

# Does Nature Have Historical Agency? World History, Environmental History, and How Historians Can Help Save the Planet\*

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THE QUESTION I AM POSING HERE arises from an exchange I had with a fellow presenter at a conference called, “Interactions: Regional Studies, Global Processes, and Historical Analysis,” sponsored by the American Historical Association in Washington, DC in March 2001. The presenter in question was writing a book on the global history of cotton, which he spoke about at the conference. I suggested in the response period after his presentation that in applying a world systems approach to the economic history of this resource, he had neglected to acknowledge the fact that humans were not solely responsible for the spread of this particular plant to areas beyond its native territory. Cotton itself was certainly a major actor in this story, since it either flourished or didn’t and in doing so affected the fortunes of humans who had invested their money and energy in cultivating it. After all, he was calling his story “a history of cotton,” and not—as he perhaps should have, given his humanist focus—“a history of human attempts to manipulate cotton growth.”

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The presenter also failed to convey the sense that this story is not merely about how the successes of a particular plant species have *benefited* the mammal known as homo sapiens. Cotton plants have also been direct *competitors* with humans for vital resources such as water, especially in highly arid places such as Uzbekistan and Turkmenistan, where, it should be confessed, in recent decades cotton has been winning the competition to the severe detriment of humans.<sup>1</sup> Within the context of industrial agriculture, cotton also competes with humans for things like petroleum products and synthetic chemicals—not that I personally believe that consuming these particular “junk food” items is particularly healthy for either species.

Nor was cotton the only significant non-human actor in this particular story. Soils play an active role, since they either foster the cotton plant’s growth or hinder it. The central role of water has already been mentioned. Other plants and animals compete for the soil and water resources cotton needs to flourish. But when I tried to point all this out to the presenter, he merely replied with a chuckle that was at once incredulous and dismissive, “Do you mean to endow cotton with historical agency?” While the audience chuckled along, I thought for a moment, then responded to his challenge. “Yes,” I said, “I do. I believe that cotton has historical agency.” But why does this matter?

### **World History and Environmental History**

The emerging sub-field of world history is all about connections and interactions. It challenges the received treatments of history which have focused on specific regions and civilizations as if they had been discrete realities unto themselves, and reminds us that nothing happens in a vacuum. But to date world historians have not taken this approach far enough, since their work continues to focus almost exclusively on interactions and connections between *humans*. We should remind ourselves that humans interact not only with each other, but in all times, places and contexts with the non-human world as well. All human actions take place within the context of ecosystems, and are affected by them in ways that differ enormously over time and space. To neglect this reality is as grave an omission as the kind which world historians have been attempting to correct among regionalists.

The global history of cotton is only one example among many. Turning to the human economy of another kind of textile made from animal rather than plant fiber—namely wool—we are forced to consider another species of non-human actor: sheep. Sheep have a will, they consume water and plants, they affect the ecosystems which they and humans

share; in short they are as active agents as cotton if not more so. Any history of the economy of wool production is not telling the full story if it does not tell the story of sheep as well. But it must also tell the story of the water and the plants that the sheep consume, the land they degrade, the diseases they acquire and pass on from other species, and so on. This project of interconnections on which world historians have embarked us is, it turns out, endless! But to circumscribe our efforts merely for the sake of convenience, manageability, or species bias would be dishonest.

### **A Remedy for Fragmented Knowledge**

Does the call for integrating environmental history with world history have an urgency beyond mere scholarly thoroughness? I will argue that it does. The theme of interactions, which lies at the heart of world history, offers a corrective to the fragmented approach of the knowledge system which has become dominant in the modern age.<sup>2</sup> The paradigm of disconnection, which traces back to the putative spirit-matter split has informed Western thought since Classical times, has been a two-sided coin. It may be that a fragmented worldview was what facilitated the increasing specialization that has brought us the astonishing advances of modern science and technology. But that same fragmented approach, what Alfred North Whitehead called “the fatal disconnection of subjects,”<sup>3</sup> is what prevents us today from perceiving how those same “advances” in science and technology have brought us, via the industrial society they have made possible, to the brink of global ecological collapse through the steady erosion of the complex systems and networks which make life itself possible.

Of course, if ecosystems collapse, they will take social systems with them. This harsh reality makes possible the bold claim that the environmental crisis is the playing field on which all other issues meet. Fragmented thinking enables us falsely to perceive human activities as somehow disembedded from any physical context. So world history, if done properly—that is, expanding the theme of interactions to include *all* actors, not just human ones—is not only good scholarship, it may be vital to saving the planet!

David Orr, director of the environmental studies program at Oberlin College, has written extensively on how the dominant discipline-based knowledge model exacerbates a fragmented understanding of the world we live in and obscures vital connections. Even as increasing numbers of post-modern scholars critique modernist thinking as obsolete and even dangerous, the academy of which they are a part continues to function within a structure that is the product of modernism, creating a vicious

cycle that can only be broken through complete structural reform. Orr points out:

Nearly all discussions about the transition to a sustainable society have to do with what governments, corporations, and individuals must do. But one thing that these have in common are people who were educated in public schools, colleges, and universities. We may infer from the mismanagement of the environment throughout the [twentieth] century that most emerged from their association with these various educational institutions as ecological illiterates, with little knowledge of how their subsequent actions would disrupt the earth.<sup>4</sup>

Orr goes on to observe that “Education in the modern world was designed to further the conquest of nature and the industrialization of the planet. It tended to produce unbalanced, uni-dimensional people tailored to fit the modern economy. Postmodern education must have a different agenda, one designed to heal, connect, liberate, empower, create, and celebrate. Postmodern education must be life-centered.”<sup>5</sup>

Arguing that “all education is environmental education,”<sup>6</sup> Orr has called for a complete revision of the academic curriculum, pointing out that no discipline or topic of inquiry exists as a domain unto itself, despite the fact we generally treat them as if they did. Economics—which habitually “externalizes” anything resembling a real-life context that could complicate its theoretical models—is probably the worst discipline in this regard, but others are guilty of similar practices, history included. As one historian has recently noted, “For the vast majority of the profession, nature is little more than a pretty scene or, at most, a preface to the more important social and political story that is about to unfold.”<sup>7</sup>

Only recently have a small number of historians begun any serious attempt to integrate narratives of human history into ecological contexts. In 1991 Clive Ponting published a landmark work entitled *A Green History of the World*.<sup>8</sup> His subtitle, “The Environment and the Collapse of Great Civilizations,” should serve as a warning to anyone who takes pride or comfort in the unique superpower status of the contemporary United States, especially given the environmental hubris that often accompanies feelings of American invincibility. Sing C. Chew’s more recent book, *World Ecological Degradation: Accumulation, Urbanization, and Deforestation 3000 BC-AD 2000*, takes a similar approach.<sup>9</sup> Chew makes the historical generalization that

In most cases, the relations of Culture with Nature have been exploitative, engendered primarily to meet materialistic requirements of hierarchical systems of social organizations.... *What this means is that the history of civilization*

*tions, kingdoms, empires, and states is also the history of ecological degradation and crisis.* Such a historical trajectory of human “macro parasitic” activity has occurred at the system-wide structural level for at least the last five thousand years. Viewed from this long-term perspective, our present relationship with Nature has not changed significantly over time.<sup>10</sup>

While, like most generalizations, Chew’s can be subject to numerous objections (for example, at least some pre-industrial cultures apparently lived in ecological balance for hundreds or even thousands of years—a point Chew acknowledges), his sobering overall assessment can provide a much-needed wake-up call to the importance of acknowledging the ecological constraints on human activities.

### **Looking at West and Central Asia**

The case of Mesopotamia springs easily to mind when one thinks of environmental degradation as a primary cause of civilizational decline. The first major type of human intervention in natural processes, agriculture, arose there some ten thousand years ago, and the dramatic rise and fall of human fortunes it made possible set a pattern that would be repeated across the globe. The reckoning was surely slow in coming, taking thousands of years, but in fact evidence from central Jordan indicates that within a mere millennium of the first emergence of settled communities, “villages were being abandoned as soil erosion caused by deforestation resulted in a badly damaged landscape, declining crop yields and eventually inability to grow enough food.”<sup>11</sup> And this was good four thousand years *before* the rise of Sumeria!

The ecosystems of West Asia and the Mediterranean have always been fragile ones, and humans wrought permanent damage on them from early times. The famous cedars of Lebanon were long ago reduced to a mere token remnant of their former glory, and the great men of Athens in its Golden Age were already bemoaning the stripping of Attica, leaving it in Plato’s words “like the skeleton of a sick man.”<sup>12</sup> The dye industry of ancient Tyre caused both water and air pollution. Mesopotamia has not recovered from the damage caused by irrigation thousands of years ago. The environmental history of this region illustrates vividly “the point that all human interventions tend to degrade ecosystems and show how easy it is to tip the balance towards destruction when the agricultural system is highly artificial, natural conditions are very difficult and the pressures for increased output are relentless.”<sup>13</sup>

Only in Egypt did humans develop a system of agriculture which, for the most part, accommodated itself to natural conditions rather than manipulating them. The result was an agriculture of a stability unrivaled

anywhere in the world, at least for several thousand years prior to the nineteenth century. True, variations in flooding patterns often caused acute disasters for Egyptians, but overall the traditional system was remarkably sustainable.<sup>14</sup> However, the dramatic change in human relations with the Nile following the construction of the Aswan High Dam in the 1950s has brought on ecological catastrophe unprecedented in the long history of this relationship, as its retention of silt has destroyed the formerly self-renewing fertility of the Nile delta. Egypt, historically a net exporter of food, has become precariously dependent in food imports. The replacement of a sustainable agriculture working in harmony with natural cycles by an expensive industrial alternative requiring massive chemical and financial inputs may have benefited small numbers among the elite, but the majority of Egyptians are now more impoverished, disempowered, and dependent than ever before. Those seeking to understand the contemporary appeal of the Muslim Brothers and other such politically significant radical groups would do well to take the recent environmental history of the Nile valley into consideration.

The Silk Road offers further dramatic examples of how interactions have not only shaped and defined human societies but also human relations with the non-human world. My own short book, *Religions of the Silk Road*, which I wrote in 1998, fails to take due notice of this important aspect of the story.<sup>15</sup> If I were to write that book now, I would write it with substantially more attention to the ecological dimension. David Christian's excellent and more in-depth volume, *A History of Russia, Central Asia and Mongolia*, does just this, as did Joseph Fletcher in some of his earlier work.<sup>16</sup>

The history of Inner Asia is very much a history of human relationships with a very harsh and demanding natural environment. The dramatic climatic variations of the steppe were most likely an important factor in early human migrations as, of course, they continue to be, and, with possible major future changes due to global warming, threaten to be even more so in the near future. Once humans came to inhabit the Inner Asian steppes, the extreme climate was bound to induce them from time to time to pick up and move. And, in the absence of maps, humans were mostly constrained in their direction of movement by environmental factors. Specifically, they would be most likely to move along the corridors of ecological transition where the steppe ran up against mountain ranges, for in such an arid climate it was only there that humans could be assured of a reliable source of water through mountain runoff.

It was also on the steppe that humans found themselves living in proximity to large grazing animals, one species of which, the horse, it would eventually occur to these humans to hitch up and domesticate.

This would greatly facilitate the movement and migrations to which that same steppe climate would periodically induce them. Thus was the Silk Road born, and the Inner Asian steppe peoples thrust into their hugely important role in history by means of interactions with the steppe climate and the other animal species that shared it with them.

Intercultural contacts have always included trade. For the nomads of the steppes, the possibility of trade with other groups offered a positive incentive to movement, complementing the negative incentives posed by climate change. And here again, non-human elements are involved in the story. The transmission of metallurgy and transportation technology from the Caucasus to China by Central Asians in ancient times is also part of the history of mining, resource depletion, and air pollution. Iron and jade occurred not everywhere, but, like horses, in locations that privileged Central Asian traders.

As these exceptionally mobilized (though their emerging interactions with horses) peoples came into contact with other human groups, they became the natural mediators and transmitters between cultures. It can be no accident that the Sogdians, who emerge in history as the major human actors in Central Asia some two and a half millennia ago, play the leading role in carrying the universal world religions—Buddhism, Christianity, Manichaeism, and Islam—from west to east along this same ecologically-determined corridor across the vast Eurasian continent.<sup>17</sup>

In short, the Silk Road paradigm is the direct ancestor to the contemporary phenomenon of globalization. As in pre-modern times, the spread of religion and culture is inextricable today from the expansion of trade networks. To do business effectively on the Silk Road fifteen hundred years ago, one may not have been forced to be a Buddhist, but it was certainly a great advantage, since it established a common connection between oneself and one's business partners elsewhere along the network. Five centuries ago the same was true of Islam.

### A New World Faith

The pattern continues, even if few among us today are able to perceive it. We are currently experiencing the greatest wave of mass conversion to any faith system known to history, that of market capitalism, or “the Religion of the Market,” as philosopher David Loy terms it.<sup>18</sup> While many would balk at categorizing this worldview as a “religion,” it is indeed a system based on absolute, unquestioned faith in numerous unproven and perhaps unprovable assumptions, such as the idea that growth for its own sake is good (or that, in a finite system, it is even possible), that benefits for the wealthy will somehow miraculously trickle

down to the poor (in fact the rich-poor divide is widening, not shrinking), that pricing mechanisms of the market can adequately or accurately measure value (they can't), and so on.

As theologian Jay McDaniel points out, the new dominant world religion of free market economics and consumerism possesses the complete ecclesiastical apparatus: a priesthood (the economists), missionaries (the advertising industry) and a Church (the shopping mall).<sup>19</sup> It possesses an ethical system (albeit an extremely simplistic one) in which the highest virtue is to shop. The faithful are known as "consumers," an insultingly trivializing identification which, strangely, few people today seem to object to having applied to them. The long and the short of it is, that to play the game of globalization today, one has to become a convert to this religion of consumption and uncontrolled, cancer-like growth. Otherwise one is condemned to the marginal status of an outsider and, in the United States at least, runs the danger of being seen as unpatriotic.

Happily this is not the only human vision surviving today, and, as historians well know, nothing in history is inevitable. The dominant religion of the day is based on certain core fallacies which its followers fail to perceive only because a fragmented worldview allows them to see but one dimension of a complex reality. This is where world history can help. By following the principle of reintegration, world historians teach us to transcend our fragmented ways of knowing. Once these blinders are shed, people will see the flaws in the dominant paradigm. We cannot have unlimited growth on a planet of limited resources. We cannot throw anything away, because on an ever-shrinking planet there is no such place as "away." We can never "do only one thing," because no action occurs in isolation, and containment is an impossibility. History's vast litany of unintended consequences is no series of mishaps—if anything, they verge more on constituting the rule. As chaos theory tells us, tiny gestures (a butterfly flapping its wings) can have far-flung and unpredictable effects (a tropical storm halfway around the world), and in fact, they may be more likely to have such effects than not.

This brings us back to the Sogdian Buddhists of the Silk Road from fifteen centuries ago. A significant component of the Buddha's teaching which these Central Asians conveyed from India to China was the doctrine of interconnectedness. A related idea was that of "no-self." According to Buddhist teaching, nothing exists as a discrete entity, but only as a process defined by its relations and interactions with everything around it (the environment!). World historians know this; there is no history of France which can be isolated and distilled into an essential form, only historical processes of interactions between the French, the English, the Germans, and to this I would add the waters, the soils, the flora and fauna, and the weather

of northern Europe. The so-called “New Physicists,” such as Ilya Prigogine and Fritjof Capra, know this as well, and have rejected the atomistic model of Newton’s universe in favor of a relational one in which the search for essential “building blocks” must be abandoned.<sup>20</sup>

The Buddhists of the Silk Road knew what physicists, deep ecologists, and world historians know today, and what the world today desperately needs to understand: that we are all connected to each other and to the world in which we live, are shaped and formed by each other, and dependent upon each other for our survival.

### **Environmental Degradation and Social Justice in India**

For case studies on the topic of human survival one could do no better than India. The ecosystems of the Indian subcontinent today are among the most severely degraded in the planet. And yet, whether predictably or paradoxically, India is home to what may well be the most advanced and effective environmentalist movement in the developing world. The most famous such movement is the Chipko, or “tree-hugger,” movement which began in the 1970s. Although Chipko is most often characterized as an environmentalist movement, as a feminist movement, or as an ecofeminist movement, the picture that emerges from Ramachandra Guha’s thoughtful and well-written study, *The Unquiet Woods*, is rather of a grassroots movement aimed mainly at subsistence-level survival.<sup>21</sup> The more recent mass protests by Indian farmers against the intrusions of biotechnology and attempts by transnational corporations to patent indigenous knowledge can be seen in the same light.<sup>22</sup>

Given that biotechnology is being heralded by its advocates today as promising “a second Green Revolution,” it would be worthwhile to consider the differing assessments of what the effects of the first Green Revolution have been. Vandana Shiva, for example, largely dismisses as socially and ecologically disastrous the transformation of traditional Indian agriculture to industrial models imported from the West from the 1960s onward, whereas Himmat Singh is among those who continue to champion it as the best hope for feeding India’s increasing population.<sup>23</sup> Controversies surrounding the recent World Summit on Sustainable Development in Johannesburg, South Africa, at which advocates for basic subsistence rights claimed to have been marginalized by corporations pushing their own agendas (including the globalization of biotechnology and the privatization of water, among other things), highlight how relevant the histories of these social-environmental movements are for understanding current development issues.

### **Ecological Dimensions to Studying the Contemporary Middle East**

In looking at the contemporary Middle East, our fascination with the region's ongoing political traumas—which are of undeniable importance—usually obscures any concern for the extreme and worsening environmental problems present there. Though most Mideast experts are at least aware of water issues, few seem genuinely to understand or question the implications which the continued application of industrial models of development have for water-scarce regions. In short, the kind of European and American-derived one-size-fits-all industrial model that is being applied everywhere in the world today takes little or no account of particular local environmental constraints, such as water availability. This model transforms water and soil, among other things, from self-renewing resources to single-use ones which are literally mined until they are depleted forever.

While the Gulf states' European savings accounts may enable them to go on living comfortably once their petroleum is all used up, the same can hardly be said for Israelis and Palestinians, rich or poor, once the Jordan aquifer—the indiscriminate mining of which is what enabled Israel to “make the desert bloom”—is pumped dry. Relying on water imports has not worked for the bone-dry villages of Gujarat and Maharashtra in India (victims of the Green Revolution) and one may doubt whether it will be satisfactory for the mushrooming population of the Abrahamic Holy Land either.

The point to be made here is that the human drama taking place between Israelis and Palestinians which has us collectively riveted to the news reports has a biological-geophysical context that is generally overlooked. This context is not merely the human-attributed sacredness of the land itself, but even more importantly, the fact that Israel-Palestine is an ecosystem, a complex natural life-support network in which all human lives, Israeli and Palestinian alike, are inextricably intertwined not just with each other but with the non-human natural world in which all of their lives are embedded and which makes their continued existence possible. This theme is prominent in Alon Tal's comprehensive new work, *Pollution in a Promised Land: An Environmental History of Israel*, a book that anyone considering writing a national environmental history would be well advised to consider as a model.<sup>24</sup>

### **Emerging Models of World Environmental History**

There have been scattered attempts over the past few decades to incorporate human-non-human interactions into world history. The works

of Clive Ponting and Sing Chew have already been mentioned. Somewhat earlier, David Rindos, in his 1984 book *The Origins of Agriculture*, applies what he calls a “co-evolutionary perspective” to the development of humans and domesticated plant species.<sup>25</sup> Michael Pollan echoes this approach in his more recent *The Botany of Desire: A Plant’s-Eye View of the World*.<sup>26</sup> William McNeill’s *Plagues and Peoples* is a fascinating study of the role of disease in human history (what a relevant additional chapter HIV would make—there’s an historical agent for you!), and Alfred Crosby’s *Ecological Imperialism* highlights the environmental changes which result when humans and other species hitch rides together around the globe.<sup>27</sup>

Jared Diamond’s bestselling *Guns, Germs and Steel* proposed a sort of environmental determinism in which, for example, animals that refused to be domesticated, like zebras in Africa, hindered their human neighbors from developing in ways that horses in Central Asia encouraged.<sup>28</sup> Popular journalist Stephen Budiansky had already gone even further in his own book, *The Covenant of the Wild*, which argued that animals “chose” domestication.<sup>29</sup> J. Donald Hughes’ recent volume, *The Environmental History of the World: Humankind’s Changing Role in the Community of Life*, though only half the length of Ponting’s very readable survey, is more rigorously documented and somewhat more methodologically sophisticated.<sup>30</sup> Hughes’ introductory chapter, in particular, lays out the scholarly project of world environmental history very articulately.

Two other recent works, John McNeill’s *Something New Under the Sun* and Robert Marks’ *The Origins of the Modern World: A Global and Ecological Narrative*, are similar in spirit to the aforementioned surveys, if less sweeping in scope. McNeill emphasizes the interplay between social and environmental changes throughout the twentieth century, with special reference to the particular (and transient) nature of resource availability in the contemporary period.<sup>31</sup> Marks gives frequent mention to the role played by nature in the emergence of the world situation we are living in today. He points out, for example, that explanations of why the industrial revolution occurred mainly in England have tended to use entirely human-centered approaches, such as Karl Marx’s view that it was due to the exploitation of human labor or Max Weber’s that it was the Protestant work ethic. Marks reiterates the very simple point (made earlier by others) that England happened to be sitting on huge fields of coal that it could easily access and use to fuel its industry; whereas China and Holland, without this gift of nature, were unable to procure the coal they needed and their economies shrank as a result.<sup>32</sup>

So far, however, such attempts at integrating world history and environmental history are rare. Environmental historians, in their own way,

have been as lax as world historians in piecing together the big picture. Studies of environmental history have tended to be local in focus, and most have been of “neo-Europes” such as the United states and Canada, Argentina, South Africa, Australia, or New Zealand. They have been episodic, rather than integrative treatments. The environmental history of India has been insightfully studied both by Indians such as Madhav Gadgil and Ramachandra Guha and by non-Indians such as Richard Tucker. In a 1983 volume edited by Tucker and John Richards the issue of deforestation is placed in a global context.<sup>33</sup> The effects of European and American imperialism on tropical environments have been explored in recent books by Tucker and by Richard H. Grove.<sup>34</sup>

These are all specialized studies not generally suitable for undergraduate surveys, however, and as J. Donald Hughes notes, to date “only a few world history textbooks used in higher education in the United States do anything more than nod in the direction of environmental history, and many still ignore the subject.”<sup>35</sup> Ted Steinberg observes that “For most textbook writers, environment means politics... There tends to be very little, if any treatment of the roles played by climate change, deforestation, soil fertility, and plants and animals in the past. How [people] went about feeding themselves and treated human and animal waste barely rates a mention, and yet it remains one of the fundamental aspects of human existence.”<sup>36</sup>

### **The Environmental Crisis in Historical Context**

What lessons does history have for us in assessing and meeting the present global environmental crisis? Some are fairly obvious. As Chateaubriand noted, there is a marked historical pattern whereby “forests precede civilization, and deserts follow.” Our planet is everywhere “littered with ruins that testify to the fallibility of our past judgements and foresight.”<sup>37</sup> Historians need to stand up and challenge the technological optimists of today who blithely assert that humans have always triumphed over adversity in the past and will therefore rise to the challenges of our present and future. Historians are well positioned to note that the faith of French Enlightenment thinkers in the power of reason to solve problems, which laid the groundwork for today’s optimistic dismissals of impending catastrophe, ultimately culminated in the “bloody excesses of the French Revolution,”<sup>38</sup> not in a rationalist’s utopia.

Climate change may well turn out to be *the* historical event of our times, which future historians may see as the matrix within which all other historical events of our era unfold.

Climate changes have occurred frequently in the past, and are sometimes included as components of mainstream historical narratives, such as the so-called “little ice age” which helped cause the “great famine” of 1317-1321 and may have pushed the Nordic colony on Greenland to its unglorious end. But if the predictions of today’s leading scientists throughout the world are right, the climatic changes in store for us over the next century will make the exploding of Santorini and Krakatoa or the salting up of Mesopotamia and the Sonoran desert seem mild by comparison. Shouldn’t historians today be doing more to emphasize the implications of those theories which suggest that the downfalls of many or all of history’s more notable civilizations—the Minoan, the Mesopotamian, the Mayan, the Indus Valley, to say nothing of smaller ones like that of Easter Island—were precipitated not mainly by war or disease or social injustice or any of the other popular topics, but first and foremost by dramatic environmental events? If climate change isn’t an agent for historical events, I don’t know what is!

Of course there is a difference now, since the overwhelming majority of specialists concur that the present global warming trend is due largely to human activities. But even this is a phenomenon consisting of complex interactions. Cars and factories produce greenhouse gases, but so do flatulent cows, which in turn have been overbred by humans. And if within the superorganism of the earth’s biosphere—a model atmospheric scientist James Lovelock calls the Gaia theory—humans are acting as a virus, global warming may simply be the earth’s way of seeking to restore its own health balance, as our own bodies do with fevers.<sup>39</sup>

In the long-term global warming will probably not be fatal to the planet or even to life in general, but it will almost certainly prove extremely hard on our species and could ultimately lead to our extinction. At the very least we may be headed for another “dark age,” and in that light it may be worth considering the decline of human civilizations in a more positive ecological light. As Chew suggests, “Ecocentrically speaking, dark ages should be appreciated as periods for the restoration of the ecological balances that have been disrupted by centuries of intensive human exploitation of Nature.”<sup>40</sup> How’s that for revisionist history?

### **Humans Alone Have Agency—Says Who?**

The first two senior historians with whom I shared an early draft of this paper agreed on one point: they both urged me to leave the issue of agency out of it altogether. As I struggled with this discouraging feedback, the serendipitous appearance of Ted Steinberg’s essay, “Down to Earth: Nature, Agency, and Power in History,” in the August pages of the

*American Historical Review*<sup>41</sup> came as a breath of reaffirmation, just as the clamorous response to it on the journal's website contextualized my own experience. My audience at the "Interactions" conference in 2001 seemed as stupefied by my position on agency as the cotton historian was—they were clearly on his side. But having had two years to think about it, I am more convinced than ever that the prevailing notions of historical agency need to be challenged, if for no other reason than that they seem to be held more instinctively than rationally.

Responding to Steinberg's article, for example, William Sewell contends that agency "implies consciousness, intention, and judgment," and that it is therefore "limited exclusively to humans."<sup>42</sup> I am not sure that I accept the first component of Sewell's assertion, and I'm sure I don't accept the second, though I can't prove Sewell wrong. His instincts tell him one thing, while mine tell me another. I have not yet encountered any argument able to establish the validity of either position, and I doubt that one can be found. So instinct it is, for the time being at least.

Nevertheless, Michael Pollan's remarks about plants could be applied to our perspectives on all non-human life:

Plants are so unlike people that it's very difficult for us to appreciate fully their complexity and sophistication. Yet plants have been evolving much, much longer than we have, have been inventing new strategies for survival and perfecting their designs for so long that to say that one of us is the more "advanced" really depends on how you define that term, and what "advances" you value. Naturally we value abilities such as consciousness, toolmaking, and language, if only because these have been the destinations of our own evolutionary journey thus far. Plants have traveled all that distance and then some—they've just traveled in a different direction.<sup>43</sup>

Attempting to discuss the possibility of non-human agency exacerbates the already complex historical arguments over agency and power among humans. Historians tend to tie agency to will, and there are disagreements over whether human groups can have a "collective will" or whether that is something limited to individuals.<sup>44</sup> What about a herd of sheep?

But maybe the very assumption that will should be accepted as a defining feature of agency is misguided. As Pollan points out, "Evolution doesn't depend on will to work; it is, almost by definition, an unconscious, unwilling process." I also agree with Pollan that "we're prone to overestimate our own agency in nature [since] many of the activities humans like to think they undertook for their own good purposes...are mere contingencies as far as nature is concerned."<sup>45</sup>

It is worth noting in this regard that some writers today even question whether humans have “will” as we normally understand it. Psychologist Susan Blackmore, for example, suggests that beliefs, habits, and preferences we usually consider to be our own are really just amalgamations of what she calls “memes,” passed around our culture like viruses.<sup>46</sup> In another recent work, Harvard psychologist Daniel M. Wegner cites neurological studies in which human actions are shown to precede the conscious brain signals associated with them, blurring the line between choice and instinct.<sup>47</sup> If nothing else, this possibility ought to make us less automatically dismissive of “instincts” as somehow inferior to conscious reasoning, if indeed such a thing truly exists.

I do not feel personally able to take a position on this difficult and humbling question, nor do I wish to get bogged down in irresolvable discussions about whether cotton has “ambition” or whether the will of sheep is anything like the “free” will that preoccupies philosophers and theologians. Nor do I wish to be seen as simply an advocate of environmental determinism, although I share environmental historian Donald Worster’s view that the unexamined cultural determinism which underlies mainstream historiography is just as problematic.<sup>48</sup>

I will suggest, however, that overall it is history’s “unintended consequences” that have been the primary sources for historical change, so the question of willed versus unwilled actions may be of diminished importance, especially if we expand our sense of what defines “consequences.” In the end I am less concerned with elevating non-human actors on the historical stage than I am with advocating the view that humans occupy a broader (and more crowded) stage than is commonly considered. Feminist and subaltern critics have made great strides in enlarging our notions of historical dynamics, and I believe it is important to allow environmentalist critiques to contribute to this process.

A friend of mine who has worked for years in the animals rights movement is often challenged by statements like, “Why are you bothering with this? Animals don’t have souls.” His typical response is to say, “I agree with you—I don’t believe animals have souls. But then I don’t believe humans do either.” Borrowing somewhat loosely from this sentiment, I would argue that whether or not humans have characteristics which absolutely distinguish them from other species should not be the determining factor in whether we accord something an active role in history. Our arbitrary valuing does not alter reality—in this case the reality that many of our most significant historical interactions have been and continue to be with non-humans—just as the blindness of earlier generations of historians to the significance of women and underclasses did not alter the basic reality of those groups’ historical (and non-passive) existence.

### **The Ecological Classroom**

The appropriate class setting for environmental education, broadly speaking, is the world. The systems in which we are embedded surround us everywhere, every moment of our lives, though by and large we are oblivious to them. Yet even within the institutional walls of a paved-over city, that mold in the corner, a cracked foundation, even the dust on the desks, can speak to us if we look and listen, reminding us that nature is changing and reclaiming whatever we build, however slowly. Nature is infinitely patient, for unlike us, it has all the time in the world. If we spend our lives treating nature as an adversary to be overcome, we may win occasional battles, even spectacular ones, but nature will win in the end. To be on the winning side, we must respect nature, not scorn it, work with it and not try to overcome it. This lesson is everywhere if we open our eyes to see.

I know a professor who places a lit candle and a rock upon the podium before he lectures, reminders of the basic elements of which we are all comprised. Many teachers hold class outdoors occasionally, but why stop at merely enjoying the weather? Instead of simply brushing that ant off one's pant leg without a thought, contemplate, discuss, follow its activities. Ants, our academic colleagues, whose knowledge of soil chemistry exceeds ours, thrive within the university! How often do we consider the unwelcome but ineluctable ecological fact that while life on earth could survive just fine without humans (indeed it would no doubt flourish in our absence), without ants the entire foundation would crumble? In looking at the history of our own institution, to what extent was the soil-building activity of ants and earthworms disrupted by the construction of this campus? Watercourses diverted? Animal habitat altered or destroyed?

Let the birdsong take our attention up to the trees which clean the air we breathe. How many others were cut down to make way for these buildings, and how much cleaner was the air before this happened? Is the greenery we see about us now native or invasive? Is the landscaping healthy and self-sustaining, or artificially maintained through regular dousing in poisons? Once we begin to sensitize ourselves to the history of environmental changes even within the range of our immediate senses, it will begin to seem more normal to take note of them in remote contexts of historical study as well, even abnormal not to do so. A whole array of additional historical questions will become part of our general repertoire, and we will not feel any study complete until they have been answered.

Of course, there is the problem of textbooks. There are signs that some writers of world history texts are revising their works to include environmental history in future editions. Hopefully, soon all of them will. In the

meantime, teachers of world history might consider assigning books like Chew's and Ponting's, discussed above, which are concise and readable, as supplementary texts. For students who can be enticed into reading newspapers, it may be noted that one increasingly finds news stories about environmental change even on the front page. It is often interesting to note how unsophisticated many of these reports are, and how little they manage to situate the story within broader contexts of geography and history. At the very least, one can bring questions about environmental change into classroom discussions, even to note their omission in the texts being read.

### **Revising and Redefining the Curriculum**

An advocate of the emerging world history approach has observed that "Until recently historians have been like the drunk under a street light trying to find his lost car keys: when asked by the police officer why he was looking there, he said 'Because this is where the light is.'"<sup>49</sup> In other words, if we limit ourselves to the kinds of inquiry that are easiest for us or that shine most brightly within our particular cultural paradigm, we are likely to miss something, perhaps even something big.

Environmental history should teach us to broaden our perspective not only within our discipline, but beyond it. We will find ourselves in conversation with botanists and zoologists, geologists and meteorologists, geographers and anthropologists, and many others. Many historians will protest that they scarcely have adequate time to read *within* their discipline, much less venture into other fields. This is a reasonable concern. Perhaps it would help if the profession itself did more to encourage interdisciplinary research, to reward the broadening of horizons rather than punish it as often now seems to be the case. In other words, administrators, journal editors, and academic book publishers have important roles to play, as well as highly motivated individual teachers.

This would be a step towards revising the curriculum away from fragmentation and toward the kind of integration of knowledge that David Orr, Chet Bowers, and other postmodern educational theorists have been advocating.<sup>50</sup> If our revised perspective is to reflect the universe we live in better than our present one does, ecological literacy must not be relegated to the status of just another subject, department, or discipline. Rather, it must become "an *integrative* principle leading to a radical reconceptualization of education."<sup>51</sup>

The better graduate programs today teach students not only the importance of learning foreign languages, but also the importance of studying

the diverse cultural paradigms behind them which inform their meaning. But how many history departments today teach students that they need to learn to read the Book of Nature, which requires first learning the ecological language it speaks? Until we do, we are like foreigners in our own country, and any scholarly analysis we make will be lacking vast amounts of vital primary data which is readily there for the taking if only we were trained to perceive and interpret it.

As the AHA-sponsored conference I mentioned at the beginning of this paper acknowledges, history is about interactions. The majority of historians, however, have focused and continue to focus mainly or entirely on interactions between humans. To do so is to ignore the reality that human activity does not occur in isolation unto itself, but is embedded in natural systems and their far more complex activity. Until we come to accord more significance—perhaps even primary significance—to the interactions between humans and other actor-components in our shared biosphere system, we will continue to be like the drunk under the streetlight, searching vigorously yet failing to detect what we most desperately need to see.

## Notes

1. See for example, Erika Weinthal, *State Making and Environmental Cooperation: Linking Domestic and International Politics in Central Asia* (Cambridge, MA: The MIT Press, 2002), pp. 73-132; James Critchlow, *Nationalism in Uzbekistan: A Soviet Republic's Road to Independence* (Boulder, CO: Westview Press, 1991), pp. 61-76; and Murray Feshbach and Alfred Friendly, Jr., *Ecocide in the USSR: Health and Nature Under Siege* (New York: Basic Books, 1992).
2. See David Oshinsky, "The Humpty Dumpty of Scholarship," *New York Times* (August 26, 2000): A17.
3. Alfred North Whitehead, *The Aims of Education* (New York: The Free Press, 1967), 51.
4. David Orr, *Ecological Literacy: Education and the Transition to a Postmodern World* (Albany: SUNY Press, 1992), x.
5. Orr, *Ecological Literacy*, x.
6. Orr, *Ecological Literacy*, 90.
7. Ted Steinberg, "Down to Earth: Nature, Agency, and Power in History," *American Historical Review* 107/3 (2002): 799.
8. Ponting, *A Green History of the World*.
9. Sing C. Chew, *World Ecological Degradation: Accumulation, Urbanization, and Deforestation 3000 BC-AD 2000* (Walnut Creek, CA: Alta Mira Press, 2001).
10. Chew, *World Ecological Degradation*, 1. (Italics in original.)

11. Clive Ponting, *A Green History of the World: the Environment and the Collapse of Great Civilizations* (New York: St. Martin's Press, 1992), 69.
12. Plato, *Critias* 111b-d.
13. Ponting, *A Green History of the World*, 72.
14. J. Donald Hughes, *The Environmental History of the World: Humankind's Changing Role in the Community of Life* (New York: Routledge, 2001), 38.
15. Richard C. Foltz, *Religions of the Silk Road: Overland Trade and Cultural Exchange from Antiquity to the Fifteenth Century* (New York: St. Martin's Press, 1999).
16. David Christian, *A History of Russia, Central Asia and Mongolia, Volume 1: Inner Eurasia from Prehistory to the Mongol Empire* (Oxford: Blackwell, 1998); Joseph Fletcher, "The Mongols: Ecological and Social Perspectives," *Harvard Journal of Asiatic Studies* 46/1 (1986): 11-49.
17. Foltz, *Religions of the Silk Road*.
18. David Loy, "The Religion of the Market," in Harold Coward and Daniel Maguire, eds., *Visions for a New Earth* (Albany: SUNY Press, 2000), 15-28.
19. Jay McDaniel, "The Sacred Whole: An Ecumenical Protestant Approach," in John E. Carroll, Paul Brockelman, and Mary Westfall, eds., *The Greening of Faith: God, The Environment, and the Good Life* (Hanover, NH: University Press of New England, 1996), 105.
20. Ilya Prigogine and Isabelle Stengers, *Order Out of Chaos: Man's New Dialogue With Nature* (New York: Bantam Books, 1984); Fritjof Capra, *The Tao of Physics: An Exploration of the Parallels Between Modern Physics and Eastern Mysticism*, 2nd ed. (New York: Bantam Books, 1984).
21. Ramachandra Guha, *The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya*, (New Delhi: Oxford University Press, 1989).
22. See for example Vandana Shiva, *Biopiracy: the Plunder of Nature and Knowledge* (Boston: South End Press, 1997); Idem., *Protect or Plunder?: Understanding Intellectual Property Rights* (New York: Zed Books, 2001); and Darrell Addison Posey, ed., *Cultural and Spiritual Values of Biodiversity* (London: Intermediate Technology, 1999).
23. Vandana Shiva, *The Violence of the Green Revolution: Third World Agriculture, Ecology, and Politics* (Atlantic Highlands, NJ: Zed Books, 1991); Himmat Singh, *Green Revolutions Reconsidered: The Rural World of Contemporary Punjab* (New Delhi: Oxford University Press, 2001).
24. Alon Tal, *Pollution in a Promised Land: An Environmental History of Israel* (Berkeley: University of California Press, 2002). See my review in *Environmental History* 8/3 (2003): 484.
25. David Rindos, *The Origins of Agriculture: An Evolutionary Perspective* (Orlando: Academic Press, 1984).
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*the Twentieth Century World* (New York: Norton, 2000), Robert Marks, *The Origins of the Modern World: A Global and Ecological Narrative* (Lanham, MD: Rowman and Littlefield, 2002).

32. Marks, *The Origins of the Modern World*, 12.
33. Madhav Gadgil and Ramachandra Guha, *This Fissured Land: An Ecological History of India* (Berkeley: University of California Press, 1992), Richard P. Tucker and J.F. Richards, eds., *Global Deforestation and the Nineteenth-Century World Economy* (Durham, NC: Duke University Press, 1983).
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35. Hughes, *The Environmental History of the World*, 246. For discussion of the environment in existing American history textbooks see Steinberg, "Down to Earth," 799-800.
36. Steinberg, "Down to Earth," 799.
37. Orr, *Ecological Literacy*, 20.
38. Orr, *Ecological Literacy*, 20.
39. James Lovelock, *Gaia: A New Look at Life on Earth* (New York: Oxford University Press, 1979).
40. Chew, *World Ecological Degradation*, 10.
41. Steinberg, "Down to Earth." See also the transcript of the online discussion of Steinberg's article, which was held electronically from September Sept. 3-17, 2002, accessible at <<http://www.historycooperative.org/phorum/list.php?f=13>>.
42. William H. Sewell, Jr., "Nature, Agency and Anthropocentrism," online discussion of Steinberg, "Down to Earth," <<http://www.historycooperative.org/phorum/read.php?f=13&i=5&t=5>>, Sept. 7, 2002.
43. Pollan, *The Botany of Desire*, xix.
44. See, for example, William H. Sewell, Jr., "A Theory of Structure: Duality, Agency, and Transformation," *American Journal of Sociology* 98/1 (1992): 1-29.
45. Pollan, *The Botany of Desire*, xxi.
46. Susan Blackmore, *The Meme Machine* (New York: Oxford University Press, 2000).
47. Daniel M. Wegner, *The Illusion of Conscious Will* (Cambridge: MIT Press, 2002).
48. Donald Worster, personal communication May 14, 2002.
49. Cited in Marks, *The Origins of the Modern World*, 14-15.
50. Orr, *Ecological Literacy*; C.A. Bowers, *The Culture of Denial* (Albany: SUNY Press, 1997).
51. Orr, *Ecological Literacy*, 141; emphasis mine.