by the environmental protests of the 1960s, which, coupled with the feminist and civil rights movements, had offered a structural critique of American society. By the mid 1970s ecology, championed as the subversive science by writers and activists like Barry Commoner, had become thoroughly institutionalized within the Washington bureaucracy, one among many scientific disciplines to contribute to the control and management of the environment. But neither scientists nor engineers could contain all of the toxic waste generated by an affluent, consumer-oriented, industrialized society; it bubbled to the surface and erupted into political firestorms at Love Canal, New York, and in Warren County, North Carolina, in the early 1980s. Too often, poor and minority communities suffered most from harmful environmental exposures; they bore, and continue to bear, the greatest environmental burdens of society.[2]

The Death of Nature appeared at a turning point in American environmental politics, a time when "justice, nature, and the geography of difference," to borrow a phrase from David Harvey, were coming into view.[3] Environmental inequalities mapped closely onto the geographies of race and class in America. While the political agenda of American environmentalism had, for the most part, been dominated by the ideals of the white middle class, in which the rights of nature existed apart from those of society, a different ecopolitics came to shape the environmental justice movement as it gained ground in the 1980s. Political struggles for the environment could not be decoupled from the struggles for economic and social justice. Ecological relationships between humans and the natural world were integral to the social relations of society.

In *The Death of Nature*, Merchant looked to ecology and history to craft a radical critique of capitalism, mechanistic science, and environmental and social injustice. In her analysis, the historical domination of nature could not be separated from the historical oppression of women or of the laboring classes. It was a critique informed by neo-Marxist social theory that emerged out of the Frankfurt School, particularly through the writings of William Leiss, a student of Herbert Marcuse, whose publication of *The Domination of Nature*

[1] Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution* (San Francisco: Harper & Row, 1980), p. 294.

[2] For a sampling of literature on environmental justice and racism in an American context see Robert Bullard, *Dumping in Dixie: Race, Class, and Environmental Quality* (Boulder, Colo.: Westview, 1990); Giovanna Di Chiro, "Nature as Community: The Convergence of Environment and Social Justice," in *Uncommon Ground: Rethinking the Human Place in Nature*, ed. William Cronon (New York: Norton, 1996), pp. 298–321; Michael Egan, "Subaltern Environmentalism in the United States: A Historiographic Review," *Environment and History*, 2002, *8*:21–41; Matthew Gandy, *Concrete and Clay: Reworking Nature in New York City* (Cambridge, Mass.: MIT Press, 2002); Robert Gottlieb, *Forcing the Spring: The Transformation of the Environmental Movement* (Washington, D.C.: Island, 1993); Ellen Maura McGurty, "From NIMBY to Civil Rights: The Origins of the Environmental Justice Movement," *Environmental History*, 1997, *39*:301–323; Laura Pulido, *Environmentalism and Economic Justice: Two Chicano Struggles in the Southwest* (Tucson: Univ. Arizona Press, 1996); and Sylvia Hood Washington, *Packing Them In: An Archaeology of Environmental Racism in Chicago, 1865–1954* (New York: Lexington, 2004).

[3] David Harvey, *Justice, Nature, and the Geography of Difference* (Oxford: Blackwell, 1996).

in 1972, put Francis Bacon at the historical center of what Merchant called a "new ethic" that "sanctioned the exploitation of nature." Merchant's book also drew on Marxist traditions in the history of science, in particular the writings of Boris Hessen and Edgar Zilsel that grounded scientific ideas in particular practices of material labor and modes of production. *The Death of Nature* was a pathbreaking attempt to understand changing scientific ideas and attitudes toward the natural world within an ecological web of material, social, and economic relations, wherein the means of economic production, the exploitation of natural resources, and the social relations of society were not divorced from scientific thought. This was no modest intellectual enterprise. Merchant challenged her readers to see the roots of the world's ecological crisis in the dislocations of society and called for a radical transformation toward a more humane and free, libertarian and decentralized, mutualistic and cooperative society, views in keeping with those of the anarchist social ecologist Murray Bookchin, whom Merchant cited in the epilogue.[4] *The Death of Nature* inverted the traditional privileging and categorization of science along the axis of experiment, quantification, and control that was central to the history of science profession. In Merchant's ordering, the sciences of economy, nature, and society are measured instead by their ability to forward the struggle for justice in human society and in relationship to the natural world.

For someone like myself, interested in graduate work in the history of science and, particularly, the history of ecology, the early 1980s seemed an opportune time. A series of highly influential new books—Donald Worster's *Nature's Economy* (1977), Carolyn Merchant's *The Death of Nature* (1980), Richard White's *Land Use, Environment, and Social Change* (1980), and William Cronon's *Changes in the Land* (1983)—became the American canon of the new field of environmental history.[5] Each of these works looked to ecology as a way of studying past historical relationships between natural and human environments; yet they used the notion of ecology in quite different ways. *Nature's Economy* is a classic study in the history of ecological ideas, largely abstracted from any materialist base. *Changes in the Land* combines history with ecological science to examine the environmental transformations of colonial New England that followed European settlement and the consequences of landscape change for Native American and European peoples. *Land Use, Environment, and Social Change* similarly integrated ecology and natural history with the lives of human inhabitants to explore the complex interrelations of environmental and social change over the course of a century on two islands in Puget Sound. More than any of these works, *The Death of Nature* sought to connect the history of ecological thought with the history of ecological change. It was an ambitious goal, hindered by the histories and politics of academic disciplines and their publics. As the 1980s progressed, the possibilities for productive dialogue and exchange between the history of science and environmental history that had been opened by *The Death of Nature* began to close down.

[4] William Leiss, *The Domination of Nature* (New York: Braziller, 1972); and Merchant, *Death of Nature* (cit. n. 1), p. 164. See Helen Denham, "The Cunning of Unreason and Nature's Revolt: Max Horkheimer and William Leiss on the Domination of Nature," *Environ. and Hist.*, 1997, *3*:149–175. For a good historical overview of the Marxist literature see Robert Young, "Marxism and the History of Science," in *Companion to the History of Modern Science*, ed. Robert C. Olby *et al.* (London: Routledge, 1990), pp. 77–86. On Bookchin see Janet Biehl, ed., *The Murray Bookchin Reader* (Montreal: Cassell, 1997).

[5] Donald Worster, *Nature's Economy: The Roots of Ecology* (San Francisco: Sierra Club Books, 1977); Merchant, *Death of Nature* (cit. n. 1); Richard White, *Land Use, Environment, and Social Change: The Shaping of Island County, Washington* (Seattle: Univ. Washington Press, 1980); and William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York: Hill & Wang, 1983).

For a generation of American environmental historians, many of whom had cut their political teeth in the environmental movement of the 1960s or for whom events such as Earth Day had made a formidable impression in their early years, the decade of the 1980s was no time to disengage from the arenas of environmental activism and policy. The same year *The Death of Nature* was published, a former Hollywood gunslinger took charge of the Oval Office, and Ronald Reagan was no friend of the environment. Under Reagan's watch, the budget of the EPA was slashed by almost 60 percent, while Anne Gorsuch, dubbed "the Ice Queen" by EPA staffers, fired scientists who refused to downplay environmental data damning of industry. Her counterpart in the Department of the Interior, Secretary James Watt, saw it as his mission "to follow the Scriptures which call upon us to occupy the land until Jesus returns" and promptly eased leasing on federal lands to ranching, mining, and timber interests. Throughout the 1980s, scholarship in environmental history had a strong normative edge, both within the United States—in works such as Donald Worster's *Rivers of Empire*—and abroad—in books like Ramachandra Guha's *The Unquiet Woods*, which was prompted by efforts in India in the 1980s to revise forest policy and management along more authoritarian lines.[6] Understanding past environmental change was seen as offering a window onto present environmental issues. Merchant's own ecological history of land use and social change, built on the work of the *Annales* School and expressed in the chapter "Farm, Fen, and Forest" in *The Death of Nature*, stands to this day as a magisterial analysis of how population pressures, expanding market economies, conflicts over resources, and technological innovations markedly transformed the ecology of particular landscapes and their human inhabitants.

While *The Death of Nature* resisted "dichotomizing nature and culture as a structural dualism," it inherited and adopted a theoretical framework within the history of science that made it unavoidable to speak of nature as an object and a force apart from human society. The externalist/internalist divide, which still shaped historiographic debates in the late 1970s, reinforced this nature/culture dichotomy. And environmental politics at the time demanded it. In the late 1970s, nature was still largely unified within American environmentalism; during the 1980s and 1990s, environmental movements south of the equator and environmental justice activists would contest such claims of unity. The meanings and politics of nature looked quite different to victims of Bhopal or those laboring in maquiladoras along the border between the United States and Mexico than to members of the Sierra Club or one of the other "big ten" U.S. environmental organizations.[7] At times, *The Death of Nature* approximates a more ontologically diverse conception of nature—an arrangement, as Timothy Mitchell writes, that is "social as well as natural, technical as well as material." In this more ontologically rich view, nature is an outcome, if you will, of an ecology of relations among people, things, and forces at any given historical moment. But in the end *The Death of Nature* retreats to a position in which the nonhuman material world exists independently of a historical ecology of knowledge and social relations that

[6] Michelle Murphy, "Uncertain Exposures and the Privilege of Imperception: Activist Scientists and Race at the U.S. Environmental Protection Agency," *Osiris*, 2nd Ser., 2004, *19*:266–282; Bill Prochnau, "The Watt Controversy: Interior Secretary Watt Creates Political Stresses for Administration," *Washington Post*, 30 June 1981, p. A1; Donald Worster, *Rivers of Empire: Water, Aridity, and the Growth of the American West* (New York: Pantheon, 1986); and Ramachandra Guha, *The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya* (Oxford: Oxford Univ. Press, 1989).

[7] Merchant, *Death of Nature* (cit. n. 1), p. 43; Kim Fortun, *Advocacy after Bhopal: Environmentalism, Disaster, New Global Orders* (Chicago: Univ. Chicago Press, 2001); and Giovanna Di Chiro, "'Living Is for Everyone': Border Crossings for Community, Environment, and Health," *Osiris*, 2nd Ser., 2004, *19*:112–132.

nevertheless enables its being and action. "Social and historical conditions did not determine the specific content of the mechanical philosophy," Merchant writes, "although they helped to make plausible some presuppositions about nature and to invalidate others." Human values, beliefs, and socioeconomic systems might guide particular ideas about nature, but their relationship to the actual materiality, being, and action of nature in the world was less clear. *The Death of Nature* presents us with a materialist history of environmental change that pointed toward, but never quite embraced, an ecological history of material, cultural, and social relations through which nature became not universal, but many.[8]

While environmental history coalesced around a materialist, normative approach to past environmental change that was thoroughly engaged with public and environmental policy, the history of science profession followed a different path in the 1980s. Marxist historiography of science, integral to 1960s social movements such as Science for the People, became less fashionable as the sociology of scientific knowledge took the profession, albeit kicking and screaming, by storm. Political economy, macrosociology, and grand narratives were out. The politics of laboratories and disciplines, microsociology, and localized case studies were in. Any discussion of the nonhuman material world all but disappeared in the reduction of scientific knowledge to social interests. Consider, for example, Steven Shapin and Simon Schaffer's now-classic *Leviathan and the Air-Pump*, published in 1985. In their conclusion, the authors use the notion of space to consider the ways in which the "history of science occupies the same terrain as the history of politics." But the notion of space employed in *Leviathan and the Air-Pump* is largely metaphoric, the heterotopia of Michel Foucault rather than the sort of space Henri Lefebvre would have us consider: space as a product of social relations and material practices "lived by people with bodies and lives in their own particular urban context."[9] In the 1980s, the impulse to see the production of scientific knowledge strictly through discourse or social interests left little room for more materialist approaches. As the history of science became more engaged with the politics of its own discipline and less engaged with issues and concerns of importance to the wider polity, it is not surprising that Merchant found a more welcoming intellectual home among environmental historians, where she has put much of her intellectual energy since *The Death of Nature*. Nor is it surprising that a growing body of scholarship on the history of ecology as a scientific discipline never became central to the growing field of environmental history.[10] Without a material link between the history of ecological thought and environmental change, there has been little to connect the history of science with environmental history.

[8] Timothy Mitchell, *Rule of Experts: Egypt, Techno-Politics, Modernity* (Berkeley: Univ. California Press, 2002), p. 52; and Merchant, *Death of Nature*, pp. 195–196. Merchant did push further in the direction of an ecological history of material, culture, and social relations in her next book: Carolyn Merchant, *Ecological Revolutions: Nature, Gender, and Science in New England* (Chapel Hill: Univ. North Carolina Press, 1989).

[9] Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life* (Princeton, N.J.: Princeton Univ. Press, 1985), p. 332; and Henri Lefebvre, *The Production of Space* (Oxford: Blackwell, 1991), p. 143.

[10] Although a number of works—including Eugene Cittadino, *Nature as the Laboratory: Darwinian Plant Ecology in the German Empire, 1880–1900* (Cambridge: Cambridge Univ. Press, 1990); Joel Hagen, *An Entangled Bank: The Origins of Ecosystem Ecology* (New Brunswick, N.J.: Rutgers Univ. Press, 1992); Sharon Kingsland, *Modeling Nature: Episodes in the History of Population Ecology* (Chicago: Univ. Chicago Press, 1985); and Gregg Mitman, *The State of Nature: Ecology, Community, and American Social Thought* (Chicago: Univ. Chicago Press, 1992)—on the history of ecology appeared within a short period, the scholarly communities of environmental history and the history of ecology remained quite separate throughout the 1980s and early 1990s. This has, however, begun to change.

Directions in both the history of science and environmental history, as well as the current political climate in the United States, make today an opportune moment once again to explore productive places of exchange that *The Death of Nature* invited us to consider twenty-five years ago. Developments within science studies, in particular actor-network theory and feminist approaches to situated knowledge, as well as geographical social theory, in various strands of historical-geographical materialism, offer valuable ways of thinking about how nature is constituted—"worked up," in Donna Haraway's language—that take seriously environmental history's mandate: namely, to consider the agency of nonhuman actors. Each of these approaches points to an ecology of being and action, a relational ontology that takes seriously what the geographers Scott Kirsch and Don Mitchell call "the materiality of things in lived social relations, and the stabilization of process in form." Although actor-network theory has been criticized for its evisceration of politics and its "aversion to normative judgements," this need not be the case.[11] As Kirsch and Mitchell have shown, how social relations become ossified into things—carbon dioxide emissions, commodities, and machines, for example—that come to dominate human lives is dependent on differential flows of capital in which these very things—pharmaceutical drugs, toxins, or avian influenza—come to benefit or harm some more than others.

If the reinclusion of materiality in the history of science opens a passage point to environmental history, the cultural turn in environmental history over the last decade completes the possibility for circulation and exchange. Nature is no longer the universal actor we found in *The Death of Nature*; rather, its energy—its force—takes shape in multifaceted forms, channeled through patterns of production and consumption, realized and harnessed in hybrid landscapes at once both natural and social, contested in its meanings through relations of race, class, and gender.[12] But this does not mean that nature has vanished into the world of human forms. It is not a completely malleable force, bent fully to human domination and control. Rather, like electricity meeting resistance in a light bulb's filament and, as a result, generating heat and light, nature's resistance to human control is readily apparent wherever we turn.[13]

Far more than disciplinary politics is at stake in the return to *The Death of Nature*. Merchant's book was and remains above all an inspirational call to an ecology of justice and action. *The Death of Nature* closed with Three Mile Island, "a recent symbol," Merchant wrote, "of the earth's sickness caused by radioactive wastes, pesticides, plastics, photochemical smog, and fluorocarbons."[14] The differential impacts of such pollutants and natural forces on the earth and its inhabitants raised questions of social and environmental justice. Twenty-five years later, we are living in the fresh aftermath of more recent disasters, born of intellectual hubris and the ecology of injustice that structures human lives. In the

[11] Scott Kirsch and Don Mitchell, "The Nature of Things: Dead Labor, Nonhuman Actors, and the Persistence of Marxism," *Antipode*, 2004, *36*:687–705, on pp. 694–695; and Donna Haraway, *Modest_Witness@ Second_ Millennium.FemaleMan_Meets_OncoMouse: Feminism and Technoscience* (London: Routledge, 1997). See also John Law and John Hassard, eds., *Actor Network Theory and After* (Oxford: Oxford Univ. Press, 1999); Bruno Latour, *Pandora's Hope* (Cambridge, Mass.: Harvard Univ. Press, 1999); and Latour, *Politics of Nature: How to Bring the Sciences into Democracy* (Cambridge, Mass.: Harvard Univ. Press, 2004).

[12] For a recent review of this scholarship see Richard White, "From Wilderness to Hybrid Landscapes: The Cultural Turn in Environmental History," *Historian*, 2004, *66*:557–564.

[13] For all its problems, I still find resistance a useful way to think about nonhuman agency because it conveys a sense of material flows and forces rather than structures. For an alternative metaphor of nature–culture interactions see Anna Loewnhaupt Tsing, *Friction: An Ethnography of Global Connection* (Princeton, N.J.: Princeton Univ. Press, 2005).

[14] Merchant, *Death of Nature* (cit. n. 1), p. 295.

wake of the Indian Ocean tsunami, Hurricane Katrina, the Pakistan earthquake, and other not-so-natural disasters that expose the transnational distributions of neglect, environmental historians have been active contributors to public debate and discussion. Historians of science have been less vocal. Yet we have much to offer for understanding the historical forces that facilitated inequitable productions of vulnerability through material relations of science, economy, and the state that disproportionately expose the poor and people of color to environmental burdens in the making of regions like the pollution-ridden industrial corridor known as "Cancer Alley" in Louisiana or in the building of cities like New Orleans.

Much has been and will be said about the making of the Katrina disaster: of how a consistent belief that humans could dominate nature placed New Orleans, and particularly the poor and people of color, in harm's way. "As Hurricane Katrina demonstrated," writes the environmental historian Ari Kelman, "it's impossible to separate social and environmental issues."[15] And this is as true of New Orleans today as it was twenty, forty, sixty, or eighty years ago. Merchant's book made nature a central actor in history. Hurricanes such as Katrina, and the floods it engendered, along with pollutants and diseases, are forces that have agency in the world, manifested in different forms through different bodies, landscapes, and social relations. Let me illustrate with an example, drawn from New Orleans's past and my own recent work on asthma, of how hurricanes, pollutants, and diseases are products of complex natural and social ecologies that defy single causal explanations and simple technological solutions.

During the 1960s, the truth of America's urban ghettoes—overcrowded and decaying housing, high infant morality, crime, poverty, and disease—became visible in ways that were difficult for white, middle-class Americans to ignore. So, too, did asthma, a disease that had mysteriously begun disproportionately to afflict African Americans and Puerto Ricans living in poor urban neighborhoods. In New Orleans, an unusual annual pattern of spikes in asthma admissions to Charity Hospital, which catered to the city's urban poor, began to appear in the mid 1950s. October and November were the worst months. On some days more than two hundred patients, many under the age of thirty, streamed into the emergency room for the first time as they struggled to breathe. The New Orleans asthma zone radiated outward from Clairborne Avenue, the thriving main street of New Orleans's black community and main thoroughfare of the city's largest African-American Mardi Gras parade. Beginning in August 1958, officials from the U.S. Public Health Service and the affiliated Robert H. Taft Sanitary Engineering Laboratory in Cincinnati, Ohio, worked closely with Tulane University researchers to investigate the cause of these fall asthma outbreaks, which had become so common by the 1960s that local New Orleanians referred to the annual event as the "fifth season."

The mystery seemed to be solved in 1962, when Robert Lewis's team at Tulane University found a significant correlation between seasonal asthma attacks and calls to the city fire department reporting outbreaks of fires in nearby dumps. The New Orleans asthma zone, a back-swamp ghetto in one of the lowest-lying areas of the city, was surrounded by three of the largest city landfills. Simmie Harvey, state president of the Southern Christian Leadership Conference, an organization that has fought for the cleanup of former incinerator sites in New Orleans, recalled that in his youth these "sites loomed over the poor of our city and the smell was often sickening." Since 1909 the city had been using

[15] Ari Kelman, "In the Shadow of Disaster: Rebuilding in Harm's Way," *Nation*, 2 Jan. 2006, *282*:13–15.

a 95-acre site on Agriculture Street, less than half a mile from the residential region where the density of new asthma patients was greatest, as the major dumping ground for the city's waste. In 1948 nearby residents began to complain of offending odors. Four years later the dump closed and became a sanitary landfill. But underground fires that spewed smoke containing particulate matter and gaseous fumes from countless unidentified substances were common a decade after the landfill closed, leading local residents to nickname the dump "Dante's Inferno." In 1994 the EPA designated the area a Superfund site. It was recently submerged under Katrina's floodwaters. Although the precise allergenic substance responsible for the asthma epidemics could not be identified, the Tulane research team concluded on the basis of skin testing that a poorly combustible, silica-containing particle isolated from the plumes of "Dante's Inferno" was a likely suspect.[16]

But the fall asthma attacks did not subside as the city worked to squelch the smoldering fires. Guided by a mechanistic, reductionist mind-set that assumed that a single allergenic air pollutant was to blame for New Orleans's fifth season, scientists and public health experts would spend a decade examining grain elevators, burning dumps, and pollen loads—in vain.[17] No one, at the time, paid any attention to how the ecology of injustice in New Orleans affected the city's poor, black population.

Epidemiologists, physicians, and engineers hoped to explain New Orleans asthma on the basis of a single chemical pollutant, industrial airborne particle, or natural allergen. If there was a single cause, then there was also a single technological solution. This is what Americans had come to expect in the golden age of medicine, when wonder drugs had seemingly eliminated deadly and crippling infectious diseases such as polio, smallpox, and tuberculosis. But no magic bullet to rid the city of epidemic asthma could be found. It was a quixotic search. In reality, the reductionism of medical science and the blinders of white privilege hid from view the inequitable conditions that rendered a population vulnerable to a disease that elsewhere was less pervasive and less life threatening. Economic, environmental, and racial inequities were all at play in the ecology of New Orleans asthma. The city's major landfills spewed out poorly combustible particulate matter, which settled in the lungs of nearby residents in the poorest and least racially mixed neighborhoods. These neighborhoods also happened to be in low-lying areas near urban industrial districts.[18] Location, coupled with Jim Crow, contributed to poor-quality housing. Dilapidated, non-air-conditioned wooden homes were a common sight in the central city until the late 1960s, when inner-city urban renewal began. The people who lived in such homes had higher exposures to outdoor airborne allergens than those who could afford to insulate

[16] For the correlation see Robert Lewis, Murray M. Gilkeson, and Roy O. McCaldin, "Air Pollution and New Orleans Asthma," *Public Health Reports*, 1962, *77*:947–954. Harvey is quoted in Amanda Furness, "Officials and Activists Join Forces to Clean Up Dump Sites," *Louisiana Weekly*, 8 Oct. 2001 (www.louisianaweekly.com/weekly/news/articlegate.pl?20011008e). See also Lewis, "Epidemic Asthma in New Orleans: A Summary of Knowledge to Date," *Journal of the Louisiana State Medical Society*, 1963, *115*:300–303; Hans Weill, Morton M. Ziskind, Vincent J. Derbes, *et al.*, "Further Observations on New Orleans Asthma," *Archives of Environmental Health*, 1964, *8*:192–195; and Weill *et al.*, "Epidemic Asthma in New Orleans," *Jounal of the American Medical Association*, 1964, *190*:311–314. For a history of the Agriculture Street landfill see Louisiana Office of Public Health, *Public Health Assessment: Agriculture Street Landfill: New Orleans, Orleans Parish, Louisiana: EPA Facility ID: LAD981056997*, 2 June 1999.

[17] Hans Weill, Morton M. Ziskind, Richard C. Dickerson, and Vincent J. Derbes, "Allergenic Air Pollutants in New Orleans," *Journal of the Air Pollution Control Association*, 1964, *15*:467–471; and John Salvaggio, Lawrence Zaslow, John Greer, and John Seabur, "New Orleans Asthma, III: Semiquantitative Aerometric Pollen Sampling, 1967 and 1968," *Annals of Allergy*, 1971, *29*:305–317.

[18] Craig E. Colten, "Basin Street Blues: Drainage and Environmental Equity in New Orleans, 1890–1930," *Journal of Historical Geography*, 2002, *28*:237–257.

themselves from the city's dirty air. Nor did poor African-American patients have access to the kind of managed medical care that middle-class whites enjoyed, which rendered their asthma attacks less frequent and less deadly. Only in 1966, with the establishment of Medicaid, was it theoretically possible for indigent patients to seek the care of a private physician instead of visiting a free emergency room. Poverty, substandard housing, and poor-quality medical care combined to create a population ecologically vulnerable to the onslaught of allergens in the environment.

The noticeable decline in asthma emergency room admissions in the early 1970s, after a decade of inconclusive scientific research on the cause of New Orleans asthma, was not due to the disappearance of environmental allergens. Rather, the replacement of housing stock in the neighborhood of Charity Hospital; the creation of Medicaid, which enabled indigent asthmatics to receive private medical care; the establishment of an outpatient allergy and asthma clinic at Charity Hospital; and the availability of a new generation of asthma drugs combined to create a breathing space in the inner city more like that experienced by white, middle-class Americans, for whom asthma was a less serious disease. But the conditions that fostered a more equitable environment were short lived. During the 1970s, the programs put in place by Lyndon B. Johnson's "War on Poverty"—including Medicaid, community health-care clinics, and block development grants—were gradually dismantled. Between 1974 and 1986, children's poverty increased at an alarming rate, particularly in the inner city, where 44 percent of black children lived below the poverty line. In the 1990s, these rates of poverty declined. In 2001, they began again to rise. But in America, as the Spanish Harlem writer and activist Piri Thomas observed, "there ain't no bright sunlight to reveal the stark naked truth of garbage-lepered streets."[19]

It would take more than sunlight. It would take a hurricane and the bright lights of television cameras to reveal the ecology of injustice and the disparate spaces in which Americans live and breathe. In the current political onslaught against science and the environment in the United States, in the face of the demise of federal support for the poor and disadvantaged, and amidst the geopolitics of war and resource scarcity, Merchant's call in the epilogue to *The Death of Nature* to "restructure priorities," to "reform a capitalist system that creates profits at the expense of nature and working people," now more than ever needs to be heard.[20]

[19] Michael Katz, *The Undeserving Poor: From the War on Poverty to the War on Welfare* (New York: Pantheon, 1989) (poverty statistics); and Piri Thomas, *Down These Mean Streets* (New York: Vintage, 1974), p. xi.

[20] Merchant, *Death of Nature* (cit. n. 1), pp. 294–295.