

The nature of metaphors in cultural geography and environmental history

David Demeritt

Department of Geography, University of British Columbia, 217–1984 West Mall, Vancouver, BC, Canada V6T 1Z2

1 Introduction

Despite the apparent common ground shared by environmental historians interested in nature and cultural geographers writing about landscape, the two groups have had little to say to one another. Some of this estrangement is the inevitable result of disciplinary distance, but simply bringing the two closer together will not be enough to spark meaningful discussion. In that hypothetical conversation, environmental historians and cultural geographers would likely talk past one another because, quite literally, they speak different languages and use incommensurable metaphors. Some translation is required. My selective review of metaphors in environmental history and cultural geography is intended to point the way towards some new metaphorical terrain, indicated by the work of Bruno Latour and Donna Haraway. Approaching the world from this general direction, I suggest, environmental historians and cultural geographers might make more sense to one another. In very different ways, Latour and Haraway each provide metaphoric tools that make it possible to imagine nature as both a real material actor *and* a socially constructed object without reducing it, ultimately, to a single pole of the nature/culture dualism. Their metaphors for nature can provide environmental historians and cultural geographers with corrective lenses for the dizzying double vision produced by the nature/culture dualism that fixes nature and landscape as either autonomous natural actors or absolute social productions.

Environmental historians focus upon 'nature as a historical actor' (Merchant, 1989: 7). In so doing, they distinguish themselves from other historians who typically treat nature as an object of human contemplation and controversy or as the physical stage for a quintessentially human drama. Environmental historians are committed to integrating the independent agency of nature in their narratives because it 'reminds us that there are different forces at work in the world and not all of them emanate from humans' (Worster, 1988: 292–93). In pressing their colleagues to study nature's 'autonomous place in history' (Cronon, 1990: 1122), environmental historians have seized upon Carl Sauer's writings about human impacts on the landscape to form an intellectual pedigree that legitimates both the metaphor of nature as an autonomous actor and the status of environmental history within the discipline (Cronon, 1983; Worster, 1988; White, 1985).

In cultural geography, by contrast, the appeal of new landscape metaphors is bound up

with a critique of Sauer's methodological discussions of landscape. Sauer, it is commonly argued, overemphasized mere description of artifacts on the landscape and ignored the processes that give these objects meaning and thus landscapes power (Cosgrove, 1978; Jackson, 1989; Duncan, 1990). Whatever the merits of this common caricature of the Berkeley school – and it has been challenged (Price and Lewis, 1993a) – many cultural geographers now seek to remedy these perceived shortcomings by describing landscapes as texts. Other cultural geographers prefer metaphors of icon, spectacle, way of seeing or theatre. Despite important differences between them, all these metaphors of cultural production highlight the cultural construction of landscape through contested processes of signification. They make landscapes malleable cultural projections, whose shape and meaning are determined ultimately by the linguistic and social contexts associated with them.

The different reception given Sauer by environmental history and cultural geography reflects disagreement over the ontology of nature and landscape, as real things existing wholly prior to and independent of cultural ways of knowing them. As environmental historians defend the hard-won idea of nature as a historical actor 'exist[ing] apart from our understanding of it' (Cronon, 1994: 40), cultural geographers question a similar dualism about landscape as either the distribution of real, material objects in space or human perceptions of these objects. This important difference of opinion is inscribed in their respective metaphors. If nature is a historical actor, it exists and acts on humans independently of their perceptions of it. Environmental historians reveal 'the earth itself as an agent and presence in history' (Worster, 1988: 289). Their stories critique existing social practices by revealing the perils of ignoring the independent activity of nature. If, on the other hand, landscape is some kind of cultural production, then its form and meaning are not to be sought by reference to 'nature' but rather, must always be reckoned in terms of the cultural contexts associated with them. The reading of landscape is thus 'constitutive of reality rather than mimicking it'. In the same way that 'written texts are not simply mirrors of reality outside themselves, so cultural productions, such as landscapes, are not "about" something more real than themselves' (Barnes and Duncan, 1992: 5).

These metaphoric perspectives are irreconcilable. Radically different worlds are disclosed by the metaphors of nature as agent and landscape as text. Yet I am sympathetic to both. Environmental historians first looked to the work of Sauer in order to understand nature as an active participant in human history. Some of the criticisms made of Sauer's approach in cultural geography might also be made of a particular style of environmental history. Cultural geographers appropriated metaphors of cultural production to turn attention towards the social construction of meaning. This perspective has proven valuable in denaturalizing hegemonic ways of seeing landscape. Environmental historians, however, would respond that the world is not denatured. Too sharp a focus on human ways of seeing makes nature seem illusory, a blank slate on which different humans struggle to inscribe their particular readings. Environmental historians are committed to representing the agency of nature as autonomous from cultural ways of understanding it. They insist that 'no landscape is completely cultural; all landscapes are the result of *interactions* between nature and culture' (Worster, 1990a: 1144). Speaking of natural agency in this way, environmental historians occlude much consideration of the ways in which this agency is always understood through cultural lenses. Of course, it is this representational dilemma that prompted cultural geographers to take up metaphors of cultural production in the first place.

By convening such a conversation between environmental history and cultural geog-

raphy, I will explore in more detail the different worlds disclosed by their metaphors. As I do so, however, it will be with more than simply review in mind. Without simultaneously changing the terms of the discussion, my effort to bring environmental history and cultural geography closer together will only reproduce the shouting matches staged recently in the *Journal of American History* (Cronon, 1990; Crosby, 1990; Merchant, 1990; Pyne, 1990; White, 1990; Worster, 1990a; 1990c) and the *Annals of the Association of American Geographers* (Cosgrove, 1993a; Duncan, 1993; Jackson, 1993; Price and Lewis, 1993b). To this end, I find the work of Bruno Latour and Donna Haraway vitally important because it provides a new vocabulary for discussing nature as a monstrous hybrid, a lively, if socially constructed actor. In the final part of the article, I will discuss the different ways their metaphors enframe nature and enable us to think about it simultaneously as an embodied material actor and as a socially constructed object.

II The landscape cross-section approach to environmental history

Though they call their sequential landscape cross-sections environmental histories, Richard White (1980; 1983), William Cronon (1983) and Timothy Silver (1990) have pursued a narrative strategy advocated by geographers Carl Sauer and H.C. Darby. Landscape cross-sections allow these environmental historians to widen the frame of conventional historical accounts to include natural actors. Cronon (1983: vii) relies upon 'the tools of an ecologist' to reveal the 'changing circumstances of such things as pine trees, pigs, beavers, soils, fields of corn, forest watersheds and other elements of the New England landscape'. Such matters were often ignored by historians, who focused exclusively on human actors. As White (1983: 323) concludes, 'social change clearly has environmental consequences, but environmental change, in turn, also affects societies. The process is reciprocal.'

Insisting upon the agency of nature, historians pursue an explicitly political project. With this metaphor, they distinguish themselves from intellectual history's concern with ideas about nature and consolidate a place for themselves within the American academy where environmental history got its start. In the agency of nature, environmental historians also find a wider political message aimed at American society in an age of limits. Social critics as well as scholars, environmental historians prosecute their critique according to the conventions of academic discourse. 'Nature,' writes Richard White (1983: 323), 'is not infinitely malleable. Changes in the physical world rebound back to affect societies which initiate them.' This claim is so authoritative because it is backed up by scrupulously documented archival research and a careful marshalling of facts and arguments derived both from the historical literature and, as a specifically *environmental* history, also the literature of ecological science. Behind White's claims about the agency of nature stand the collective conclusions of countless historians and ecologists.

Although Cronon, Silver and White use the sequential landscape cross-sections advocated by Sauer, they are open to relatively few of the criticisms with which Sauer has been tagged. They do not work with the kind of superorganic theory of culture that has been said to afflict Sauer and cultural geography more generally (Duncan, 1980). Unlike the new cultural geographers whose critique focuses upon Sauer's methodological and programmatic addresses, environmental historians read Sauer's substantive (and diverse) writings about landscape change. While it might reasonably be said that Cronon (1983), Silver (1990) and White (1980; 1983) tend to privilege landscape changes *per se* and to

ignore the ideological constitution and consequences of these changes, this is not the result of any theoretical or disciplinary stricture against discussing the cultural meanings of changing landscape patterns, as has been said of Sauer's cultural geography. Environmental historians are unmarked by the legacy of the Sauer-Hartshorne debate and its narrow focus on place facts, *landschaftskunde* and scientific legitimacy. Cronon (1983), for example, analyses the meaning of improvement and enclosure in Lockean discourse and its legitimization of the appropriation of aboriginal lands.

There are, however, other difficulties with narratives structured by sequential landscape cross-sections linked by vertical themes. Cronon (1983), Silver (1990) and White (1980) pay relatively little attention to the conflicts and differences within each of their cultural categories. Their focus on the encounter between Europeans and native peoples requires them to minimize intragroup difference so as to highlight intergroup difference. Thus, all European colonists became farmers and aboriginals horticulturists or hunters and gatherers. The dichotomous treatment of natives and newcomers and a focus on production on the land tends to universalize the activities of men and to slight those of women. Generally, these male historians are much more thorough in their treatment of women's work in Amerindian societies, where women often tended the crops, than in Eurocolonial ones where usually they did not.

Such erasures are a necessary part of any narrative driven by the juxtaposition of introductory and concluding landscape cross-sections. In each of these books, the opening cross-section of the native cultural landscape sets the stage for a story about decline and degradation that ends with another cross-section: the degraded colonial landscape. This juxtaposition, and its attendant distinction between (relatively) homogenized native and European peoples, is fundamental to the meaning of these stories. As Cronon (1992: 1370) observes of this rhetorical strategy, 'Our narratives take changes in the land and situate them in stories whose endings become the lessons we wish to draw from those changes.' Without the contrast between the introductory and concluding landscape cross-sections it would be impossible to see either the agency of nature or to grasp its meaning. For Cronon (1983: 170), as for Silver (1990) and White (1980; 1983), the story is both tragic and educational: 'By integrating New England ecosystems into an ultimately global capitalist economy, colonists and Indians together began a dynamic and unstable process of ecological change . . . We live with their legacy.'

By freezing space in a single moment of time, these environmental historians make it difficult to appreciate the complex weave of different temporalities embedded in a single cross-section. The landscape and the people on it, as Cronon himself admits (1983: 169-70), are not static in the way that the snapshot before-and-after comparisons of these narratives can perhaps suggest. By tying the success of Eurocolonial people(s), their cultural landscape and capitalism together in their concluding cross-sections, Cronon (1983) and Silver (1990) suggest a necessary and sufficient explanatory link between the very different phenomena they describe. The move between description and explanation is more difficult than this narrative strategy implies. The explanatory equivalences made between the arrival of European colonists, capitalism and the resulting degraded landscapes of capitalist commodity production oversimplify a complex and hotly debated transition to capitalism in North America. They also suggest that environmental devastation is a problem exclusive to European colonists and capitalist societies. As Gadgill and Guha (1992) show so poignantly in their discussion of India, environmental devastation is neither that simple nor that culturally exclusive a problem. By describing the 'shaping of Island County', Washington, through multiple cross-sections, Richard White (1980)

makes a longer, and in this regard more satisfying, sweep over evolving cultural landscapes, but he too tends to ignore the various social and economic forces directing the succession of suburban landscapes upon the failure of Island County forestry and agriculture. Nature may be an actor in human histories, but the strands of these histories are woven at many different scales of time and space. Landscape cross-sections tend to freeze the many different temporalities of human and natural activity in a singular temporal rhythm of explanation.

III New cultural geography and the metaphors of cultural production

The present turn to landscape metaphors of cultural production marks a significant break with the methods and metaphors of landscape analysis emphasized by Carl Sauer and practised by the Berkeley school. Much of their appeal lies in the sour legacy of the Berkeley school, widely demonized for antiquarian 'object fetishism' (Duncan, 1990: 11), whose 'range was limited to the interpretation of historical, rural, and relict landscapes, and to static mapping of the distribution of culture traits, from barns and cabins to field systems and graveyards' (Jackson, 1989: 1). This dim view of the Berkeley school of cultural geography, though not universal (cf. Price and Lewis, 1993a), is widely held (Cosgrove, 1978; Cosgrove and Jackson, 1987; Gregory and Ley, 1988; Anderson and Gale, 1992; Bondi, 1992). Critics cite the naive empiricism and atheoretical stance of practitioners who focused on material artifacts as the lens through which to view cultural groups. Their new metaphors of cultural production emphasize the active social construction, representation and interpretation of absolutely cultural landscapes and their contested meanings. Comparison of landscape to a text, icon, spectacle or way of seeing sets human geographers' sights beyond morphology and any vestigial links to physical geographers' metaphors of natural agency. It also signals a proclivity to set aside the hiking boots preferred by Sauer for the patent leather shoes more appropriate to fieldwork in the cafés and art museums now of empirical interest to cultural geographers (Cosgrove and Daniels, 1989).

Although there are important differences between these various metaphors of cultural production, the general idea of landscape as a cultural production means that landscape is not something already 'out there', like environmental historians' nature, waiting patiently to be discovered and represented faithfully as it really is. If the physical form, meaning and representation of landscape are in some sense integumentary, then the traditional distinction between the imaginary, representational sense of landscape and its physical dimension becomes difficult to maintain. As Daniels and Cosgrove put it (1988: 1), 'a landscape park is more palpable but no more real, nor less imaginary than a landscape painting or poem.' Metaphors of text and cultural production suggest the complexity of these relationships and the possibility for still other interpretations of landscape. In the favourable estimation of Barnes and Duncan (1992: 7), such metaphors convey 'the inherent instability of meaning, fragmentation or absence of integrity, lack of authorial control, polyvocality and unresolvable social contradictions'.

The enthusiasm of cultural geographers for these new metaphors owe much to a particular reading of poststructuralism and Derrida's famous phrase, 'there is nothing outside the text'. There are a number of ways to understand this. Often, it is read literally, as applying simply to books, documents and other written texts. To introduce 'a more

sociological, less deterministic concept of intertextuality' (Duncan and Duncan, 1988: 119), many geographers appeal to the hermeneutics of the anthropologist Clifford Geertz for whom cultures are not 'identities to be stared at but texts to be read' (1980: 135). Geertz's world-as-text analogy emphasizes that meaning is not given; it must be found. This is an important, if by now well worn, observation, but it assumes the coherence of meanings, found through Gadamer's dialogic fusion of horizons, that a more nuanced reading of poststructural general textuality dissipates (Jay, 1991). As Spivak (1987: 30) notes, Derrida's infamous dictum can *also* be translated as 'there is no absolute extra-text'. I understand Derrida to mean that there can be no metaphysically transcendent ground from which to fix the meaning of the world absolutely and unequivocally. Grounds are always grounded by heterogeneous processes that leave heterogeneous traces yielding still other possible grounds. These traces cannot not be suppressed in presenting the world as it is made to be. Spivak (1990: 1) uses the phrase 'the worlding of a world' to describe these mechanics that fix truths about the world. To this way of thinking general textuality is not something that refers only to documents 'divorced from . . . historical, social, and political processes' (Duncan and Duncan, 1988: 119), or to meaning that is accessible by hermeneutic reference to some 'extra-textual field of reference' (Duncan and Ley, 1993: 9). It neither reduces the world to a literal text nor abides the phenomenological opposition of world and text, things-in-themselves and experience of them. Instead, this general textuality recognizes that truths are relational and yet can only be achieved by closing off the possibility of still other, partial truths. It makes geographers open and honest about the politics of closure that they effect whenever they break the chain of substitutive signification to fix the meaning of landscape as they see it to be (Sparke, in press). The world may be like a book, in that it must always be read and interpreted, but the two are by no means the same thing, as Geertz's world-as-text analogy and a common misreading of poststructural textuality both seem to suggest.

One of the earliest and most influential applications of the Geertz's text metaphor in cultural geography is David Ley's evocative analysis of the landscapes of inner Vancouver (1987). He read opposing real-estate developments as rich projections of alternative visions of (post)modern urban life, but in Ley's 'hermeneutics of the built environment' (1987: 54), the ruptures and discontinuities within the 1960s' 'ideology of liberal reform' and 1980s' neoconservatism are downplayed (but see Ley, 1980). As a result, stories about the bare-knuckled worlds of urban politics, patronage and federal-provincial-municipal negotiation fade into the background, as do the exigencies of capital circulation in the redevelopment of Vancouver's old industrial districts as housing for a new class of gentrifiers. Instead, Ley's discussion is framed around urban design where the metaphor of text provides him with a convenient way to read landscape design ideologically in terms of liberal reform and neoconservatism. With the eclipse of conflict within these analytical categories, however, the landscape becomes a mirror that passively 'displays the ideology of neo-conservatism' and liberal reform (Ley, 1987: 42).

In contrast to this allusive use of the text metaphor, James Duncan has outlined a bold theory for reading landscapes as texts (Duncan, 1990; Duncan and Duncan, 1988). Their meanings, he argues (1990: 16), are constrained by social discourses 'constituted by a set of narratives, concepts, and ideologies relevant to a particular realm of social practices'. This is an important departure from Foucault's notion of discourse, because it builds into Duncan's analysis the hierarchical distinction between ideology and practice that Foucault (1969/1972) sought to dispel. Whereas Foucault was concerned with the combination of statements, practices and institutions that were the conditions for their possibility,

Duncan's discourses are sets of ideas *about* an institution whose existence he already takes for granted. As a result, Duncan reads landscape in terms of what Foucault (1976/1990) called 'juridico-discursive' power – a kind of centralized power, modelled on the state and legislating action in terms of repression/liberation, censorship/licence and prohibition/permission.

For all its rich detail, Duncan's empirical account of the juridico-discursive power of kingship and its inscription in landscape texts puts out of sight other axes of power at work in the Kandyan kingdom (in present day Sri Lanka). If the example of peasants in other places provides any indication at all (Hilton, 1990; Bix, 1986), Kandyan peasants actively resisted feudal appropriations from the king and nobles alike, but Duncan's exclusive focus on the sovereign power of the state allows no place outside the hegemonic terms of kingship discourse for peasants to contest the corvée labour used for new palace landscape. Ethnicity and colonialism are even harder to discuss in terms of the juridico-discursive power of landscape texts because, unlike the state, they operate diffusely without a central lever that might be manipulated to tighten or release the grip of their power. Although kingship discourses came to Kandy from southern India along with Tamil migrants, the relations between ethnicity and the politics of landscape interpretation receive short shrift in *The city as text*. As the bitter struggles between Tamil separatists and the Sinhalese majority in contemporary Sri Lanka attest, this ethnic dimension intersects with contested claims about the sovereign power of the state, but it cannot be understood entirely in these terms. Neither can colonialism. The 1814 rebellion, dramatic focus of the book, took place within the context of a rapidly expanding British imperial system, but colonialism fades from the scene in *The city as text* except where the reports of British invaders provide some insight into the struggle for indigenous meaning in the palace dispute (Duncan, 1990: 84). My point here is not to lambast Duncan for writing about local politics instead of class struggle, ethnicity or colonialism. Rather, I am concerned with the way in which this framework for discussing political conflict in Kandy abstracts these events from any relationship to other axes of social power or to the world beyond the narrow borders of Kandy. The fact that Kandy was formally subsumed to the British empire in the immediate wake of this civil war suggests that the outcome of this indigenous political struggle is not as easily disentangled from these other axes of social power, specifically from an encroaching British colonial system, as Duncan's narrative seems to imply.

As a more general manifesto for geographic research, Duncan's theory for reading landscapes as texts might easily be seen as the latest rendition of the old colonial project of geography. 'Landscapes anywhere,' Duncan (1990: 184) claims, 'can be viewed as texts which are constitutive of discursive fields, and thus can be interpreted socio-semiotically ... to uncover the underlying, multivocal codes which make landscapes cultural creations, to show the politics of design and interpretation and to situate landscape at the heart of social processes.' His methodological discussions pay little attention to the relations of power wrapped up with geographers' readings of landscape texts (Duncan and Duncan, 1988; Duncan, 1990). This proprietary claim and his particular reading of Kandy are both authorized by the conceit that landscape is a coherent text with identifiable meanings available for the geographer to read and appropriate. This fiction effaces all historical, cultural and other differences separating geographers from their objects of inquiry as it favours the interpretive power of geographers over their subjects (Crapanzano, 1986). 'Although the cosmic symbolism of Kandy may seem radically "other" to us', the text metaphor recuperates these differences and reassures us, that 'fundamentally it [Kandy] is not different from any other landscape' (Duncan, 1990: 7 – I am indebted to Gregory,

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1994: 149–50, for this point).

The metaphor of landscape as text also suppresses any trace of other, nonhuman actors from the production of landscape. Many cultural geographers are simply not interested in questions where nonhumans are very prominent. In the case of Ley's studies of the city, for instance, it may be perfectly appropriate to think of landscape 'as a text in which social relations are inscribed' (Duncan and Duncan, 1988: 123). As a general theory of landscape, however, Duncan and Duncan's more bold claim that 'any landscape can be analysed as a text' (emphasis added) inflicts considerable violence. It treats landscape as a blank page that only human actors can read and write upon. The naivety of such a proposition has become all too apparent in an era of ozone holes and AIDS where those who refuse to acknowledge the liveliness of gaseous molecules and tiny strands of nucleotides do so at their own peril. More important for human geography, however, such a programme would abdicate all interest and concern over such nonhuman matters to science. Science is too important to be left to just the scientists, just as nature is too important to be left to just the scientists, just as nature is too important to be left to the landscape, the metaphor of landscape as text hamstring human geographers trying to challenge the hegemony of science on a familiar conceptual terrain.

Other landscape metaphors of cultural production also emphasize the interpretation of cultural ideas as they are reflected in and help to produce the meanings of landscape. In common with other cultural geographers following art historian Erwin Panofsky's iconography (Osborne, 1988; Eyles and Peace, 1990), Stephen Daniels' (1988: 43) argues that, in later Georgian England, woodland was an icon that 'symbolize[d], and so "naturalize[d]", varying and conflicting views of what social order was or ought to have been'. During this period when common lands were being enclosed and large rural estates physically transformed, the meaning of these landscape 'improvements' was debated and contested through the woodland symbols deployed in art, prose, poetry and other media. Daniels's (1993; Daniels and Cosgrove, 1993) most recent writings introduce metaphors like text and spectacle to describe how landscapes communicate meaning, but like his previous use of icon, such metaphors focus on the different political ideologies projected on to and expressed symbolically through landscape. In *Fields of vision*, his discussions of St Paul's Cathedral and John Constable's *The haywain* are compelling because they historicize these enduring, yet multifaceted and perpetually reinterpreted symbols of England. But by presenting landscape as a symbol of something else – 'the basic attitude of a nation, a period, [or] a class' (Panofsky, 1962: 7) – metaphors of icon, spectacle and text tend to eclipse discussions of landscape changes *per se*. Landscape becomes interesting only in so far and as much as it frames the social and provides a passive stage for an exclusively cultural drama.

Like Daniels, Denis Cosgrove uses a number of different metaphors of cultural production to describe landscape. In calling landscape a way of seeing and, more recently, a kind of theatre, Cosgrove (1984; 1993b) argues that transformations of the landscape idea were deeply implicated in the transition to capitalism. His substantive accounts, however, concentrate 'primarily on the cosmological beliefs and attitudes of political and technical élites' (1993b: 9), and so pay relatively little attention to dissenting visions of landscape. This is an important omission, both empirically and theoretically. For instance, in seventeenth-century England, federal-era New England and the Gitskan territories in late nineteenth-century British Columbia, the arrival of surveyors and the replacement of traditional property systems by the abstract grid of the rectangular survey and exclusive individual property rights was bitterly resisted by peasants, squatters and native peoples

alike (Lindley, 1982; Taylor, 1990; Galois, 1992). To be sure, the eventual victory of capitalist title holders and of the survey system was aided by their overwhelming economic and juridical power, but the means they used to measure these gains were an inseparable part of this power, a fact not unnoticed by those who resisted the new survey system. Discussion of these struggles is crucial, not because of any commitment to 'history from the bottom up' for its own sake, but because this diversity and its suppression play an important part of any diagnosis of social power. In *The Palladian landscape* (1993b), Cosgrove provides more detailed treatment of social conflict – his descriptions of the political struggles between Venice and the provincial nobility of Vicenza and the economic tensions between patrician landlords and the peasantry of the *terrafirma* are fascinating – but this discussion is not convened in terms of the landscape idea whose hegemonic legacy interests him. As a result, landscape tends to become an ideological concept that mystifies social relations and the economy the only field of real conflict that could explain the ultimate hegemony of this particular way of seeing. Cosgrove's claim to understand economy and culture, the material landscape and the 'imaginary' landscape, as mutually constitutive, is therefore subverted.

Like the text metaphor, Cosgrove's landscape metaphors, way of seeing and theatre, tend to emphasize the cultural production of landscape and ignore the agency of nonhumans. The suppression of nonhuman agency, in fact, is the chief merit of the theatre analogy which treats landscape as an empty 'stage on which various players perform roles which are scripted but whose interpretation is the responsibility of the individual actor and a great deal of ad-libbing takes place' (Cosgrove and Domosh, 1993: 31). Cosgrove's analysis of the history of landscape as a way of seeing is more attentive to the dual sense of landscape as both an affective engagement with scenery through art and an objective observation of real, visible phenomena. By calling attention to the cultural and historic specificity of landscape a way of seeing, Cosgrove (1984) convened an important critique of this dualism and its implications for geographers' uses of landscape as a central disciplinary concept. Geographers interested in the pursuit of objective, disinterested knowledge must renounce the affective sense of landscape because emotive connection to the world dissolves objective knowledge claims into individual subjectivity. Seeing the world as alienated outsiders, Cosgrove (1984: 18) suggests, geographers have been unable to imagine sublime beauty, the meaning of place and 'the affective bond between human beings and the external world' except in individualistic terms of personal perception and private experience. Daniels (1989) calls this ambiguity 'the duplicity of landscape' and like Cosgrove (1984) sees the tensions between the realistic and illusory, subjective and objective, natural and artificial senses of landscape as the source of its conceptual power.

Feminist writers have taken this critique of the landscape way of seeing one step further by noting that vision is a peculiarly masculinist epistemic system. Gillian Rose (1993) appeals to Lacanian psychoanalysis to suggest that the possessive gaze of the geographer looking out upon landscape is an eroticized one. The gaze simultaneously individuates and constitutes his manly self as distinct from the (m)Other. Such masculinist vision, she argues, is both voyeuristic, seeing the world as separate from self, and narcissistic, seeing the world as pleasurable reflections of the same self. Thus, the two sides of Daniels's duplicitous landscape dualism, pleasure in beholding and fear that objective knowledge will be dissolved by such subjective pleasure, can be seen as the oscillating desires and fears of the masculinist Subject of geography. Psychoanalysis also provides an explanation for the feminization of Nature and its construction as Other to a masculinized Culture. Rather than locating this nature/culture dualism, as Cosgrove (1990; 1993b) does, in the

particular social and economic context of sixteenth-century Europe, Rose uses psychoanalytic theory to universalize it as an inherent result of geographers' masculinist anxieties over the conflict between their narcissistic pleasure in what Sauer (1963: 325, quoted in Rose, 1993: 69) called 'maternal natural landscape' and their voyeuristic desire for critical distance. Rose's critique of the masculinist vision of geography is quite compelling, yet I find it only a partial resolution to the problematic construction of a passive, feminized nature in geography.

By locating all the action in the desires of the human psyche, Rose's psychoanalytic geography renders nature, that is everything nonhuman, almost as passive and ever malleable as the feminized m(Other) Nature she is concerned to destabilize. This should come as no surprise since denaturalization was one of the chief aims of Lacan's assaults on the biological proclivities of Freudian psychoanalysis (Grosz, 1990). Furthermore, her focus on the individual subject and the process of psychological individuation between Self and Other tends to eclipse the historically and culturally specific conditions in which subjectivity is constituted. In careless hands, psychoanalysis can normalize white, middle-class, heterosexual, nuclear families. While I find it is necessary to interrogate the construction of nature and the masculinization of the gaze, I also think it vital to anticipate and imagine alternative ways of living in the world.

So I return to environmental historians who insist upon the active agency of nature. In criticizing intellectual historians concerned only with human ideas about nature and wilderness, Richard White (1985: 316) writes: 'physical nature in this literature becomes peculiarly passive and inanimate. The powerful mistress of the determinists disappears into a hall of mirrors where we see, not her, but rather changing reflections of our own cultural progress.' The same might easily be said of cultural geography and its various landscape metaphors, text, icon, spectacle, way of seeing and theatre. Despite the hope of Daniels (1989: 197), among others (FitzSimmons, 1989; Katz and Kirby, 1991; Philo, 1991), to 'emphasiz[e] the biophysical world', landscape metaphors of cultural production have, both in theory and practice, served to make nature ephemeral and epiphenomenal. These metaphors treat nature as a blank page or an empty stage on which the drama of culture is written and acted out. They provide no way to think about nature as a lively, heterogeneously embodied actor. In moments of metaphorical extravagance the material 'reality' of landscape disappears altogether: '[L]andscape seems less like a palimpsest whose "real" or "authentic" meanings can somehow be recovered, than a flickering text displayed on a word-processor screen whose meaning can be created, extended, elaborated, and finally obliterated by the merest touch of a button' (Daniels and Cosgrove, 1988: 8). Environmental historians insist that nature is not that malleable and the real not that easily dissolved into the imaginary. The fact that they often articulate this belief metaphorically in terms of a feminized nature suggests the power and sensitivity of Rose's important feminist critique, but Lacanian psychoanalysis has little to offer those concerned with thinking about nonhumans, so I will return to environmental historians and their insistence on nature as a real, autonomous actor in human history.

IV Environmental history and the agency of nature

Environmental historians assert the active agency of nature in human history, but they narrate its effects in a variety of different ways. Alfred Crosby (1972; 1986) has worked extensively on what he terms the 'Columbian exchange', that is the Eurasian, disturbance-

adapted microbes, pathogens, plants and animals that travelled along with and often well ahead of European colonists as they reached out to the western hemisphere and Australasia. The combined effects of this 'portmanteau' of biological invaders, Crosby (1986: 270) argues, disrupted aboriginal lifeways in the New World much more completely and more devastatingly than European colonialists who, quite unknowingly, carried with them a disorderly but powerful bunch of biological stowaways that have now touched all corners of the globe. In discrete chapters, he depicts the coincident effects of various biological invaders and explained how they combined in time and space to create an ecological imperialism that paved the way for successful European colonization. In emphasizing the agency of these important, and often ignored, nonhuman invaders from Europe, Crosby tends to ignore the cultural ways in which colonized people understood, interacted and adapted to these new presences. In New Zealand, for example, the Maori were quick to adopt European cultigens; in fact, Maori farmers supplied much of the food consumed in the early European settlements of Auckland and Wellington. The Maori were devastated by Eurasian diseases to be sure, but they were also subject to genocidal wars of conquest in which their lands were confiscated and the social systems based on it were disrupted as well (Pawson, 1992). By downplaying these more conventionally 'social' struggles and treating biological invaders and their 'impacts' as independent from the cultural ways in which they were mediated, Crosby's fine scholarship borders, at times, on the biologically determinist.

More so than any other 'natural' catastrophe, the droughts on the Great Plains during the 1930s are emblematic in American popular culture of the power of nature to affect human societies. Their place in environmental history, however, is a hotly contested one. James Malin (1947; 1967; 1984) did much of his best work in the 1940s and 1950s on the inter-relationships people and the environment in this region. A stubborn critic of the Clementian idea of a stable vegetation climax, Malin believed that drought and disturbance had always been a part of life on the Great Plains; that dust, erosion and dust storms were natural, not anthropogenic; and that European settlement and agriculture, once suitably adapted to aridity, should proceed unhindered either by such exogenous concerns or New Deal land-use controls. While perhaps less self-consciously political, recent work has followed Malin in treating the drought and its impact as an exogenous factor beyond human control or calculation (Bonnifield, 1979; Hurt, 1981). As these historians tell it, the dust bowl is a story of human perseverance, courage and adaptation in the face of natural catastrophe compounded by the equally unpredictable and uncontrollable great depression (cf. Cronon, 1992). Not coincidentally, they are more celebratory than critical of American agriculture on the plains.

Donald Worster (1979) is the most trenchant critic of this view of plains history. He argues that the dust bowl resulted from the systematic failure of capitalist agriculture to respect the balance of nature. The 'capitalist ethos' demanded a short-term profit-maximizing agriculture that ploughed under drought-resistant perennial grasses to make way for winter wheat and summer fallow that earned a higher return in wet years but yielded only dust and despair in the all too frequent dry ones. Such an idealist diagnosis tends to ignore the different positions that people occupy and to discount the structural constraints on human behaviour. Worster's more recent writings on modern agriculture provide a more sophisticated analysis of this instrumentalist attitude to nature. In *Rivers of empire*, he (1985) argues that instrumentalism is symptomatic of a particular concentration of social power and 'technical hubris' engendered by capitalism. Still, the focus of critique remains an exploitive attitude to nature that makes it impossible to respect 'the patterns of

nature [which] set a course for our lives – not the only course, or the only possible course, but a reasonably clear course that wise societies have followed in the past, foolish ones have scorned' (Worster, 1990a: 1145).

While I sympathize deeply with Worster's plaintive cry for a new environmental ethic of care, his exhortation to respect nature presents several critical problems. If, as he (1990c: 1106) argues, 'knowing the earth well – knowing its history and its limits' is fundamental to continued life on earth, then how are we to know the earth better? This is a vital question, but Worster's answer to it is ambivalent. In the postenlightenment west, science has historically been authorized to represent and speak for nature. Environmental historians rely upon ecological science for explanatory concepts like ecosystem and equilibrium that organize their narratives (Demeritt, 1994). The authority of ecological science allows Worster (1984b) to say 'with the ecologist that nature, left alone, demonstrates a marvellous system of organization'. As environmental history's most careful student of ecological science, Worster is also 'willing to challenge this authority' (1990b: 2), and rightly so. Worster (1977; 1990b) has provided a searing critique of the possible uses of revisionary ideas in ecology about natural disturbance 'to justify the destruction wrought by contemporary industrial societies' (Worster, 1984a: 13).

His critique of the social consequences of scientific representations of nature is vitally important, but so too is reflexivity about the effects of one's own accounts of nature. Worster's homeostatic nature and capitalist disturbances of it are constituted by a thoroughly romanticized aboriginal past of ecological peace and harmony. This strategy is most obvious in *Dust bowl* and *Rivers of empire*, where native peoples are denied an identity of their own outside the rhetorical framework by which their difference from modern society constitutes capitalist damage to nature (Cronon, 1992). Worster's programmatic essays promote this sort of orientalist critique of western capitalism (1986; 1988). I endorse wholeheartedly his critique of modern agriculture, and would also draw important distinctions between capitalist wheat monoculture on the great plains and the practices of Filipino peasants. Worster, however, lumps Filipino peasants into a larger collective: 'anonymous traditional farmers'. Members of this violently homogenized category are all the same, 'whether they were in medieval Sweden, or ancient Sumer, in the Ohio River valley or the Valley of Mexico' (Worster, 1990c: 1097). He (1990c: 1096) cannot acknowledge these cultural differences, because undifferentiated 'traditional practices . . . that retained much of the wisdom of nature' produce the rhetorical mirror of colonialism in which Worster constitutes and critiques the west by appropriating the primitive as the raw material for the production of the west. Worster's trick is simply to reverse the polarity of his old dualism and valorize the primitive rather than the west, but the effect produces just more of the same: a teleology in which progress produces loss, alienation and ecological exploitation. We need to unlearn our privilege as loss, because such stories make it difficult to imagine a new relationship with nature without an impossible (and violent) return to the primitive.

Unlike Worster (1988: 292–93), who would retain the culture/nature dichotomy for the strategic purpose of 'reminding us that there are different forces at work in the world and not all of them emanate from humans', Carolyn Merchant argues that humans are inseparable from the nature around us. In fact, she claims this dualism is a major part of the problem. Her first book, *The death of nature* (1980), is an account of the development of Cartesian dualisms in European science. In *Ecological revolutions* (1989), she expands this argument by connecting these scientific paradigm shifts to shifts in organic systems of human-environment relations in New England.

The bold and all-encompassing sweep of her narrative makes for an imperial attitude about the details of New England's particular histories. In describing native people's traditional mimetic consciousness, Merchant (1989: 70–74) maps the Iroquois corn-mother myth on to the Malecites and Penobscots, Algonquian groups who only adopted agriculture well after European colonization of the area (Snow, 1978; Demeritt, 1991a). Merchant's teleology also disables diagnosis of the forces making ecological revolutions inevitable. The development of capitalism she attributes to systemic contradictions between increasing population density and the ecological and economic requirements of colonial agriculture. The squeeze between increasing population density and opportunities on the farm certainly helped foster inequality, primitive capital accumulation, the development of wage labour and, by 1860, the capitalist mode of production in the long settled Connecticut river valley (Clark, 1990). At the same time, however, many other people were leaving this area for northern New England, where they tried, with some limited success, to maintain a more traditional agrarian economy in which labour was organized through the patriarchal family (Taylor, 1990; Demeritt, 1991b). Surely the capitalist ecological revolution in these thinly settled corners of New England demands a different explanation from the more crowded and rapidly industrialized portions of the region. Without some attention to scale and the uneven production of space, in short without some sense of historical geography, her nested spheres of ecology, production, reproduction and consciousness erase the different histories *within* New England.

For Merchant (1989: 1–2), New England is an important place to study because the same processes that took place 'in 2,500 years of European development' are repeated in 'New England in a tenth of that time'. Merchant's (1989: 1) claim that 'New England is a mirror on the world' violently suppresses all difference and local identity in the global unfolding of a singular history of ecological revolutions (Young, 1990). Her history operates with the appropriative logic of Hegel whereby the only hope for resolving the dialectical contradictions between environmental exploitation and ecological crisis lies in reversing the course of history: 'philosophical changes that would reintegrate culture with nature, mind with body, and male with female modes of experiencing and representing "reality"' (Merchant, 1989: 265).

The development of a new environmental ethic is a laudable goal, but dreams of transcendence and final symbiosis are violent in their effects. As Haraway (1989: 177) notes, stories beginning with original innocence and privileging the return to wholeness 'imagine the drama of life to be individuation . . . [and] alienation . . . In this plot women are imagined either better or worse off, but all agree they have less selfhood, weaker individuation, more fusion to the oral, to Mother, less at stake in masculine autonomy'. 'Primitive' people are similarly placed in such a history. To demonize the anthropocentrism of the Judeo-Christian tradition, deep ecologists use the 'Orient' as a resource, reading in selective fashion the diverse spiritual traditions of Asia to formulate their doctrine of biocentrism (Luke, 1988; Guha, 1989). Merchant (1992) is not unaware of these problems and offers important criticisms of the ethnocentric, essentialist and racist overtones of radical ecology.

I am not as confident, however, that the ethics of biocentrism can be so easily recovered. With its insistence on the 'unity of humans and nonhuman nature' (Merchant, 1992: 77), the language of biocentrism disables consideration of the processes by which what passes for nature is actually determined. By speaking of ecology and ecosystem, as both the models by which we know nature and as this object itself, Merchant (1989; 1992) reifies the knowledge of nature into the thing itself. This makes it very difficult to criticize

the process by which particular boundaries are drawn. In the Boundary Water canoe area of Minnesota where lightning-set fires are now allowed to burn, and in the Brazilian rain forest where indigenous peoples and rubber tappers are forcibly removed from their homes to make way for wilderness reserved for 'biodiversity', such boundary-making is literally a matter of life and death (Botkin, 1990; Hecht and Cockburn, 1990).

William Cronon's *Nature's metropolis* (1991: xvii) breaks from this kind of appropriative holism by focusing squarely on the processes by which 'the boundary between human and nonhuman, natural and unnatural' is determined and transformed. He links this nature/culture dualism with another, closely intertwined binary: the country and the city. The terms of such dualisms cannot exist without the constitutive tension between them in which difference marks off the place where city (or country or nature) is not: 'our own flight from "the city" creates "the wild" as its symbolic opposite and pulls that seemingly most natural of places into our own cultural orbit. We alter it with our presence, and even with the ways we think about it' (Cronon, 1991: 18–19). In breathtakingly executed chapters about commercial and transportation links, commodity and capital flows, cultural fears and fetishes, Cronon describes the multidimensional traffic between Chicago the city and its country hinterland, traffic between capital and nature, traffic that at once marked out and transformed the opposing poles of these intertwined binary pairs. By highlighting the necessary and constituent relations between them, Cronon shows how difficult it is to talk about 'nature' as a thing apart from the relations, both human and nonhuman, that bring it into being.

To unravel these complex relations he relies on stratigraphic metaphors of surface and depth. Here, Cronon (1991: xvii) draws a guarded distinction between "'first nature" (original, prehuman nature) and "second nature" (the artificial nature that people erect atop first nature)', while acknowledging 'that the nature we inhabit is never first or second nature, but rather a complex mingling of the two'. The uses of this distinction become clear in his discussion of the transportation facilities constructed at Chicago. Situated on the swampy shores of Lake Michigan with only a few feet of stubborn fluvial sands and silts separating it from the Mississippi drainage, Chicago could only be made into a metropole linking the lakes with the prairie by dredging the harbour and river, fighting the spring floods and later by building railroads less subject to such nonhuman perturbation. 'A kind of "second nature," designed by people and "improved" toward human ends, gradually emerged atop the original landscape that nature – "first nature" – had created' (Cronon, 1991: 56). This distinction between first nature and second allows him to differentiate between what people made and what original first nature did prior to and independently of human action. By displacing the culture/nature dualism into a stratigraphy he can excavate, Cronon (1991: 56) reveals the autonomous agency of nature: 'Nature met every new scheme [to dredge the harbour] with new sand, and the harbor continued to be a problem, long into the future.'

Although the distinction between first and second nature and stratigraphic metaphors of surface and depth are common to Marxist theorizing about capitalism (Smith, 1984), and Cronon uses them to similar effect, he is a strong critic of Marx's labour theory of value because it ignores the agency of nature. 'Beneath the geography of capital, underpinning it and sustaining it even as the two transformed each other,' Cronon (1991: 200) insists, 'there was still the geography of first nature.' In excavating the autonomous agency of first nature beneath the capitalist transformations of second nature, Cronon (1991: 150) appeals to the bioenergetics of Henry Odum's ecosystem science: 'In any ecosystem, only the sun produces. All other beings consume in a long chain of killing and eating.' Odum's

scientific studies of energy and mass fluxes through bounded ecosystems put a rather different spin on the Marxist concept of relations of production and the labour theory of value that underwrites it. The social relations of production revealed by Cronon's careful analysis of capitalism 'depended on still more encompassing ecological relations of *consumption* . . . [M]ost of the labor that goes into "*producing*" grain, lumber, and meat involves *consuming* part of the natural world and setting aside some portion of the resulting wealth as "*capital*"' (Cronon, 1991: 150).

This is an important argument, not least because it suggests to humans the importance of care for other, nonhuman organisms and their inter-relations with their environments, but I want to highlight the importance of always remembering that human knowledge of nature comes to us already socially constructed in powerful and productive ways. I am uncomfortable with the way in which Cronon's metaphor of ecosystem slips away from the figurative bounds of metaphor and claims to be the world itself. In categorical statements, such as, 'In nature's economy, all organisms, including human beings, consume high-grade forms of the sun's energy', Cronon (1991: 150) matter-of-factly states what nature is. This certainty, however, is dependent upon the silent appropriation of ecological science and the trophic-dynamic ecosystem models pioneered by Eugene Odum. Ecology is a discourse, not the living world itself. By conflating the two in categorical statements about first nature, Cronon (1991: xvii) fixes the very 'boundary between human and nonhuman, natural and unnatural', that his book so brilliantly shows to be 'profoundly problematic'.

His critique of the naturalistic metaphors of railroad boosters might apply equally well to his conflation of the science of ecology with first nature itself: 'We recognize such rhetoric as an exercise in mystification' (Cronon, 1991: 73). Standing behind Eugene Odum's trophic-dynamic model of ecosystems (and thus Cronon's understanding of first nature) is Odum's dissertation on the global strontium cycle, and behind that plutonium and Eniwetok Atoll, site both of the first hydrogen bomb detonation (1952) and the first large-scale ecosystem study (1954), both sponsored in part by the US Atomic Energy Commission (Hagen, 1992). Lurking not too far behind this institution are the cold war and the ever-present danger of nuclear armageddon. Ecosystem ecology got its start as radiation ecology, but the insistent press of the outside world upon the modern science of ecology hardly stops there. Integral to the metaphor of ecosystem are cybernetics, the mathematics of command-control, first developed to control automatic anti-aircraft guns and now used to guide the US Navy's cruise missiles and the automatic trading programs of international commodities brokers (Wiener, 1948; Haraway, 1989: 84–111).

My point here is not to rule out of bounds Cronon's appropriation of this *particular* science – ecosystem science – because it is 'biased' by these 'outside' influences. Nor is it to write off Cronon's marvellous book for making use of the insights of ecological science. I too believe, 'The fertility of the prairie soils and the abundance of northern forests had far less to do with human labor than with autonomous ecological processes that people exploited on behalf of the human realm' (Cronon, 1991: 149). The work done by ecologists provides some vital insights into the ways in which this happens, but it is also socially constructed in powerful and productive ways. We must always bear this in mind. 'Nothing in nature,' Cronon (1991: 19) insists in a similar vein, 'remains untouched by the web of *human* relationships that constitute our common history.' Surely this applies as much to the agency of first nature (and our knowledge of it) as to the ways in which capitalism systematically transformed second nature(s). *Nature's metropolis* provides a *tour de force* account of this process, but in relying upon a stratigraphic metaphor and the

distinction between first and second nature Cronon determines the essence of what nature 'really' is. In so doing, he reintroduces the problematic dualism between nature and culture that his book so effectively subverts.

Ultimately, the recovery of nature as an autonomous actor in human history, a real thing independent of cultural ways of knowing it, may prove to be a dangerous political manoeuvre. If nature simply 'is', then it becomes very difficult to talk about the power/knowledge relations enabled by the material and discursive preservation of nature's essential reality. In fact, the realist epistemology by which this reality is disclosed is based upon the complete denial of any connection between science and politics, the discourses particular to the opposing poles of the nature/culture dualism (Latour, 1993). By introducing the particular history of ecosystem science and its connections to thermonuclear fallout and the cold war, I closed the distance so essential in maintaining the boundaries sacred in realist epistemology between fact and fiction, science and politics, nature and culture. This tactic, however, still holds out the possibility that some *other* science, yet untainted by this contaminating closeness, might not be weighed down by the burden of worldly relationships impinging upon its stories about nature. On the epistemological scales of realism, truth rises because it is disembodied, free from the earthly burdens of cultural context. True knowledge, like the environmental historians' nature, simply is. It is transcendent and thus ultimately independent of all cultural context.

This modern fiction has been immensely powerful and productive. As 'the place where we are not' (Cronon, 1991: 17), nature operates to define culture and thus determine who/what counts within the category of environmental history's 'we'. Along with its close cousins, sex/gender, mind/body, male/female, the nature/culture dualism has worked to naturalize the essential differences making these unequal categories within an economy of signs of difference. Feminists, anti-racists and lesbian and gay activists, in particular, are wary of the ways in which this essential nature has served as a resource to fix the boundaries of what passes for the (un)real, the (ab)normal, the (un)human and the (un)natural. Nature naturalizes because the word itself connotes both the nonhuman, the sense of principal interest to environmental historians, *and* those fundamental, unalterable qualities that inhere in the essence of a thing itself – the facts of nature, the nature of a thing, etc. Unlike the metaphors of cultural geography, which emphasize the cultural construction of meaning, environmental historians' metaphor of nature as agent precludes such considerations because 'the boundary between the artificial and the natural is the very thing we [environmental historians] most wish to study' (Cronon, 1992: 1350). While I think it vital to understand the actions of nature, and applaud the work of environmental historians to this end, I also think it crucial to understand the other sense of the word 'nature' as that which is unalterable, essential and beyond human equivocation. We need to be very cautious about the great power exercised by claims to know the true nature of things.

V Metaphors of nature

In this article I have reviewed the different metaphors deployed by environmental historians and cultural geographers to understand nature and landscape. I argue that the environmental history metaphor of nature as agent provides a powerful means of seeing our world and our history as products of both human and nonhuman actors. My concern, however, is that the recovery of nature as autonomous actor and the insistence that nature

exists independently from cultural ways of knowing, makes it difficult to talk about how what passes for nature is determined in particular contexts. By re-enforcing a nature/culture dualism and relying on a closely related realist epistemology, the metaphor of nature as actor tends to preclude consideration of the ways in which particular formulations of nature are imbricated in relations of power.

Secondly, I argue that landscape metaphors of cultural production focus attention front and centre on the ways in which landscapes are constructed and their meanings fixed through social processes. Unfortunately, there is a dangerous tendency within cultural geography to reify text as writing *tout court*. By reducing the world to a blank slate or an empty stage on which only human actions matter, this understanding of textuality precludes any discussion of the nonhuman actors brought into view by the metaphors of environmental history. By discounting the nonhuman, cultural geographers' metaphors reinforce environmental historians' unfortunate misreading of general textuality and the poststructural critique of the mechanics of truth as 'an endless postmodernist deconstruction of texts' (Cronon, 1992: 1374) or a 'confused, relativistic morass' (Worster, 1990a: 1145). Equally, however, the metaphor of nature as agent, by positing a pre-existent nature, forecloses the kind of careful consideration of the material and discursive forces fixing the world's meaning enabled by the metaphors of cultural geography.

Initially, I had wanted to review recent work in environmental history and cultural geography because I thought that historians' agency of nature might complement geographers' socially constructed landscapes. Now I believe such a union impossible because these estranged disciplines work with irreconcilable metaphors. Each discloses important, if partial, truths about our world, but they are mutually exclusive because environmental historians and cultural geographers occupy alternate poles of the nature/culture dualism. If nature is an autonomous agent, then it cannot be a cultural production, and vice versa. Environmental historians and cultural geographers will not be able to reconcile their differences until they find a new language able to describe nature as both a real actor in human history *and* as a socially constructed object of these histories.

Given these intractable difficulties, perhaps it is time to switch to some new metaphors for nature. Here I find the work of Bruno Latour and Donna Haraway to be vitally important, not so much for their substantive claims about nature (though these are important as well), but rather for the language through which they frame their claims. I make no apologies if these metaphors seem like opaque 'jargon' to those who prefer 'plain language'. All language is metaphorical. If Latour and Haraway seem strange and jarring at first glance, it is because their metaphors for nature destabilize the nature/culture dualism so deeply ingrained in our 'everyday' language.

Bruno Latour describes the activities of nature and society in the symmetrical terms of nature/culture hybrids or quasi-objects. He compares the practice of science to network building in which scientists try to enrol various hybrids and quasi-objects in collective networks of alliance. To this way of thinking, Pasteur is no longer the great discoverer of long-hidden bacterial microbes, but rather a master of logistics whose singular achievement was the three-step assembly of the network of modern medicine (Latour, 1988). First, Pasteur enrolled microbes in Petri dishes and on microscope slides carefully designed to be hospitable to them. Then, with this change of scale enabled by the laboratory, Pasteur could control bacilli that 'if let loose in nature, laugh at men or kill them' (Latour, 1988: 74). Finally, the control of these unruly microbes by the forces of medicine could only be translated beyond the laboratory as far and as fast as Pasteur was able to effect another change of scale by enrolling the hygienists to clean up city sewers and

make the wider world conform to the sterile conditions of the laboratory under which the microbes could be enrolled and their activities proscribed.

Latour's vocabulary of networks provides a helpful way to think about how and why the socially constructed facts of science actually work for us without appealing either to realism and the correspondence of these facts to some world external to them, or to relativism and some form of pragmatic agreement about arbitrarily constructed facts. This conception of networks of quasi-objects dispels the great divide separating the modern world from the primitive or premodern. Differences between the capabilities of modern societies and others can be explained without appealing to the development of some different order of rationality, as does Habermas with his system and lifeworld, or by reducing these differences to 'equally arbitrary codings of the natural world', as do cultural relativists (Latour, 1993: 108). Instead, the differences come down to the scale of the networks that different groups are able to construct and maintain: 'Modern knowledge and power ... add many more hybrids in order to recompose the social link and extend its scale' (Latour, 1993: 109; in the original the words after the elipsis were italicized).

More importantly, Latour's metaphors break down the great modern divide separating nature (things-themselves) from culture (humans-in-themselves). Is Pasteur's vaccine a technical fabrication of science? Or purely a product of nature? This is the stark choice that the metaphors of cultural geography and environmental history present. With Latour's vocabulary it becomes possible to describe the monstrous nature/culture hybrids of science as both these things at once:

Quasi-objects are in between and below the two poles, at the very place around which dualism and dialectics had turned endlessly without being able to come to terms with them. Quasi-objects are much more social, much more fabricated, much more collective than the 'hard' parts of nature, but they are in no way the arbitrary receptacles of a full-fledged society. On the other hand they are much more real, nonhuman, and objective than those shapeless screens on which society – for unknown reasons – needed to be projected (Latour, 1993: 55).

His metaphors make it possible to follow environmental historians in talking about the agency of nature without appealing to a transcendent nature beyond culture and ignoring the ways in which nature is constructed for us in language, as the metaphors of cultural geography have so powerfully explicated.

Donna Haraway proposes a different, if closely related, set of metaphors for thinking about nature as both a lively actor and an artifact of social construction. She (1992: 332) complains that Latour 'pays too little attention to the non-machine, *other* non-humans in the interactions'. While it is certainly true that Latour's metaphors were first deployed to understand technology without recourse to the categories of a transcendent Social (Latour and Johnson, 1988; Latour, 1992), Haraway's reading ignores the ways his vocabulary has also been productively deployed to study the lively relations between laboratories, microbes and Pasteurians (Latour, 1988), and between scallops, scientists and fishers (Callon, 1986). Haraway (1992: 332) is much closer to the mark with her complaint that in his attempt to resist a merely 'social' explanation of science and the technical, Latour renders inadmissible 'matters like masculine supremacy or racism or imperialism or class structures ... because they are the old "social" ghosts that blocked real explanation of science in action'. Although Latour provides a stunning new way to dispel the great modern divide separating the poles of culture and nature, his accounts tend to stop just short of considering how these poles have become resources for the discursive production of power.

Donna Haraway prefers the metaphor of cyborg for speaking of what she calls artifactual nature. She comes to the cyborg metaphor from feminism and its dual effort to reveal both

the social construction of all knowledge and the actual mechanics of women's real oppression. In so doing, feminists find themselves, like environmental historians, in the difficult position of 'holding on to both ends of a pole' (Haraway, 1991: 188). Both realism and relativism, Haraway complains (1991: 191), are "god-tricks" promising vision from everywhere and nowhere equally and fully, common myths in rhetorics surrounding Science'. Cyborg imagery presents a useful alternative to the stark choice often presented between realism and relativism because it embraces 'the skillful task of reconstructing the boundaries of daily life, in partial connection with others', while simultaneously reducing any innocent 'revolutionary subject' or 'universal, totalizing theory' (Haraway, 1991: 181, 176, 181). Cyborg vision is partial: artificial and fantastic but also embodied and actively engaged with the world. As an alternative to relativism, cyborg vision provides 'partial, locatable, critical knowledges sustaining the possibility of webs of connection called solidarity in politics and shared conversations in epistemology' (Haraway, 1991: 191). In contrast to realism, cyborg vision is content with 'the privilege of partial perspective'; cyborgs embrace the accountability and responsibility that come with 'situated knowledges'.

Just as Haraway's cyborg imagery and her vision of situated knowledge marks the producers of knowledge about nature as actors embodied in real, if also artificial ways, so too her metaphor insists that 'the object of knowledge be pictured as an actor and agent' (Haraway, 1991: 198). This move alone is not enough, however, because while nature is a wily actor, it is also an object bounded in specific, powerful and productive ways:

Organisms are *biological* embodiments; as natural-technical entities, they are not pre-existing plants, animals, protistes, etc., with boundaries already established and awaiting the right kind of instrument to note them correctly. Organisms emerge from a discursive process. Biology is a discourse, not the living world itself. But humans are not the only actors in the construction of the entities of any scientific discourse; machines (delegates that can produce surprises) and other partners (not 'pre- or extra-discursive objects,' but partners) are active constructors of natural scientific objects . . . The siting/sighting of such entities is not about disengaged discovery, but about mutual and usually unequal structuring, about taking risks, about delegating competences (Haraway, 1992: 298).

Haraway's (1989) magnificent account of primate science deploys this metaphor to describe what Latour would call a heterogeneous network comprising white male and female primate scientists, the national institute of health, laboratories in Japan, field stations in Africa, human evolution, Koko, the human genome, advertising and Tarzan, among others. She shows not only how primate science was constructed but also how this network work was underwritten by many strands, especially those of capitalism, racism, patriarchy and colonialism, and how primate science enframes the world so as to make some activities possible while closing off still others. Latour's writings on science and nature tend to shy away from such political engagements. On the other hand, Haraway's metaphors of cyborg and artifactual nature provide fewer resources than Latour's language of networks for explaining why some ways of bounding the material-semiological objects called nature have proven more persistent than others.

The metaphors of Latour and Haraway, like the metaphors of environmental history and cultural geography, enable some critical projects while they proscribe others. No metaphor can provide total, unmediated vision. Rather, metaphors are enframing devices that make the world knowable while always already precluding still other ways of ordering the world. In this article I have suggested some of the ways in which the metaphors of cultural geography and environmental history work to enframe nature and landscape so as to pose alternate questions about, on the one hand, the important activities of nonhumans and, on the other, the ways in which nonhumans are socially constructed for us through language.

These are both important questions to ask, but they need to be posed simultaneously in a way that neither the metaphor of nature as agent, nor that of landscape as cultural production, will allow. Here, I suggest, environmental historians and cultural geographers might find in Bruno Latour and Donna Haraway some suggestive metaphors for framing nature as both a real material actor and a socially constructed object as well as some exciting examples of what such metaphors make possible.

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