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# Environmental History, Ecology, and Meaning

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Over the last fifteen years, Donald Worster has been the most thoughtful and stimulating of American environmental historians. His concern with big problems, the clarity of his thought and prose, and his grasp of the field make him the ideal choice for explaining the fallacy of writing history as if human beings “have not been and are not truly part of the planet.” His emphasis on the material grounding of human history is particularly timely given the current prominence of post-structuralist analysis with its potential for moving historical analysis ever further away from concern with the physical world in which human beings live.<sup>1</sup>

And yet in reading Professor Worster’s article, at least some environmental historians besides myself will get an odd feeling of displacement among familiar surroundings. Reading the article is like viewing a television interview with a family that presents itself as altogether too harmonious. If conflicts or problems are admitted, they are minor; basic disagreements are quashed. Wayward spouses, delinquent children, threatening illnesses, and mortgages in arrears are not for public view.

Such public presentations are hardly simple falsehoods, for the family member doing the speaking gets, in effect, to define the family as it ideally should be and as he or she hopes it will be. Similarly, Worster’s account of environmental history is as much a prescription as a description. And while I share most of his ambitions for the field, things are not as harmonious or simple as they seem. Rather than quarrel with his prescriptions or present an alternate version, I’d like to examine some of the underlying issues that prompt Worster’s program.

Donald Worster is, first of all, attempting to define a new historical field in a way that makes it central to the discipline as a whole. He places environmental history at the point where the natural and the cultural intersect and interact with each other. With the field defined this way, it is difficult (I hope) for most historians to force it to the periphery of historical concerns.

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<sup>1</sup> Post-structuralism refers to the work of those recent thinkers who have, in Hans Kellner’s words, “challenged the primacy and security of meaning of history, of narrative, and the idea of ‘man’ which is constructed by these practices.” At their most extreme, post-structuralists reduce history to a pure textuality in which it differs little from any other form of narrative. Hans Kellner, “Narrativity in History: Post Structuralism and Since,” *History and Theory*, 26 (Dec. 1987), 2–29.

Having defined the field, Worster outlines what might be called its methods. Here, however, under the guise of stating conventional wisdom, he is trying to create it, or rather to impose a much older construct on the field. Environmental history has a base (natural history), a structure (productive relations or modes of production), and a superstructure (culture and ideology). In his hierarchical model, he seeks to avoid reductionism and any simple material determinism. The “great challenge,” as he states it, is identifying the reciprocal relationships between the levels.

Worster’s final task, which takes up more than two-thirds of the article, is ostensibly to review “the broader themes” of environmental history, but it is really more an attempt to set its agenda. He examines only one theme—agroecology—which he deems primary, for in obtaining food humans “have been connected in the most vital, constant, and concrete way to the natural world.” Agroecology becomes a case study showing how his methodology illuminates the most “basic and revealing” of the concerns of environmental history—the production of food. The discussion, as would surprise no one familiar with Worster’s work, ends with an examination of the causes and consequences of the rise of capitalist agriculture.

Worster’s procedures are analogous to those of our family host who shows the television audience around the house and then describes a new addition the family is constructing out back. He seems to hide nothing. He displays the blueprint (his base/structure/superstructure), his scale model (agroecology); he even admits that the building site (the science of ecology) has certain problems. What the camera misses are the family arguments over the blueprint, the omission of certain critical details in the model, and the slow sinking of the foundation of the house itself.

The uninitiated will misconstrue the argument if they think Worster’s blueprint has old-fashioned, even vulgar, Marxist lines. The inspiration is really Braudelian. Worster is building for the *longue durée*, and his plan—and agroecological model—are full of the long-term conjunctures, disequilibriums, and equilibriums that mark Fernand Braudel’s work. With the always notable exception of Alfred W. Crosby, American environmental historians have usually operated on a much smaller temporal and geographical scale than Worster sketches out here. While his colleagues have thought of intellectual progress in terms of adding another bath, Don Worster is ready to build Trump Towers in the backyard.<sup>2</sup>

His model for the field differs from much current work in scale, and also because to construct it, Don Worster is urging scholars who have often written inductively (or at least pretended to) to think deductively. His model for agroecology makes sense only when we realize that we already know the critical structures, conjunctures, and disequilibriums that demand study; the most important of them is the rise of capitalism with its “radical simplification of the natural ecological order.” The creation of the capitalist mode of production becomes the key environmental process; the most influential determinant of environmental change since the last Ice Age.

<sup>2</sup> For an overview of Fernand Braudel’s concerns that enables a reader to compare them with Donald Worster’s, see Fernand Braudel, *Afterthoughts on Material Civilization and Capitalism* (Baltimore, 1977), 3–35. See Alfred W. Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900–1900* (New York, 1986).

In selecting the transformative capacity of capitalism as his central theme, Worster isolates a process of undeniable importance and power, but the theme also serves to simplify environmental analysis much as capitalist agriculture has simplified farmers' fields. Writing from within a capitalist economy with its strong instrumentalist focus, historians can easily make people in noncapitalist economies—the majority of the human race over time—similarly instrumentalist in their logic. Professor Worster writes, for example, that the “conscious purposes” of human beings in restructuring nature are “the feeding and prospering of a group of humans,” and that “sheer necessity . . . has been the mother of ecological innovation in preindustrial conditions.” But is this so? And are not feeding and prospering more problematic terms than they here appear to be? Human beings do not eat all that it is possible to eat, and they do not regard all that they eat simply as food. As Maurice Godelier has written, “the social perception of an environment consists not only of more or less exact representations of the constraints upon the functioning of technical and economic systems, but also of value judgments . . . and phantasmic beliefs. . . . Livestock is not simply meat, milk or leather, and trees are not just wood or fruit.” The creation of a precapitalist agroecosystem is as much a result of those value judgments as of the instrumental logic Worster emphasizes.<sup>3</sup>

The failure to recognize the role of value judgments and beliefs causes problems on two levels. It first of all distorts European expansion and the spread of capitalist agriculture by portraying the success of those developments as simply the triumph of more efficient instrumental logics over less efficient and more primitive instrumental logics. On a more theoretical level, it calls into question how much reciprocal influence there actually is within the complex of base/structure/superstructure. If culture is significant largely as beliefs about how best to keep stomachs full—or, under capitalism, how to keep pockets full—then culture is in danger of becoming superstructure in the old vulgar Marxist sense. It is a product of more fundamental forces.<sup>4</sup>

As significant as Karl Polanyi's work is, it tends to obscure as much as it reveals about the results of market economies' spread. It can overestimate their ability to obliterate local understandings and adjustments. In an intriguing book, *Economics as Culture*, Stephen Gudeman has emphasized the continued importance of local constructions—“a people's model is their life and history, their historical consciousness, their social construction”; such models are essential in understanding the course of environmental, social, and economic change even under capitalism.<sup>5</sup>

The cane and bluegrass example that Don Worster uses as a parable of agroecological change depends for its significance not just on the material facts of the invasion but also on the different cultural meanings domestic livestock held for Indians and for the Anglo-Americans who settled the Ohio Valley. The Algonquian peoples

<sup>3</sup> Maurice Godelier, *The Mental and the Material: Thought, Economy, and Society* (Bristol, 1986), 35.

<sup>4</sup> See Marshall Sahlins, *Culture and Practical Reason* (Chicago, 1976), esp. 126–65.

<sup>5</sup> Stephen Gudeman, *Economics as Culture: Models and Metaphors of Livelihood* (London, 1986), 26. See also Stephen Gudeman, *The Demise of a Rural Economy: From Subsistence to Capitalism in a Latin American Village* (London, 1978).

of the region readily adopted horses, pigs, and, to a lesser extent, cattle. The "plant allies" of the Europeans were thus potential allies of the Indians, too. It was not so much livestock or the ability to profit from ecological change that distinguished whites from Indians as the understanding of both the nature of a proper economy and the place of "wild" and "tame" animals within it. The Indian understanding was not "traditional," instead it developed in conjunction with the arrival of whites and the changing environment. That understanding inhibited the ability of Indians to exploit livestock as whites did. Many Indians came to identify the fate of "tame" Indians with the fate of tame livestock: Whites exploited both. That made the Shawnee Prophet's demand that the Indians kill their domestic livestock in order to save themselves comprehensible in ideological, if not economic, terms.<sup>6</sup>

Worster tries to avoid the simple determinisms that lurk within the base/structure/superstructure model, but such determinisms may be inevitable as long as such hierarchical models persist. They set up analytical distinctions that may be inappropriate to environmental history. Marshall Sahlins, in a different context, has written that "material aspects are not usefully separated from the social, as if the first were referable to the satisfaction of needs by the exploitation of nature, the second to problems of the relations between men." Worster would, I think, sympathize with the sentiment here, but his model perpetuates the distinctions.<sup>7</sup>

Environmental historians do face grave difficulties in trying to incorporate natural history, social relations, technology, and culture into unified explanations of social change. Their assertions of the reciprocal effects between social and environmental change can evoke the same kind of incredulous doubt as do statements by administrators at my university about cold fusion. Environmental historians assert amazing interactions, but there is a certain sketchiness of detail as to how they all work. There is not much reason for a skeptic to believe the larger claims. Environmental history has been vague as to how historical change and causation proceed.

The problem of causation is particularly worrisome to environmental historians because of the origins of the field. Environmental history was, as Professor Worster notes, born of a strong moral concern, and that moral concern presumed a certain kind of causality. It presumed that nature was vulnerable to human actions, and it presumed that, in time, human beings would pay the price for their own arrogance and thoughtlessness. This moral emphasis, which frankly I share, carries with it real dangers. The field has a tendency to produce cautionary tales. But without a clear demonstration of causality, a teller's cautionary tale becomes a listener's just so story.

Environmental historians once thought that they had a firm basis for their morality and causality. Historians read the science of ecology as both detailing basic natural processes and yielding certain moral verities: complexity is good, simplicity is bad; natural systems seek equilibrium and battle disruption; there is an ideal bal-

<sup>6</sup> Richard White, *The Middle Ground: Europeans, Indians, and Empires in the Pays d'en Haut, 1650-1815* (New York, forthcoming).

<sup>7</sup> Sahlins, *Culture and Practical Reason*, 205. See also Pierre Clastres, *Society against the State* (New York, 1987), 189-218.

ance in nature that, once achieved, will maintain itself. Those verities gave historians standards against which to measure and evaluate the repercussions of human action.

As Professor Worster points out, the science of ecology no longer bestows such verities. Historians thought ecology was the rock upon which they could build environmental history; it turned out to be a swamp. Ecology provides the land upon which Worster's agroecology, and the other wings and additions attached to environmental history, must sit. For although in popular speech (as in my own metaphor) ecology has been reified into nature, ecology is, in fact, only an academic discipline.

The questioning of ecological verities within the science has consequences graver than Worster admits. In modern ecology the idea of a natural climax—a community of plants and animals ideally adjusted to a given environment—has largely vanished. Along with climax, the idea of successional communities has come into doubt. A picture of constant flux replaced succession with “only different kinds and degrees of vegetational stability and instability, different kinds and rates of population change.” Nature, in the words of one ecologist, is only a “veritable shimmer of populations in space and time.”<sup>8</sup>

One of the ironies of environmental history is that historians have themselves helped erode ecological verities even as they used them to evaluate history. Historians revealed to ecologists how far back human manipulations of the environment went and how extensive they were. It became harder for scientists to think that the communities they were describing and studying were the results of natural processes alone. Ecologists themselves turned to historians to help reconstitute their science to study human social and economic processes as well as biological processes. Historians, who had relied on the scientists to provide their basic guidelines, and scientists, who saw historians helping transform their object of study, met in a sort of mutual bewilderment. Things will certainly progress beyond this—and a new and exciting scholarly hybrid may result—but so far there has been little progress.<sup>9</sup>

The erosion of ecology has certainly not eliminated historians' conviction that environmental and social change are interlinked, but it has tended to focus attention largely on the grossest examples of that linkage. Those gross examples are uniformly disasters: dust bowls, the pandemics that devastated the Western Hemisphere, the devastation of the Sahel by human use and by drought. Unable to trace the everyday consequences of environmental change induced by humans with the precision they would like, historians gravitate to disasters where the human impact is clear.<sup>10</sup>

Such efforts are useful and revealing, but they can attain the larger goals that Don Worster outlines only in part. To read much environmental history is to become convinced that only a miracle has preserved life on this planet, and that all environ-

<sup>8</sup> R. H. Whittaker cited in Edward Goldsmith, “Ecological Succession Rehabilitated,” *Ecologist*, 15 (1985), 106, which contains a defense of old-fashioned ecology, reproducing the attacks on it.

<sup>9</sup> This meeting quite literally took place at a National Science Foundation conference on Landscape History and Ecological Succession, at Duke University, Jan. 28–31, 1988.

<sup>10</sup> Donald Worster, *The Dust Bowl: The Southern Plains in the 1930s* (New York, 1979); Alfred W. Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Westport, 1972); Richard W. Franke and Barbara H. Chasin, *Seeds of Famine: Ecological Destruction and the Development Dilemma in the West African Sahel* (Montclair, 1980).

mental change has been for the worse. Presumably more has been involved in this history than miracles and luck, and evaluating change as for the worse implies some uniform standard of measurement. Environmental history needs a broader account of the processes that have maintained life and culture, and a clearer description of the standards by which we should evaluate change. It needs to insist on the grounding of human life and history in the larger life of the planet, without, however, losing sight of the role of meaning in human actions and ignoring the real challenges that post-structuralist theory presents.

Rather than hierarchical models with their implicit emphasis on a structure that somehow channels and determines transient events, we perhaps need something closer to Anthony Giddens's concept of *structuration*. As a sociologist, Giddens is concerned with the complex "reproduction of social practices," and his stress on the patterning of social systems in time and space (a concern he shares with Braudel) has a historical and geographical bent missing from most social theory. A focus on the problems of change and replication would create a historical approach more in tune with current trends in ecology. By examining replication and change in historical environments—rather than departures from some stable environmental ideal—historians would parallel ecologists' attempts to discover "different kinds and degrees of vegetational stability and instability, different kinds and rates of population change." By drawing historians' attention to the interplay of ideational and material elements, analysis of such replication would uncover the material consequences of social and economic practices while rejecting the functionalism and materialism that seem always to lie latent in the concerns of environmental history. Historians would still lack the overarching standards by which we should judge change, but it is a pipe dream that we will find such standards in either nature or history.<sup>11</sup>

<sup>11</sup> Anthony Giddens, *Central Problems in Social Theory: Action, Structure, and Contradiction in Social Analysis* (Berkeley, 1979); Anthony Giddens, *A Contemporary Critique of Historical Materialism* (Berkeley, 1981).