

America as Second Creation: Technology and Narratives of New Beginnings, by David Nye (2003), Cambridge, Massachusetts: MIT Press, 371 pp.

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David Nye, a Professor of American Studies at the University of Southern Denmark, Odense, has written extensively about social aspects of technological change in the United States. In his most recent book, *America as Second Creation*, he has produced an insightful and wide-ranging review of narratives about technologies that not only greatly shaped the historical development of the post-revolutionary United States, but also continue to function as myths of national origin. Nye recognizes that the most important impacts of technology often result not from the nuts and bolts of the technology itself, but rather emerge from the discourse that affects how such technologies are employed. He demonstrates in detail how the construction of such discourse is a contested process in which the economic interests, social positions, and ideological predilections of numerous actors shaped narratives about the axe, the mill, canals, railroads, and irrigation, particularly during the 19th Century. To Nye's credit, he incorporates a great deal of information and historical analysis into a wonderfully readable text. It is a rare book indeed about technological narratives that one looks forward to reading by a fireside in the evenings – but his smooth-flowing prose, interesting examples, and liberal use of appropriate illustrations make this just such an enthralling read.

The book title refers to Nye's assertion that European settlers in the United States, like all people, needed to construct narratives to explain their own existence and how things come to be the way that they are. Unlike Native Americans whose creation stories are often inseparable from the creation of the world itself, settlers with roots in Europe could not tie their origin narratives to the places where they lived and were taking over. Instead of being tied to the first creation of the landscape, therefore, the narratives of most 18th and 19th Century Euro-Americans explained and justified what Nye describes as "second creation" – the transformation of the land through the use of technology. In the United States after 1776, such technological alteration of the landscape was often depicted as both essential to the construction of the new nation and also as a preordained fulfillment of a divine plan. Nye cites numerous primary sources that represent rivers as waiting to be dammed, prairies as waiting to be farmed, and deserts waiting to be irrigated. For most 19th Century middle- and upper-class white Americans, the purpose of new technologies was not necessarily to overrun nature; but rather, to complete the design latent within it. The idea, propagated through technological foundation narratives, that "the landscape contained latent within it the rudiments of a grand design, which it was man's destiny to carry out" (154) thus justified the clearing of forests to create farmland in the Appalachians, the construction of dams and spillways to power textile mills in New England, the ceding of rights-of-way to railroad companies in the Great Plains, and the diversion of rivers for irrigation in the deserts of the Far West. Nye also makes very clear that such narratives extolling "the technological transformation of an untouched space" have also functioned to invalidate the claims of previous inhabitants to the land, be they Native Americans throughout the continent or Mexican-American farmers in the Southwest and California, and to justify the exploitation of "untapped" natural resources with scant regard for the presence of other species dependent on local ecosystems. Because the second creation technologies such as the mill and irrigation dams (Nye points out the clear message in the name 'Bureau of Reclamation') were seen as completing the design left unfinished in the first creation, each improvement justified the taking of land that had 'lain idle' (285). In Nye's words, "The axe, the mill, the canal, the railroad, and the irrigation project all provided new ways for Americans to make use of 'God's favors.' This was the teleology of second creation. The natural world as God had made it was the first creation; man's constructions were supplementary completions of the order that lay dormant within it" (154). He also traces the emergence of technological foundation stories to underlying beliefs in the inexhaustibility of natural resources, limitless access to increasing mastery of force, a laissez faire faith in the operation of a free economic market, and the availability of apparently neutral geometrical space on the new national survey grid.

Nye usefully points out that the reality of many second-creation technologies consistently failed to live up to the predictions of the narrative. Often optimistic, technological foundation narratives commonly emphasized the egalitarian ideals of many 19th Century Americans. For

example, the axe was to provide opportunity for poor and independent farmers, mills were to spur the development of egalitarian and prosperous rural towns, the canal and railroad were to tie the nation together and lower transportation costs, and irrigation systems were to spur small homesteading in the arid West. Nye demonstrates, however, that many of these technological advances concentrated economic and political power in the hands of wealthy capitalists. The construction of small, independent mills along rural watercourses was initially touted as a healthy alternative to the deplorable labor conditions in England's large textile factories, but in practice as mill owners consolidated their power they resorted to increasingly violent measures to break incipient labor movements. Similarly, another narrative of progress (often fueled by land speculators' promotional claims) predicted that Western railroads would bring prosperity and ease of transport to small towns along their lines, but Nye argues convincingly that railroad monopolies often engaged in price-gouging and manipulation of federal authorities in order to obtain cheap land, and that railroads transformed settlement by white farmers in the American West from an individualistic process to a centralized corporate practice.

The technological foundation stories that Nye describes were created mainly through the writing, speech, and art of wealthy, white Americans, and he endeavors to contrast these narratives of the powerful with other perspectives. Each chapter describing a second creation narrative is followed by a chapter describing counternarratives to the dominant view. These counternarratives often emerged simultaneously as people were being dispossessed of their lands and resources were being exploited, although because they were often based on very localized knowledge or transmitted orally, they were generally less unified than the main technological foundation narratives. The axe narrative was to some degree countered by scholars protesting massive deforestation of the landscape, labor advocates worked to end the exploitation of child and female labor in mills, railroads and canal companies were criticized as unjust monopolies, and writers protested the eviction of small farmers and the increasing toxicity of wetlands caused by massive irrigation projects in the West. Nye additionally shows how in some cases (public anger over railroad monopolies, pressure from environmental groups on the Bureau of Reclamation), counternarratives to technological creation stories succeeded in that they partially supplanted the dominant narrative of "progress".

It is in these counternarrative chapters that the reader finds one of the few weaker points of the book. Nye shows that both dominant and marginalized groups of people contributed to the emergence of counternarratives, but very few firsthand accounts from people in marginal social positions make their way into the text. Admittedly, such voices often go unrecorded and unpublished, but they are not nonexistent. Nye acknowledges the importance of millworker strikes and details several cases of the forcible eviction of Native Americans and Hispanic farmers from irrigable lands in the west, but the voices that appear in the text are mostly those of powerful people (Euro-American scholars, artists, and authors) who take these issues as their subject. Henry David Thoreau, Alfred Stieglitz, John Steinbeck, and Edward Hopper's works appear, among many others, but pamphlets printed by mill strikers or Native American poetry are not to be found. What Nye includes is useful and instructive, but incomplete in that it is limited only to what a talented researcher can find among the shelves of a library. He is a historian of texts, extremely well-versed in the classics of American literature and art, but the work could have benefited greatly from the inclusion of less traditional academic sources of knowledge, such as ethnographic accounts. Nye's book is a useful overall guide to the contested processes by which narratives about America's technological development were formed, but it should be read together with ethnographic and ethnohistorical accounts, and considered alongside traditions of Native American and Chicano artistic expression that respond to histories of dispossession and loss. Overall, however, it should be noted that within the traditional canons of American literature and art, Nye draws on an impressive range of media, including nonfiction, novels, film, paintings, photography, and even accounts of World's Fair exhibitions. This impressive breadth of sources greatly contributes to the engrossing nature of the text.

At the close of the book, Nye asserts that while second-creation narratives are no longer as dominant in the United States as they were in the 19th Century (as the reality of limited resources and the limitations of attempts at free markets became glaringly apparent), they are still very prevalent in the ways that Americans make sense of their history. Additionally, he argues convincingly that the theoretical underpinnings of second-creation stories still resonate in current American thought. Nye asserts that in the 20th Century, second-creation narratives have largely been replaced by the recovery narrative – the idea that land needs to be protected from corruption

and degradation to undo the damage of previous human misuse. This is also a technological narrative in that scientific management is used to restore the land to (or preserve it in) a more natural form, which can once again become useful as a renewable resource (the ghost of Gifford Pinchot as the US Forest Service) or as a wilderness (the ghost of John Muir as the Sierra Club). Yet even the concept of an “untouched” wilderness can be yet another way to deny Native American ties to the land (299) and to assert that human beings control the state and future of the natural world, just for a different kind of use than before. Envisioning people as outside the environment and manipulating it is common fundamental proposition in the ideologies of second creation, resource recovery, and wilderness, and Nye argues that all three facilitate thinking of “unprotected” land as a blank space ripe for human consumption. This provocative ending is a fitting close to a book that may inspire readers to reevaluate much of what they take for granted about American history.

***Ancient Maya Life in the Far West Bajo: Social and Environmental Change in the Wetlands of Belize.* By Julie K. Kunen. Anthropological Papers of the University of Arizona, no. 69. Tucson: The University of Arizona Press (2004), x, 174 pp.**

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Traditional archaeological studies of ancient Maya settlement patterns have historically incorporated questions regarding agricultural intensification and population density. For the first half of the 20th century, it was long assumed that the ancient Maya tilled the soil by the same slash-and-burn technique that is practiced today. At the height of Maya civilization (A.D. 550-800), however, population rose dramatically in the lowland tropical forests such that swidden agriculture, which requires extensive fallow field periods, could not have sustained such dense populations on the landscape. In recent years, scholars have dismissed these simplistic ethnographic analogies in favor of more rigorous field methods and advanced theoretical frameworks that examine how the ancient Maya supported a diverse society comprised of royalty, elite craftsmen, and commoners living together in an ecologically variable landscape. Kunen’s dissertation research, recently published in the Anthropological Papers of the University of Arizona as *Ancient Maya Life in the Far West Bajo*, contributes directly to this research agenda by examining wetland bajo farming communities who once thrived in the rural hinterlands of northwestern Belize. Not only does Kunen’s work show how these Maya farmers successfully adapted to a fluctuating environment, but she also forges new ground on the discourse of ancient Maya agriculture by offering insightful interpretations as to how these bajo farming communities integrated with larger political and economic systems of the La Milpa settlement in northwestern Belize.

Current interpretations of prehispanic Maya agricultural systems emphasize the geographic variability of land resources and the variety of adaptive farming strategies employed by Maya farmers. This model has been termed the “managed mosaic” approach to prehispanic Maya land use (Fedick 1996), but is based on concepts that have long been recognized and accepted by researchers studying Maya subsistence (Culbert, et al. 1978, Flannery and Coe 1968, Netting 1977, Turner 1978a, 1978b). This approach maintains that ancient Maya farmers took advantage of local-scale biological and environmental diversity by scattering their agricultural fields across these different landscape elements. Far from the classic view of the lowlands as a uniform and agriculturally limited landscape, the “managed mosaic” model depicts the Maya lowlands as a montage of landscapes that were perceived and managed in various ways across the region and through time, often in response to political and economic pressures. Kunen’s research uses this cross-sectional approach to examine the ecological and cultural variability of various microenvironmental zones surrounding the bajo settlements near La Milpa. Through transect and block surveys she describes topographic changes in modern bajo vegetation types and identifies several agricultural use zones of the prehistoric past. Additional fieldwork consists of mapping and recording nearly 700 agricultural features including terraces, berms and rock piles as well as

numerous residences in order to examine the spatial relationships between prehistoric settlements and agriculturally-exploited landscapes. Archaeological excavation of a sample of these features provides more detailed understanding of the cultural context in which they occurred.

A primary goal of Kunen's research is to better understand the social and economic organization of these peripheral bajo farming communities in relation to and juxtaposition with elite authority figures centered some 5km away in La Milpa center. Chapter 2 is devoted to situating Kunen's study area of the Far West Bajo in the context of previous research conducted at La Milpa and in relation to the settlement history of northwestern Belize more broadly. Prior to Kunen's exploration of the Far West Bajo sustaining area, research at neighboring La Milpa identified a cosmological settlement pattern with extensive monumental architecture, four plazas and multiple thrones in the site core. Surrounding this ceremonial center was a dense residential settlement with four minor temple groups located on hilltops oriented to the cardinal directions (Tourtellot, et al. 2003). Additional collaborative research efforts investigated ancient water and land management practices in this region of northwestern Belize and identified a number of check dams and cross-channel terraces near some of the major drainage canals emptying into the Far West Bajo (Dunning, et al. 2003). Kunen's research explored one of these major drainages called the Far West Bajo, which was an important stream channel draining La Milpa center and therefore in a prime location to play an important role in agricultural production for the entire polity.

In response to research efforts aimed at studying the long-term and reflexive human-environment interactions of the ancient Maya, scholars have begun examining the ecological ramifications of such intensive land-use of tropical environments over the past several thousand years (Gómez-Pompa, et al. 2003). Research results presented in *Ancient Maya Life in the Far West Bajo* reconstruct paleoenvironmental findings (Chapter 3), as well as document agricultural feature excavations (Chapter 4) and summarize the spatial organization of the Far West Bajo settlement (Chapter 5). The combination of these multiple lines of evidence supports Kunen's assertion that bajo farmers adapted and responded to anthropogenically-induced environmental changes by altering their land management practices over time. However, the crux of Kunen's argument for the cause of environmental change in the Far West Bajo rests upon the unproven hypothesis that early settlers left hillslopes denuded of trees and vulnerable to erosion from slash-and-burn agricultural practices. Reliance upon the swidden hypothesis as a sustainable means of production has been rejected for the prehispanic Maya since the late 1970s (see Netting 1977, Turner 1978b) and contradicts current theories of Maya land use (Fedick 1996), so dependence on such an argument is circumspect. Kunen goes on to argue that agricultural resource specialists adapted to this dwindling landscape by implementing new resource conservation strategies and land management techniques in the form of terraces and berms as identified through archaeological survey and excavation. These agricultural features are extremely difficult to date absolutely, so determining their exact period of use is often relegated to associated ceramic chronologies. Although paleoecological investigations of soils, geomorphology, hydrological conditions, and pollen analysis are geographically limited (the total study area was less than 1km²), localized results suggest that the once perennial wetland bajo was transformed into a drier seasonal swamp with scrub forest vegetation. However, the precise cause and timing of this environmental change is still unclear and arguably deserves additional consideration.

Despite the heterogeneous landscape and variable water resources of the Maya lowlands, the prehispanic Maya went to great and numerous lengths to maintain their subsistence base. The variety of cultivation techniques employed in the Maya lowlands suggests that extensive ecological knowledge of local landscapes was necessary to produce sustainable yields each season. Production of agricultural crops such as maize—through its various stages of field preparation, planting, maintenance and irrigation, harvesting, and food-processing—is a complex and variable process that cannot be correlated with simple, hierarchical models emphasizing centralized control (e.g., Chase and Chase 1998). Contrarily, some archaeologists view the irregular and discontinuous pattern of agricultural features as smallholder populations responding to localized production needs (e.g., Fedick 1994, Netting 1993). Kunen argues that the spatial patterning of the residential and agricultural features of the Far West Bajo stands in marked contrast to both of these patterns (55). In recognition of the complexity of ancient Maya social and economic systems, as they relate directly to subsistence strategies and resource use, Kunen demands a more fluid and dynamic conceptual framework in which to situate the interdependent linkages directing the organizational parameters of society. Couched in the language of heterarchy, she outlines a model for community organization based upon the garden-infield-

outfield framework (Netting 1977) that stratifies the landscape into house lot, agricultural, and extraction zones (Chapter 6). The spatial arrangement of these zones does not support the interpretation that intensive agriculture was centrally planned and implemented, nor do they seem to represent localized, small-scale levels of production. Instead, Kunen suggests that this tripartite zonation represents an adaptive response to anthropogenic environmental change whereby economic specialization was “tuned to the distribution of resources and not to major centers” (105). This interpretation emphasizes a reflexive relationship between humans and the environment that simultaneously downplays the significance of elite meddling in the organization of production while emphasizing the actions of ancient peasant farmers who for so long has been ignored in Maya archaeology. Not only does Kunen’s research contribute to our growing understanding of ancient Maya land practices, but she provides a means for conceptualizing the complex social interactions of early Maya people.

In general Kunen offers an insightful, thorough, and multilayered analysis of prehispanic Maya agricultural practices in a wetland environment. Conducting fieldwork in such a bajo landscape is no small or easy task as hinted at in some of her anecdotal stories, yet Kunen seems to have collected the type and quality of data necessary to credibly examine environmental and cultural change from a perspective of historical ecology. More complete survey coverage of the prehistoric landscape might have provided a more regional understanding of environmental change, but it was obvious Kunen’s concern was directed towards changes in local conditions. In a sophisticated handling of social theory and scientific methodologies, Kunen convincingly tells the story of ancient life in the Far West Bajo as it may have been centuries ago.

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***Children and Nature: Psychological, Sociocultural and Evolutionary Investigations.* Edited by Peter H. Kahn, Jr. and Stephen R. Kellert. xix + 348 pp. Cambridge, Massachusetts: The MIT Press. 2002. Includes name and subject indexes.**

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Though the backgrounds of the contributors to this edited volume are diverse, all of the authors strive to support one thesis – that there is value in children being allowed to play in the dirt. The authors defend this thesis with approaches ranging from the poetic-magical, drawing on the importance of the magic and the mythic in developing memories of nature that endure into adulthood (Chawla, Ch.8) to the rigorously scientific, looking at children’s contact with nature through direct, indirect, vicarious and symbolic means and inferring how this impacts children’s emotional, intellectual and values-related development (Kellert, Ch. 5). Most authors in this collection, however, seek a balance between qualitative and quantitative data in their explorations of children’s ecological experiences. Regardless of the field of the authors’ expertise, research on the topic of children’s interaction with nature seems somewhat limited. This volume attempts to collect what is known, and bring together a diverse group of thinkers to put together the pieces already available in the literature to support their inferences about the value of children developing a relationship with the natural world. A few of the authors do conduct research on the direct effects of interaction between children and the natural world, but these studies are more limited in scope and often focus upon the therapeutic functions of such interactions (Katcher, Ch. 7) or children’s experience of the natural world in a more constrained setting such as a zoo (Myers, Jr. and Saunders, Ch. 6).

The first two chapters of the volume have a particularly strong evolutionary component, as Verbeek and de Waal (Ch. 1) first examine the primate relationship with nature, introducing the key term biophilia, “an innate tendency to affiliate with natural things” (p. 1). Their contribution is followed up Heerwager and Orians (Ch. 2), who explore how children’s experience of the natural world could have shaped their survival in the past.

Several of the authors display a strong cognitive orientation, exploring the cognitive foundations of biological understanding (Coley, Solomon & Shafto, Ch. 3) and subsequently, the way interaction with the environment builds a structural framework of concepts and values in children (Kahn, Jr. Ch. 4). This last chapter may be of particular interest to anthropologists as it compares children’s construction of concepts and values through environmental interaction across cultures. Also of anthropological interest may be Katcher’s contribution (Ch. 7), as he draws on Victor Turner’s ideas of liminality and *communitas* to explain why children in residential treatment facilities for behavior problems behave differently in the presence of animals.

Two essays specifically address the adolescent and nature, with the first (Kaplan & Kaplan, Ch.9) exploring the thesis that adolescents may take a “time-out” from appreciating and enjoying nature. They ultimately support this thesis, citing adolescents’ penchant for social activity over solitary reflection, an activity more often associated with natural spaces. Thomashow (Ch. 10) supports the opposite contention, however, showing that adolescents do remain engaged with nature, particularly if their educational setting makes a hands-on project related to nature part of the curriculum.

For those interested in political ecology, the final chapters of this volume may be the most interesting. Orr's contribution (Ch. 11), entitled *Political economy and the ecology of childhood*, moves beyond lamenting that children are separated from nature and asks why this is the case. He addresses the main features of the world economy, focusing on how economic growth, material accumulation, development and commodification shape children's view of the world. Orr suggests that in today's world, children are isolated from nature, and deprived of a slower pace of life. Instead, children are exposed to virtual rather than actual reality, more violence, and a faster pace of life. His solution to this cycle of movement away from nature is to think about making the world a more child-centered place. He asks, "what would a child-centered political economy look like – how would we act if we were considering the welfare of unborn generations?" His contribution to the volume melds nicely with Pyle's reflections (Ch. 12) on "Eden in a vacant lot," calling for the maintenance of open spaces, and suggesting that butterflies may be an excellent index animal for judging when environments have become too "built-up."

This volume is a good starting point for anyone interested in children's interaction with the natural world. Because the authors are pulling together existing literature for the most part rather than reporting original research, the bibliographies following each essay typically provide a large number of useful references. The book as a whole is also valuable because it brings together authors of diverse academic backgrounds. These authors refrain from using jargon from their fields of specialization, instead focusing on the big picture and providing fresh perspectives to reader-researchers who seek to explore further the main point of the volume *Children and Nature*; that there are psychological, social, and possibly even survival benefits that accrue to children from being allowed to play in the dirt.

Contents:

- 1) Peter Verbeek & Frans B.M. de Waal. *The primate relationship with nature: biophilia as a general pattern*
- 2) Judith H. Heerwager & Gordon H. Orians. *The ecological world of children*
- 3) John D. Coley, Gregg E.A. Solomon, & Patrick Shafto. *The development of folkbiology: a cognitive science perspective on children's understanding of the biological world*
- 4) Peter H. Kahn, Jr. *Children's affiliations with nature: structure, development, and the problem of environmental generational amnesia*
- 5) Stephen R. Kellert. *Experiencing nature: affective, cognitive, and evaluative development in children*
- 6) Olin Eugene Myers, Jr. & Carol D. Saunders. *Animals as links toward developing caring relationships with the natural world*
- 7) Aaron Katcher. *Animals in therapeutic education: guides into the liminal state*
- 8) Louise Chawla. *Spots of time: manifold ways of being in nature in childhood*
- 9) Rachel Kaplan & Stephen Kaplan. *Adolescents and the natural environment: a time out?*
- 10) Cynthia Thomashow. *Adolescents and ecological identity: attending to wild nature*
- 11) David W. Orr. *Political economy and the ecology of childhood.*
- 12) Robert Michael Pyle. *Eden in a vacant lot: special places, species and kids in the neighborhood of life.*

***Democracy's Dilemma: Environment, Social Equity, and The Global Economy*, by Robert C. Paehlke, Cambridge: The MIT Press (2003).**

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Robert Paehlke's new book *Democracy's Dilemma*, despite its progressive, left-of-center view of atomic age politics, remains an optimistic appraisal of modern humanity's prospects for true individual self-fulfillment. Paehlke views globalization, like many pundits, as an inevitability. Yet, his book offers the chance to avoid the mistakes of humanity's last economic transformation: that of craft-based economies to industrial capitalism. Presently, industrial capitalism has itself given way to "electronic capitalism," according to Paehlke.

Paehlke paints the world as a loose confederation of "economistic" nation states, emphasizing economic valuations over social and human factors. While governments slavishly pursue policies to make their countries seem more economically competitive, little thought in twenty-first century social engineering seems to be given to human and environmental needs. One of the main problems with electronic capitalism and the present world order is that there is no effective global democracy. Paehlke points out that in the age of industrial capitalism, the needs of the non-capitalists were met with nationally-organized labor unions. In today's global economy, no effective global voice for workers exists. The world is, according to Paehlke, one-dimensional. It should be three-dimensional; emphasizing social and environmental concerns along-side the economic motivators.

Paehlke's real contribution to an era of cynicism is his obvious conviction that choices have yet to be made which may sway the human experience from the economistic to a more holistic one. He emphasizes a "redirection" rather than "resistance" to globalism. For example, under the "California-effect," large economies such as California or Germany have or may still influence surrounding economies' environmental standards for the better. Put simply, large, attractive economies where the populace is sufficiently concerned about the environment have the power to entice outside capitalists to accede to their higher environmental standards.

Certainly, Paehlke's point on the ability of California-like economies to enforce tougher environmental standards is well taken. Yet the future of the third of Paehlke's three dimensions of society, the human one, presents greater uncertainty. Industrial nations with progressive labor and welfare standards have done little to induce the same behavior in the United States or developing countries. Forcing others to make more environmentally-friendly goods for sale in your jurisdiction is one thing. Forcing them to ensure better conditions for their workers remains another matter. Paehlke is still optimistic on this front too though. As he points out, the first problem with a one-dimensional economistic view of life is that it ignores the accepted psychological hierarchies of human need. But further, empirical evidence shows that people, even in the United States, do want to work less and have more time for their families. Experience in Western Europe has shown that some reduction in workers' pursuit of economic gain has led to enrichment in their personal lives. The problem then, appears to be one of information. Electronic capitalism is what it is, in part because capitalism saturates the airwaves, influences consumer preference, and manufactures want itself. The difficulty ahead lies largely with combating the domination of the media by corporate interests.

Paehlke brings together a wealth of empirical studies concluding everything from economism's ability to destroy the American family to the increasing lack of correlation between wealth accumulation and human happiness. The strength, number and breadth of Paehlke's citations alone is remarkable given the subjective nature of his topic. All the while Paehlke is careful to keep his ideology vaguely to the left, relying on empiricism to carry the day. This book should be required reading in university economic classes. The fact that it likely will not be is proof that we still have far to go to realize the possibilities to which Paehlke alludes.

Environmental Leadership in Developing Countries. Transnational Relations and Biodiversity Policy in Costa Rica and Bolivia by Steinberg, P.F. (2001), Cambridge: MIT Press.

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The book of Paul Steinberg, an assistant professor of political science and environmental policy at Harvey Mudd College, provides an excellent example of how to use the comparative politics and public policy literature to address questions related to the development of biodiversity conservation policy programs in Latin America. The main task of his work is to understand how in the development of such policy programs a diversity of resources is deployed bidirectionally between national and international arenas. Steinberg contextualizes his work in Costa Rica and Bolivia, which he claims have been able to develop leading biodiversity policy programs in the last four decades. The book is pitched at a U.S. graduate student level and students of development of environmental movements in Latin America, North-South relations for natural resources management, and conservation policy are likely to find it most insightful.

Much of the book is devoted to understanding the role of “bilateral activists” in the success of the Costa Rican and Bolivian national biodiversity programs. Steinberg defines bilateral activists as those individuals that move and interact at the national and international arenas facilitating resources between these levels. Although known that individual leadership can play an important role for development and democracy in developing countries (see Krishna 2002), Steinberg offers a careful look at how bilateral activists’ leadership plays out at the domestic policy level. Steinberg’s contribution is particularly relevant because the dynamics of domestic policy culture have not received adequate attention in the past. As Steinberg explains, questions related to global environmental politics have been addressed mostly from research traditions characteristic of the international relations literature. Such literature has mostly focused on understanding Western-based transnational environmental institutions or the data they generate, usually from outside the countries of interest. The use of these traditional research strategies are partly explained by the lack of easily available longitudinal data on developing countries of the tropics and because gathering such data requires spending considerable amounts of time in the country to collect it. So, in a welcome break from previous research engaged in main stream comparative politics, Steinberg mixes qualitative and quantitative techniques to gather in-country data, and thus, from the bottom-up, he provides useful insights for bettering the understanding of global environmental issues that is the main theoretical goal for the book.

The second main goal of his work is to instruct “readers concerned with practical problems of tropical conservation and sustainable development,” by increasing their understanding of the role that domestic political processes play in natural resources management. This goal is a challenging undertaking especially if Steinberg hopes to capture the attention of policy makers, managers, or practitioners in developing countries. Presumably the chances of finding this book atop desks in Costa Rica or Bolivia will be highest among mid-level governmental managers or non-governmental practitioners, although increasing the readership will depend of the ability to translate the text into Spanish, reduce its current length, and minimize academic jargon. However, because the book is pitched at a U.S. graduate student level, it would not be surprising that most of its Latin-American readership will likely be among international bilingual students. Some of them will be planning to go back to their home countries to join government or NGO ranks and hopefully, a few of them will be motivated enough by Steinberg’s book and become future bilateral activists in their home countries.

As part of building his general argument on the importance of domestic policy culture and the role of “bilateral activists,” in chapter two, Steinberg addresses to the often stated assertion that poor countries are too busy to care about the environment without the influx of foreign financial incentives. Steinberg rejects these claims by comparing the conditions under which the national parks movement developed in the United States with those established recently in developing countries, showing that at the time the former was less urbanized, its’ people less educated, and with a lower life expectancy than the average developing country today. To demonstrate that significant levels of environmental concern are not the privilege of Northern populations,

Steinberg offers survey data showing that there are no differences between rich and poor countries regarding the importance they give to environmental problems.

Aware of the fact that popular support to environmental and biodiversity conservation issues does not necessarily translate into national policy changes, in chapters three and four, Steinberg provides a macro-historical account of how the environmental movement developed in Costa Rica and Bolivia during the last four decades. The data were gathered from historical materials in government and private archives, letters, news clips, governmental reports, written testimony, personal communications and published accounts. To address the lack of longitudinal public opinion data, Steinberg and eleven assistants conducted a quantitative content analysis of more than 3,000 environmental news stories of leading daily newspapers from 1960 to 1995. The inclusion of a detailed methodological appendix on the content analysis data collection procedures is helpful to understand why and how data coding decisions were made and a great opportunity for students to learn about research methods. The original coding sheets are included in Spanish and English and the sheets with instructions for coders are available through the author upon request.

Chapter five and six constitute the theoretical core of the book. In chapter five Steinberg explains the role that bilateral activists played linking international and domestic resources for environmental policy. According to Steinberg, these activists succeeded attracting international scientific and financial resources to boost conservation research and training to their home country's institutions. At a domestic level, the activists' extensive knowledge and long-term presence in the political arena allowed the mobilization of four types of political resources that Steinberg labeled as: process expertise, social networks, agenda setting and political learning. These elements provided institutions for environmental protection with institutional memory and allowed for long-term planning and implementation despite the shortsightedness of political cycles and high turnover of political appointees in key managerial and administrative posts. To set the stage for chapter 6, Steinberg argues that the "technology of social influence" put into action by bilateral activists could be applied towards "any number of social goals." Why then, he asks, have "politically engaged citizens in Costa Rica and Bolivia" used these resources to advance environmental policies in particular? To answer to this question, chapter 6 explores the origin of national environmental concern, the timing and form of changes in public preferences, international origin and transnational diffusion of policy ideas and the impact of these ideas on state institutions. Most of his content analysis data are discussed here and the answers portray bilateral activists as the catalytic force behind institutional change. These people frequently transmit novel concepts and innovations from abroad to their home societies. As these concepts get assimilated at home by a broad range of political and social players, they are also adapted to fit their own agendas and pet projects. Steinberg argues that at the end these discourses resemble more a blend of domestic and international environmental issues than a broadcast of foreign political debates.

To argue the importance of bilateral activists' role in developing strong domestic biodiversity programs, Steinberg chose to compare two very different countries in Latin America. Steinberg presents Costa Rica as a case study with one of the longest democratic traditions, a majority population of Western European descent, and high per capita income and literacy rates. Bolivia, which has recently emerged from decades of dictatorships,,, has one of the most highly diverse ethnic populations in the Western Hemisphere and one of the lowest income and literacy rates in Latin America.

Based on the explanatory power that Steinberg gives to bilateral activists, future research would benefit from controlling other variables such as country size or bureaucratic complexity. For instance, when bilateral activists in Costa Rica were working to establish two of the most important projects for biodiversity development in the country: the Instituto Nacional de Biodiversidad (National Biodiversity Institute) (INBio) and the All-Taxa Biodiversity Inventory (ATBI), they generated enough foreign attention and financial resources that these bilateral activists were allowed direct and frequent access to the offices of the President. In larger, wealthier and more bureaucratically complex countries bilateral activists may not have similar access or influence.

The larger point is that when consideration is given to increase the number of cases to be analyzed, researchers' abilities to maintain a mixed qualitative and quantitative methodology becomes significantly more complicated. The risk is to leave those type of questions unanswered until enough cases become available in the literature and a large-N meta-analysis study are conducted. However, it was precisely this mixed approach what allowed Steinberg to focus on the

role that bilateral activists play at the domestic policy level. It seems that the type of questions that Steinberg's has been able to address would benefit from a small-N research design were we could continue to benefit from a mixed methodological approach. One exciting possibility is provided by qualitative comparative analysis (QCA) or fuzzy set methodologies (Ragin 2000). These are logical tools based in Boolean algebra suited for the systematic comparison of small-N case studies. Such strategies allow the integration of desirable characteristics of quantitative and qualitative strategies and make it possible to maintaining the richness and depth of information gathered with qualitative approaches while bringing some of the systematic rigor of quantitative ones. In very general terms, by looking at necessary and sufficient conditions it is possible to obtain standard levels of statistical confidence with a relatively small number of cases. Thus for instance, it would be possible to assess the importance of bilateral activists in a small set of countries with varying degrees of success in their environmental policy programs, without losing the depth of information gathered through qualitative means.

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Lives of Dust and Water: An Anthropology of Change and Resistance in Northwestern Mexico, by Cruz-Torres, Maria Luz (2004), University of Arizona Press, 325 pp.

Reviewed by Anton Daughters, Department of Anthropology, University of Arizona, antondaughters@hotmail.com

Maria Luz Cruz-Torres began her fieldwork in southern Sinaloa in the late 1980s. Her long-standing relationship with the residents of two rural communities there, fostered over the past decade-and-a-half through repeated visits, is candidly documented and woven into the text of her broad and ambitious study of the political ecology of the region. It is this first-hand element that gives *Lives of Dust and Water* a refreshingly unselfconscious personal dimension. The book offers not just a critical analysis of Mexican economic policy and the impact of the internationalization of markets, but also very detailed, anecdotal, and personalized narratives that impress upon the reader a flesh-and-blood sense of the struggles undergone by southern Sinaloans in the neoliberal era. In this respect, the book stands as a fine example of mixing analysis with storytelling to make a broader point.

Cruz-Torres describes her study as “the political ecology of human survival in one of the most important ecological regions of Mexico” (6). Specifically, she looks at how global demand for shrimp and agricultural products has affected the communities of El Cerro and Celaya by ushering in, with the support of the Mexican government, large, privately-owned export-oriented companies. The results have been diverse and far-reaching: systematic degradation of the area's natural resources through contamination and overexploitation, diversification of subsistence strategies for local fishermen and farmers, and “the feminization of poverty” (277) as more and more women are forced to rely on wage labor.

Cruz-Torres pays particular attention to what she describes as an escalating cycle of natural resource exploitation. She points out that many locals – once members of the communal ejidos and fishing cooperatives – now form the labor base of commercial agriculture and fishing companies. The inadequate wages paid by these companies have forced cash-strapped workers to seek out alternative means of sustenance. This has inevitably meant growing and catching their own food, ultimately putting further stress on agricultural lands and coastal habitats already buckling from commercial contamination and resource-extraction. Cruz-Torres keenly notes this ill-omened subsistence paradox: “Rural communities such as Celaya and El Cerro must face the contradiction of relying ever more heavily on a natural resource base that is diminishing day by

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day.... Their struggle to survive requires that they engage in practices that accelerate the deterioration of the resources on which they most depend” (91).

Throughout the book, Cruz-Torres situates her observations within a historical context, often moving seamlessly from the chronological to the particular to the general. She provides an excellent overview of the history of land and resource struggles in Mexico – including the emergence of ejidos and fishing cooperatives in the early twentieth century – and connects these to the shifting development strategies of the same period. Of particular note is the “modernist” approach of the Porfirio Díaz dictatorship and its parallels to the current situation of southern Sinaloa. The Porfiriato’s emphasis on an industrial and commercial expansion driven by foreign capital, Cruz-Torres notes, produced “several unequal and contrasting Sinaloas” (43), ultimately fomenting tension and unrest throughout the state and partly contributing to Mexico’s decade of revolutionary violence.

While Cruz-Torres avoids casting long-term predictions, her book implicitly sends out a cautionary note about the future, exhorting the reader to consider the dangers of market-driven natural resource extraction. Beyond this broader theme, though, Cruz-Torres also offers a glimpse of the daily drama of the residents of El Cerro and Celaya. Her stories of love, betrayal, and survival, written in a straightforward and unassuming prose, resonate with the universality of human struggle. It is this last element in particular that elevates *Lives of Dust and Water* from the theoretically interesting and relevant to the universally poignant.

***Political Nature: Environmentalism and the Interpretation of Western Thought*, by John M. Meyer (2001), Cambridge: MIT Press, 210 pages.**

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In this timely book, John Meyer lays the theoretical groundwork for what he terms “political nature”. While sympathetic to the goal of environmentalists who seek a more profound consideration of nature in political decision-making, Meyer rejects their “calls for a new ‘ecological worldview’” (p. 1). Appealing to a vaguely defined concept of nature to direct political and economic actions, Meyer argues, ignores the political judgments involved in determining what is natural, and does not account for variations in interpretation. Instead, Meyer offers his concept of political nature which requires us to examine the factors that link conceptions of nature and social practices. By focusing on experiences of nature as a place, Meyer describes how the notion of political nature emerges from the dialectic between conceptions of nature and of politics. While this is Meyer’s conclusion, most of the book is devoted to detailed analyses of prevalent Western views of the relationship between nature and politics. Through his critique, Meyer shows these views ultimately to be unsatisfactory, though he emphasizes the valuable insights gained from each in the development of his theory.

Meyer begins by outlining the two most common interpretations of the nature-politics relationship in the history of Western thought. The first, which he calls the “dualist account”, treats nature as completely separate from human culture, including politics. The second account is referred to as “derivative” in that normative theories about ideal political structures and practices are derived from theories of nature. Meyer’s criticism of both the dualist and derivative interpretations is that they do not consider how the conceptions of nature and politics mutually influence each other. Meyer discusses these limitations while examining the work of contemporary environmentalist thinkers as well as the writings of prominent philosophers that are cited as the original proponents of these worldviews. As he explores the work of each thinker, Meyer uses an interpretive approach to find evidence of a dualist or derivative orientation, even if this was not an explicit intention of the writer. This allows him to identify patterns throughout history and to find links between what are usually taken to be theoretically opposed perspectives.

The analysis starts in the second chapter with arguments put forth by environmentalists such as Aldo Leopold, Lynn White, Robyn Eckersley and Murray Bookchin, who hold an ecological view of nature as central to the desired worldview from which social and political order should be derived. Despite their apparently dissimilar approaches, Meyer shows them all to share the derivative interpretation of the nature-politics relationship, which suggests that environmental

problems can be solved if an ecological worldview becomes dominant in politics. His criticism of these theorists is that “they seriously overestimate the importance of transforming our worldview” (p. 34) while ignoring the political processes involved in defining nature and constructing a worldview.

In the third chapter, Meyer describes in more detail how environmentalists have looked to the history of Western philosophy to find the foundations of the ecologically destructive worldview that is presently dominant. Support for both the dualist and derivative interpretations can be found in this historical approach to Western thought, but Meyer concludes that each is inadequate in explaining the current state of affairs. He points out that multiple conceptions of nature do exist within society as do multiple conceptions of politics. In order to change political and social practices with regard to human-environment interactions, more than just a change of worldview is required.

Chapters 4 and 5 are at the theoretical heart of the book. Meyer closely examines the philosophy of Thomas Hobbes in the fourth chapter and then of Aristotle in the fifth. These philosophers were selected because Meyer considers their conceptions of nature and politics to be the most influential on present day worldviews. His interpretive approach concentrates on writings in which the topics of politics and nature are addressed most fully. For Hobbes, these include *De Corpore* and *Leviathan*, in which a mechanistic view of nature is prominent. For Aristotle, he refers largely to *Physics* and *Politics*, in which a teleological nature is best articulated. Both chapters have a similar structure: first a discussion of how nature and politics are defined by the philosopher, then a systematic analysis of how the ideas can be interpreted within the dualist and derivative frameworks, with comments on contradictions and dilemmas, and finally a concluding discussion of how each is really setting up a dialectic between nature and politics, albeit unintentionally.

In the last section of the book, Meyer develops his own theory in which he builds on the insights offered by the dualist and derivative interpretations. He explores “the significance of one’s experience and relationship to place— where we live, work, and play— as both a product of [the interaction between our conceptions of nature and politics] and a key influence on our understanding of what is politically necessary and appropriate” (p. 18). Meyer synthesizes the philosophies of Hobbes and Aristotle, noting that both conceived of politics as belonging to a category broadly defined as being within the realm of the natural and that nature is constitutive of humanity. In other words, politics is a human activity and humans are natural beings; therefore, politics is natural. Meyer does not take the next step, however, and avoids claiming that politics is derived from nature. Instead, he describes politics as being largely a matter of defining our relationship to the natural physical world. The product of this dialectic relationship is Meyer’s “political nature.”

In the final chapter, Meyer examines three cases of environmental movements to illustrate the notion of place as a political environment. He first looks at the environmental justice movement in the United States, where people are trying to protect the places they live from pollutants. He then compares this to third world ecological resistance movements, noting how ecological and economic interests are inseparable. The last case is the land rights movement in the American west where the focus on the livelihood of ranchers, miners and loggers stems from connections to place and environment. Common to all three political struggles is the centrality of human-environment relationship.

The strength of this book is Meyer’s solid understanding of the philosophical writings he analyzes and his logical and systematic critique. He provides a clear, point by point evaluation of each argument and its implications for environmentalist aims to change social and political practices. Rather than simply finding holes in the dualist and derivative theories, Meyer acknowledges their contributions and takes their deficiencies as opportunities to seek a more satisfying alternative. The conclusion that politics must be accounted for is drawn from several angles and is well supported.

Undoubtedly, this is a book targeted for an academic audience. Meyer assumes that readers have a background knowledge of both contemporary environmentalist literature and philosophy. In order to truly appreciate the new perspective he is bringing to the issues and the significance of his arguments, one must already be familiar with the work of Hobbes and Aristotle. While there are some elaborated comments along with suggestions for further reading in the endnotes for each chapter, a reader who is new to philosophy may be overwhelmed by the chapters on Hobbes and Aristotle where the depth of detail and the sophistication of Meyer’s interpretations require some

knowledge of the original texts. For example, the idea of nature as mechanistic, so central to his interpretation of Hobbes, is never fully explained by Meyer.

For readers who are well acquainted with the theories and writings being analyzed, Meyer's book offers a thoughtful look at environmentalism, philosophy, politics and discourse. The extensive bibliography contains a wide range of works from the diverse areas of environmentalist theory, cultural ecology, and philosophy— useful to those interested in studying the history and development of these subjects. Some readers may be disappointed that the last chapter is so short. After following Meyer's carefully developed argument for "political nature" we are given only the briefest opportunity to see what such an analysis might look like when applied to contemporary issues. The three cases altogether are given only eight pages. If we accept Meyer's thesis that a deeper understanding of environmental conflicts requires an examination of the conceptions of politics and nature, then surely more than a couple of pages is needed for an adequate treatment, especially if it is to serve as an example of his approach.

In sum, Meyer's concept of political nature is a call to keep open the debates about how to define key concepts for environmental issues while giving attention to the fact that multiple interpretations exist, and striving to understand the ways that some of these are more privileged than others in a given socio-political context. Meyer points to experiences of place as the heart of political nature, reminding us that decisions about how we interact with our environments are inherently political and that political decisions are also embedded in nature and our conceptions of it. This book makes a valuable contribution to the political ecology literature while offering relevant theoretical and analytical approaches to the disciplines of political science, anthropology, philosophy and environmental studies.

***Political Ecology and the Role of Water: Environment, Society and Economy in Northern Yemen*, by Lichtenthaler, Gerhard (2003). Aldershot: Ashgate.**

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Intimate local knowledge can be a powerful yardstick of grand theory and the efficacy of broad policy prescriptions. Lichtenthaler's rich knowledge and long association with the region of his field study, the Sa'dah basin in northern Yemen, allows him to easily see through many of the accepted truths of water resource management in the developing world. But having deconstructed conventional wisdom, Lichtenthaler is left a little puzzled and clearly concerned about Sa'dah's future. He leaves us with just a prayer and poem for the future.

In *Political Ecology and the Role of Water*, Lichtenthaler searches for solutions to what seems a hopeless situation. Groundwater in the Sa'dah basin of northern Yemen is dropping precipitously and there is no plausible solution in sight. Conventional wisdom offers little recourse, or worse, contributes to the problem. Privatization of water resources, Garret Hardin's solution to his 'tragedy of the commons,' was adopted indigenously when new pumping technology offered access to abundant groundwater. Now, however, what is rational for the individual actor actually inhibits collective regulation of ground water abstraction. Worse, privatization of water is now contributing to the marginalization of smaller farmers who are unable to keep pace with the costs of constantly deeper drilling for the falling water table. Similarly, the international development agencies' political correct "decentralized and locally designed" projects that are "culturally sensitive" to local tradition are not very helpful in Sa'dah because local society itself is the source of much of the problem. Even the modernizing state cannot provide the social framework necessary for an effective adaptive strategy because state behavior also contributes significantly to the current problem. And finally, socio-economic development that would transfer water to more efficient alternative uses in industries is a remote possibility in Sa'dah. Left with little else, Lichtenthaler hopes that lessons are being learned and that local tribal society will generate institutional means to collectively manage water in a socially sustainable manner, these latter recorded and transmitted through popular poetry and Islamic reinterpretation. Recent news from Sa'dah is not good, however; local society was ripped asunder by three months of armed conflict during the summer of 2004 between rebels and government forces.

In the first chapter Lichtenthaler introduces the study by focusing our attention on the field of political ecology and the Sa'dah basin's "politicized" environment. Political ecology reinserts politics into what is often a socially sanitized technical field, such as in the policy prescriptions of the World Bank (whose charter forbids it from discussing politics). Water management is not simply a technical question governing the physics of natural resources or even a straightforward economic question of the rational and efficient allocation of resources between uses and between users, but rather water management, as all resource management, is inseparable from questions of power and politics. Thus Lichtenthaler in Sa'dah "investigates the extent to which environmental degradation, and especially the unsustainable mining of the Sa'dah basin's groundwater resources.....can be explained as the outcome of unequal power relations, political interests, and the changing ability of actors to control or resist other actors" (p.2). Sa'dah's environment is highly "politicized" says Lichtenthaler and following Bryant and Bailey (Bryant and Bailey 1997), "power is at the heart of this politicized environment." Lichtenthaler attributes much of the problem in Sa'dah to this "politicized" environment, but Lichtenthaler does not distinguish here between a "normal" political ecology in which power relations are reflected in resource policy and management practices and the "highly politicized environment" of Sa'dah. What distinguishes Sa'dah is that, in local parlance, "the powerful eat the weak," a fact that Lichtenthaler seems to attribute to tribal social relations and religious fatalism (p.23), but is actually a widespread reality in tribal and non-tribal, religious and secular Yemen. Sa'dah and Yemen's "highly politicized environment" is perhaps a result of rapid social transition, but it is a transition in which short term political interests brazenly trump social development. It is the prominence of raw power unmitigated by institutions charged with long term social sustainability that Lichtenthaler calls Sa'dah's "highly politicized environment," and that leaves many investigators inside and outside of Yemen shaking their heads in disbelief.

In the second chapter Lichtenthaler builds the conceptual framework (as PhD students are instructed to do) around a collection of concepts loosely glued together to explain Sa'dah basin's predicament: Turton and Ohlsson's concept of adaptive capacity (Turton and Ohlsson 1999), Allan and Karshenas' (Allan and Karshenas 1996) link between socio-economic development and natural resource reconstruction, virtual water, food security and finally, resource capture. In the best of worlds, initial natural resource extraction leads to depletion or "first order" scarcity but then both increased socio-economic development and society's adaptive capacity allow the establishment of forms of resource extraction and use that are sustainable. Socio-economic development enables society to develop more efficient uses of resources through an increase in technical capacity and/or a reallocation of resources to alternate, more efficient uses such as in industry, for example. But these efficiencies are only achieved if society possesses the social means to effect such changes, or "adaptive capacity." Lichtenthaler argues that society in the Sa'dah basin lacks this capacity and thus suffers not only from the "first order" scarcity of diminishing water supplies but also the more serious "second order" scarcity of social means to address environmental stress. The difficulty is that in the "politicized environment" of Sa'dah powerful local actors, tribal sheikhs, are subsidized by the Yemeni or Saudi states and therefore they have no incentive to introduce economic efficiencies. Incentives are further distorted by local social premiums placed on particularly inefficient citrus crops. A further and perhaps more serious difficulty is what Lichtenthaler describes as "resource capture" in which these same "powerful actors and/or social groups seek to gain possession and control over natural resources" (p.20). Resource capture "destroys the essential elements needed for co-operation, willingness, trust and legitimacy" and "undermines....a community's adaptive capacity" (p.20). Thus the Sa'dah case confirms that the cause of environmental degradation is not a Malthusian nightmare or common property rights but rather, as political ecologists claim, the workings of politics on patterns of natural resource use.

Chapter three is a detailed examination of the field site in which we get to know the physical and human characteristics of the Sa'dah basin. We learn first that the basin is an arid region whose topography and geological structure favor groundwater recharge over surface runoff. Prior to the development of groundwater resources in the 1970's most of the basin depended upon grazing and spate irrigation, small agricultural plots strategically situated to capture what little runoff was available. Social relations recognized the rights of those small agricultural plots to large catchment areas and thus became a barrier to the development of groundwater when deep drilling technology became available. Surface water runoff to "downstream" plots would be blocked by the development of lands using groundwater. But a key ruling by a religious scholar

and judge allowed a solution to compensate “downstream” plots with grazing land and thereby provide the legal framework by which groundwater exploitation exploded in the 1970s and 1980s. In chapter three we also learn of the complex tribal relations that govern the Sa’dah basin, particularly the central divide between Hashid and Bakil, Hashid more closely aligned with the state and Bakil less so, and that Bakili tribes predominate in the basin. We also learn of the changing political fortunes of tribal groups in Sa’dah, principally the decline of those that fought for the royalists and retention of the Imam and the rise of those that supported the establishment of the republic between 1962 and 1970. From this we conclude that tribal society is fractured and divided and that tensions are exacerbated when tribal divisions overlap disputes over the control of water resources such as runoff for spate irrigation. Finally we meet key social groups and actors in the region, principally tribal sheiks and merchants. What is significant in their stories is the use of power to acquire land and water and the fact that local power is often closely related to relationship with the Yemeni or the Saudi state. “Whereas the tribal shaykh’s ability to mediate and solve conflicts used to rest primarily on his social standing and on his knowledge of customary law, his political influence and power at the national level now increasingly determine the outcome of such conflicts” (p.74).

In chapter four we find the factors driving the tremendous expansion of groundwater use in the 1970s and 1980s. These were first the explosion of migration to Saudi Arabia when the oil boom there created vast employment opportunities and then the resulting inflow of worker remittances along with technical expertise developed in Saudi Arabia. Then ground water development expanded when it was realized that tribal tensions were lessened when individuals could control their own groundwater resources as opposed to relying upon the water flowing over the land of others, a measure of autonomy prized in tribal society. Groundwater development was also spurred by fears of various land grabs by either powerful sheikhs within the valley, rival tribal groups, or the Yemeni government itself. Groundwater development established rights to property that were more difficult to contest than the undeveloped “white” land used for grazing. Yemeni trade policy in the form of import bans on citrus fruit also stimulated development of water intense citrus groves. The Yemeni government sought to stimulate higher value added agriculture through an import substitution measure banning imports of fruit from Saudi Arabia. This spurred citrus development and increased water demand.

Chapter five surveys the socio-economic factors that shape farmers’ choice of crops in Sa’dah. Here Lichtenthaler argues that cultural and sociological factors are important determinants of crop choice and economic factors alone cannot explain crop choices and water usage. First, Yemen’s pervasive social insecurity favors autonomy and self-sufficiency, values also favored by tribal mores. Hence, wheat is often grown when purely economic factors might favor importation of wheat. Similarly, local preferences for livestock production push farmers to cultivate fodder crops such as alfalfa and sorghum. Saudi Arabian demand for meat and the local tradition of sacrificing an animal on holidays and special occasions drives up prices for local livestock. Yemeni trade policy also favors water consuming fruit trees. Import restrictions and subsidies to powerful local sheikhs favor citrus and other cash crop production. Alone, local production of fruit trees may not be detrimental, but high rates of evapotranspiration in a water deficit region commonly leads to the accumulation of salt deposits in soils. Farmers therefore favor flood basin irrigation that washes away salts over more water efficient methods such as drip irrigation. Lichtenthaler argues here in the tradition of cognitive geography that human behavior is based upon environmental perception and that cultural, political and social perceptions “make and unmake a water security issue” (p. 103).

Finally chapter six argues through a series of case examples that while individual farmers are innovative and open to new methods to reduce water demand and use water more effectively, social logic inhibits collective solutions to the over-abstraction of water. What Lichtenthaler calls “resource capture” or the accumulation of resources by some at the expense of others creates an atmosphere of mistrust that inhibits collective solutions. Tribal frictions already present in Yemeni society are exacerbated by the accumulation of land by politically connected few at the expense of common tribesmen who do not have the means to drill deeper to chase the falling water table. “The problem is that many of those representing the government, and those associated with it, own large farms themselves, which in turn reduces their credibility” (p. 219). The ability of the modern state to enforce a socially stable regulatory regime is thereby reduced.

The final short chapter summarized the arguments made in previous chapters and quickly concludes with the contradictory claim that “...while there is little evidence of any form of

sustainable development the Sa'dah study does reveal potential to foster adaptive capacity" (p. 225) Rather than accept the strong evidence presented in the case study that a 'second order' scarcity of social adaptive capacity exists in Sa'dah, Lichtenthaler relies upon a prayer and poem for hope in Sa'dah. Tribal communities are beginning to realize that the "sea" is not limitless and they are engaging in collective management strategies that might possibly be communicated to other communities through poems. This in spite of plenty of contrary evidence presented in chapters two, three and six that local tribal society is rife with tensions that prevent any such collective strategy. The revival of Zaydi scholarship gives Lichtenthaler a prayer of hope that new interpretations of Islam might foster collective social mores and institutions to manage water demand and abstraction. However, Zaydi scholarship, or more precisely the politics of the Zaydi revival exploded in Sa'dah in the summer of 2004, dashing Lichtenthaler's hope that a prayer might save Sa'dah's water. Government troops battled for more than three months to destroy the military capabilities of one particular Zaydi leader, al-Huthi, with very heavy casualties inflicted on both sides.

The politics of the al-Huthi rebellion point to a difficulty in Lichtenthaler's argument. The state, says the author, is perceived as corrupt both because of its relationship with the powerful in Sa'dah's local society and because of the general perception throughout Yemen that government officials look to further their own personal interests rather than any collective good. But as the author points out, the division between local society and the state has blurred. Local sheikhs depend now upon their relations with the state elite or positions in the state military for their source of authority rather than on their ability to effectively mediate local disputes as in the past. The state leadership, in turn, uses divisions in local society, particularly in tribal areas, to its advantage. al-Huthi is a good example. In the complicated politics of Yemen, al-Huthi was used by the president as a Zaidi counterforce to the president's enemies in the Zaidi political party, Hizb al-Haq. Hizb al-Haq had supported the opposition to the president prior to the civil war in 1994. After the war al-Huthi became a member of parliament and was given state resources to bolster his position in local society. However, when al-Huthi's Zaidi revival developed into a powerful political and military force, the national leadership decided it was time to weaken al-Huthi. al-Huthi's public image suddenly flip flopped from ally to a terrorist outpost of the Iranian Hizballah (الناس 2004). The state sent the military to destroy al-Huthi's organization and three months of pitched war ensued. Thus if local society and the state are inextricably intertwined then water resource management will only be effective when coordinated both on the national and on the local scales. The local and the national cannot be easily separated and currently both contribute to the atmosphere of insecurity and distrust that Lichtenthaler cites as a major roadblock to effective water resource management. Perhaps the author's intimate knowledge of local society has led him to privilege the local over the wider geographic scale of the national state, as local tribal actors tend to do in Yemen.

Political Ecology and the Role of Water is an interesting case study that raises insightful questions about conventional wisdom in the political ecology of resource management. Graduate students and researchers in the field of water resource management will find Lichtenthaler's PhD thesis stimulating reading, though readers may need some background reading in the general history and politics of Yemen in order to appreciate the nuances of the case study.

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The Pride of Place: Local Memories and Political Culture in Nineteenth-Century France, Gerson, Stéphane (2003) Ithaca: Cornell University Press.

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This is a dense, difficult, yet fascinating book that will appeal to readers with a strong background in French history and scholars interested in the relationship between civil society and the state. It outlines what Gerson terms a “cult of local memories,” a movement that swept through France in the nineteenth century. This public effort of “unprecedented magnitude” (p. 3) involved the resuscitation of the local past and attachment to individual localities, reflecting anxieties about France’s future in the tumultuous period following the French Revolution. While a previous wave of French historiography represented nineteenth-century nation-building and modernization as a shift away from ties to local regions, with their distinct customs, languages and lifeways, towards national identification through relentless centralization, Gerson’s book joins the next wave of works that challenge this view, and shows instead how “the local and modernity were interlaced rather than inimical in France” (p. 2). Love of the local went hand in hand with nation-building, he argues, and the “cult of local memories” even contributed to processes typically associated with modernity, such as the rise of science, and increased civic participation.

This is a work of remarkable scholarship that, strangely, does not adequately engage with the vast theoretical literature on social memory, leading to some notable omissions. Gerson never explains why he calls this phenomenon a cult of local memories, for instance, when much of what he describes involved historical research and writing. The book is primarily descriptive, yet may be sufficiently rich without another layer of analysis, for the diversity of activities he describes that comprise the “field of local memories” is astounding: monographs on local history were published by the hundreds, and scholars put forth dictionaries, inventories of archaeological sites, journals, and developed local learned societies, contests, and historical pageants. While some of these efforts were promoted or sponsored by governmental agencies such as the Comité des Travaux Historiques, most were carried out in the provinces by local elites: almost exclusively men, members of the landed aristocracy, local bourgeoisie (members of the liberal professions, public servants, factory owners and merchants), and the clergy. They organized themselves into an array of scientific and scholarly organizations that met regularly and participated in wider congresses. The author focuses exclusively on the activities of these elites and national and local state representatives and does not explore how these efforts may have been received by non-elite locals. He outlines this “cult” on a national scale, spotlighting activities in the department of the Nord.

The periodicity of this book presumably follows that of the movement itself, but, as a result, the decades of concern here (1820s to 1880s) straddle several political regimes. This is refreshing, and certainly good historical practice, but can lead to confusion to all but those readers well versed in French history. During the “Restoration” (1814-1830), France was ruled by a Bourbon king, then Napoleon I, followed by the Bourbons and then finally ultraroyalists under Charles X until the July Revolution of 1830. The “July monarchy” lasted until the “February” Revolution of 1848. A republic followed with Louis Napoleon III as president, who led a coup in 1851, and ruled as emperor until 1870, when the Third Republic was established. Gerson argues for a certain continuity across this period, noting for instance that many key individuals engaged in the state’s efforts to promote local historical research survived these political shifts or reemerged in subsequent administrations, but it is unclear to this reader just how we should conceptualize “the state” across so many major political breaks. It is also not always clear what the ramifications of these many changes in government were either on the local elites engaged in the “cult,” or on officials sponsoring them.

Perhaps in part due to so many regime changes, the motivations of the participants across this period were multiple and often contradictory. In the broadest sense, this “cult” can be viewed as a response to the French Revolution. During the Revolution, there was a considerable destruction of noble and church property, and a concern arose regarding the need to preserve those properties remaining and to inventory the nation’s new patrimony, including buildings, manuscripts, statues

and archaeological ruins. The decades following were of considerable upheaval, and many French elites by the 1830s and 40s viewed a return to the local as a means of finding meaning and of resolving disharmony. They hoped “to rebuild what had been toppled but also to create something new” (p. 87). In addition, France was experiencing rapid social and economic change, with urbanization, industrialization, the inexorable linkage of previously distant French provinces with the expanding railroad. Many participants felt the need to preserve local memories, which they considered in danger of vanishing forever. Some elites who had held hereditary positions or who experienced diminished access to political power may have also wanted a refuge from politics or a means of regaining some power through their involvement in learned societies. They may have used their involvement in these learned societies to serve hidden political agendas, to promote decentralization, or to make a stand against the capital. Finally, elites interested in fostering ties to the region among their subordinates may have been motivated by a desire to encourage peasants to remain on the land and workers to stay on the job, and thus retard mass flight to the capital or other large urban areas.

The focus of chapter three is on the strong pedagogical angle of the “cult of local memories.” For many elites, knowledge of local history was a pedagogical enterprise, a way to foster self-understanding, unity, and, ultimately, civic participation among the residents of their region. Gerson shows that this view was bolstered by the Enlightenment faith in the perfectibility of humans, along with a related view that historical knowledge held transformative powers and could improve people morally. Elites consciously sought to create lasting memories by encouraging people to experience history with all of their senses through the development of elaborate historical pageants, such as the bizarre and wonderful “festival of the Incas,” a fascinating facet of this “cult” discussed in greater detail in chapter 5. Scholars of the Third Republic will be particularly interested in Gerson’s discussion of republican pedagogies of place, which clearly demonstrates continuities with similar efforts of the preceding administrations.

Participants in this “cult” faced difficulties integrating the local with the national: the local was difficult to manage, and too great a focus on local memories could deflect attention away from the nation. State organizations such as the CTH were most comfortable promoting projects that tied local memories into a national framework within a uniform grid. Yet local places and histories were unique, and any attempt to generate knowledge systematically risked distorting local specificities. Most interesting were the cases in which local organizations criticized the CTH, as in its creation of a geographical dictionary of France. Local scholars complained that since each region of France had its own special and unique heritages, it did not make sense for officials to send them identical questionnaires (p. 270). Societies sometimes refused to follow ministerial guidelines, and submitted entries that were subsequently rejected due to their inclusion of narratives viewed by officials as of purely local interest.

Tensions integrating the local with the national were faced not only in the nineteenth century, but in this book as well, reflecting the difficulty in focusing on two levels of analysis simultaneously. While Gerson highlights the activities in the Nord, and discusses events, individual personalities and disputes from key towns in this department, he also draws much wider conclusions on a national level, and we sometimes move uneasily between regional and national concerns. At times further knowledge of local issues is needed to illuminate the discussion at hand. For instance, when he describes the creation of a great room in the Montargis City Hall commemorating local celebrities, he states that the town’s 1,500 indigents betrayed an “unmistakable ‘social problem’” (p. 105). To the casual reader, this is an amazing number of indigents for a town of under 8,000 in the 1840s (p. 104) and requires further explication. The reader has no way of knowing if this high level of indigence was a temporary response to the national economic crisis of 1846-7, or if it was a long-lasting problem of local origins. Gerson’s discussion here would have been enhanced with more information on local social, political and economic conditions.

Perhaps the most important sections of this book are those in which Gerson focuses on the relationship between local elites and state officials, revealing the changing and blurry boundary between state and civil society in France during this time. Before the Third Republic, the state played very little role in the pedagogical realm, and yet such organizations as the Comité des Travaux Historiques were engaged in developing cultural policies and promoting a certain kind of local knowledge, as Gerson outlines in chapter 4, “Local Memories and the Governing of the Minds.” Local officials established archaeological organizations, and the CTH played important roles, formulating questionnaires and deciding which elites would receive funding or prizes. The

dance between centralization and autonomy is especially nicely drawn here. State officials wanted to direct elites into local research, but saw that autonomy was one of the principal strengths of these various societies, and tried to avoid intervening too much or drawing them too closely into one centralized administration. Yet these same officials needed to develop institutional structures to better communicate with the array of learned societies in the hinterlands, to promote research of a consistent quality, and to encourage peer-review. Some administrators also viewed the local as potentially dangerous, and wanted to keep an eye on local societies, playing an indirect or “behind the scenes” role to prevent the fostering of splinter political movements. As Gerson outlines, several conceptions of civil society were held at this time, ranging from those of de Tocqueville, who opposed centralized state power and argued for the development of a rich network of local voluntary associations, to the Hegelian understanding of civil society as potentially divisive. The “official cult of local memories” had the daunting task of integrating these incompatible models, Gerson argues, and often zigzagged between them. Ambivalence regarding civil society led to an uneven and sometimes faltering promotion of local historical efforts. Over time, both state and civil society continued to expand in this domain, and their connections to each other multiplied. In the process, French identity was not produced solely in the capital, or only in the provinces, but “articulated at the juncture of Paris and the provinces, of state and civil society” (p. 278).

In sum, this is a work of remarkable scholarship that attempts to unite several political breaks and local and national units of analysis to reveal a nineteenth-century fascination with the local and local pasts that, perhaps contrary to our expectations, was actually encouraged by the state. Historians of France will find that this work provides a refreshing new look at this period, and scholars of contemporary French society intrigued by today’s “return to the local” will enjoy delving into a detailed examination of quite similar trends of quite a different era.

***Regulating Eden: The Nature of Order in North American Parks*, by Joe Hermer (2002), Toronto: University of Toronto Press, 150 pp.**

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Edward Abbey once wrote that “the itch for naming things is almost as bad as the itch for possessing things.” In *Regulating Eden*, Joe Hermer trains a cooler, theoretical lens on the same issues of constraints on human freedom and commoditization of the land that fueled Abbey’s scratchy rage. Hermer’s provocative book argues not only that places thought of as “natural” or “wild” are in fact constituted by the most human means, but that parks in particular represent sites within which the authority and power that maintain order in the larger society are replicated and reinforced. It investigates the consequences of “the itch for naming things” by examining how the classification and ordering of space, along with policies governing “appropriate” visitor behavior, are instruments of moral regulation of a population beyond park boundaries.

Hermer draws the reader in with an arresting anecdote from his father’s experience bundling firewood for campers in a Canadian provincial park. When one particularly choosy customer demanded wood “without knots,” the woodman replied, motioning to the branches above their head, “If we had wood without knots, where would all the little birds sit?” (xii). Hermer wields this metaphor to powerful effect. He depicts national, state, and provincial parks as attempts to manufacture sanitized, homogenous versions of the natural world, a forest of “knotless trees” and safe Kodak viewpoints (often with disastrous consequences for ecosystems), even while the discourse of park regulations invokes imagery of a frightening or pristine wilderness in order to ensure voluntary compliance with ideals of patriarchy, conformity, and moral “hygiene”. Hermer sums up these two related theses of his book when he writes, “parks do not simply ‘protect’ nature, as we are so often educated to believe, but rather manufacture an experience of wildness and disorder which is not only congruent with widespread practices of environmental toxification, but also plays a central role in constructing particular social relations as ‘natural’ and ‘normal.’”

The social construction of nature and the policing of ‘civilized’ social relations are intricately linked” (5).

Hermer coins the term “emparkment” to describe the medium through which this discursive power operates, defining it as a set of practices that enclose space under legal authority, and within which modified and highly-ordered landscapes are presented as natural (14). He draws on Foucault to describe emparkment as forms of representational technology (park signs about natural hazards, subdivision-like camping areas, carefully-designated routes and trails, rules about fire and alcohol use) that function to ensure compliance with societal rules through a park visitor’s self-regulation of his or her conduct. His opening chapter explores the work of various theorists in the “sociology of governance” movement and tends to abstraction, although it contains interesting historical sidenotes about how both the enclosures movement in 18th century England and the establishment of African game reserves for hunting by British colonial elite (both examples of “emparkment”) were violent exercises in domination by wealthy landowners that displaced and impoverished local populations (15, 19). Subsequent chapters delve deeply into readable analyses of regulations and policies, including illustrated examples of park signs and educational materials, and a particularly amusing section (91-95) on the development of Smokey the Bear as a symbol of a constructed version of the wilderness and of visitor self-policing (“Only you can prevent forest fires...”). The composite text of these chapters is a convincing argument that North American parks are “a highly sanitized landscape that is intensely ordered, that tells people where to go, what to do, and how long to do it” (45).

Despite these strengths, the work falters on several points, particularly when it ventures over its scholarly head into “the legislative missions of parks and the often flawed character of the park rangers who carry out such missions” (22). Much of the regulation and order that Hermer disparages is in fact necessary to constrain activities that impair the functioning of ecosystems or degrade historically-significant places by virtually anyone’s constructed standard. The erosion and noise of off-road vehicles in areas of high biological diversity or the for-profit excavation of ceramics and human remains from archaeological sites are examples of clear-cut degradation that regulatory park policies inhibit and reduce. Having been a park warden in Canada, Hermer is almost certainly aware of the utility of many of the regulations that he disparages, but he inexplicably refuses to explore this contradiction. He critiques Garrett Hardin’s “tragedy of the commons” arguments as justifying the implementation of excessive regulation by park managers (116), but the population of visitors to national and state parks is transient and unable to develop the social ties and reciprocal relationships that often help to regulate the use of common-pool resources by individuals in more stable, integrated communities. Hermer argues convincingly that North American parks are intensely ordered landscapes, and his point that the classification and ordering of space in parks replicates and reinforces patterns of social control in the larger society is well taken, but he does not balance his analysis by considering how some degree of order may be necessary. There is good reason not to permit overnight camping in canyons where peregrine falcons nest, to restrict people from climbing over the fragile masonry of cliff dwellings, or to eject a drunk and belligerent person from a child-oriented campfire talk about bears – as a park ranger himself, the reviewer has found it necessary to do all three within the past month. Hermer is correct in pointing out that some regulations (he offers the interesting example of inflexible definitions of a traditional, heterosexual “family” with regards to campsite fees) are unnecessarily restrictive and based more on the moral perspectives of park administrators than on sound management of park resources. Nevertheless, refusing to admit that some regulations are beneficial strikes the reader as a glaring omission.

Another blind spot in Hermer’s analysis merits attention. His theoretical deliberations on the “sociology of governance” are interesting but are highlighted to the exclusion of other, more obvious explanations for (and constraints on) the behavior of both park administrators and the lower-level employees that actually enforce the regulations. Given that Hermer has worked as a park warden himself, it is surprising that he chooses to ignore these less abstract considerations related to economics and organizational politics that comprise much of the everyday, when-the-visitors-aren’t-around conversations of park employees. The author of this review has worked as a seasonal employee in four different National Parks and Monuments over the past ten years, and can personally testify to the importance of professional ambition and fears of liability among both the temporary and permanent staffs in shaping both park policy and its implementation. This is not to say that park employees are not dedicated to their work. In fact, most employees with whom the reviewer has worked could earn higher salaries in the private sector, but remain with the

Park Service because of personal beliefs in the importance of their work -- be it monitoring migratory bird populations, safeguarding archaeological sites, or educating schoolchildren about wildlife biology. Nevertheless, particularly among upper-level administrators, fears of legal culpability and the strategies of organizational politics shape policy decisions as much as empirically-based resource management data. The fire-use restrictions implemented throughout the U.S. Southwest at the time of this writing are a case in point. Park and forest administrators tend to adopt conservative, restrictive policies on visitor use so as not to jeopardize their climb up the career ladder to larger parks and higher pay-scale positions, yet simultaneously feel pressure from park visitors seeking recreational activities and from local businesses whose incomes depend on those visitors' dollars.

It is important to note that the author does not contend that these methods of social control are consciously employed by park employees. For Hermer (drawing on Foucault), moral regulation functions through the representational technologies of emparkment that operate in the subtle realm of discourse. But while Hermer's elegant theoretical musings make clear that while park policies may function to reinforce dominant conceptions of nature and morality, he overlooks that these policies generally result directly from the more prosaic political and economic relations that park rangers and administrators must contend with on a daily basis. From the book the reader is left to conclude that rangers on the ground have no individual agency whatsoever and simply blindly enforce the regulations that Hermer disparages. For example, his statement that preservation and public use objectives are "unproblematically posed as being complementary and interdependent" in park mission statements (31) obscures the contentious debates and struggles in which resource management decisions (To allow snowmobiles in Yellowstone's backcountry? To close Zion's main canyon to vehicles? To permit elk hunting in the Valles Caldera National Preserve?) are shaped. In another passage, Hermer rails against policies that empower rangers to prosecute a visitor for breaking a branch for a marshmallow stick but permit logging companies to carry out extensive cutting operations within the same park (79). Although he conflates Forest Service and Bureau of Land Management lands (where such logging operations are common) with National Parks (where they are not), his point that the policy might permit such an illogical (from a resource protection standpoint) situation on some "protected" lands is valid. However, even though in his introduction he explicitly rejects what he terms to be a "positivist" conception of law as a sterile text divorced from social realities (20) in favor of a view of law as created through the discourse and practice of everyday governance, throughout the rest of the book he fails to acknowledge that rangers exercise discretion and intellect in determining how park policies are to be implemented. This reviewer has met very few fellow rangers who would throw the book at a camper for snapping a stick to toast a marshmallow. Rangers are not illiterate automatons. Most of this writer's coworkers have read Roderick Nash and *The Monkey Wrench Gang* and are not nearly as enamored of social control as the author might have the reader believe. If homogenous, sanitized Order was truly their deity, they would have been CPAs or corporate lawyers.

Finally, Hermer's concluding chapter also belabors a somewhat exaggerated point. He argues that the official version of nature represented by parks creates the fallacy that the only valuable ecological systems are those that exist in park form, although the greatest threats to the biosphere cannot be solved by protection of resources within the limited landscapes of parks (115-116). Hermer portrays parks as a false atonement for our larger environmental sins, and argues that their existence distracts attention from larger issues such as atmospheric pollution, global warming, and degradation of the ozone layer. While readers will certainly feel the urge to thank the author for blowing the lid off these hitherto-unknown threats from which they were distracted by the pretty parks, it does seem rather shortsighted not to acknowledge the political struggles of millions of people in the global environmental movement who are all too aware of massive desertification of agricultural lands, rapidly decreasing genetic diversity, and the vulnerability of economically marginalized populations to natural disasters and epidemic diseases. Moreover, visits to national and state parks provide the initial spark of interest for many children to develop a wilderness or environmental ethic later in life.

As a working park ranger, this reviewer does not agree with all of Hermer's points. Nevertheless, Hermer has written a provocative book important to anyone interested in issues of social ordering of space and landscapes, contested notions of nature and wilderness, and the shortcomings of environmental education. *Regulating Eden* seeks to spark debate about how the creation and operation of parks reinforce relationships of power, and to that end achieves its goal admirably. Like a good park ranger program (ironically enough), this slim volume succeeds not

because it overwhelms its audience with information, but because it challenges the reader to think in novel directions – in this case to question previous assumptions about the mission and functions of parks in our society.

***Risk Regulation at Risk: Restoring a Pragmatic Approach* by S.A. Shapiro and R. L. Glicksman. Stanford, CA: Stanford University Press, (2003), xii + 265pp.**

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This work offers a defense of risk regulation in the U.S. against a rising chorus of critiques from neo-realists who tout cost-benefit approaches as the best way to balance the wide array of interests and stakeholders in regulation of risk industries and polluters. While the focus is nearly entirely on legal aspects of risk regulation, the authors do attempt to ground their approach in pragmatic principles. Pragmatic critique is used as both a partial foundational philosophy for risk regulation and a methodological basis for a series of reforms of risk regulation. The approach of the book is to counter claims that have been brought against risk regulation by some economists and conservative think tanks of its being ‘irrational,’ in that such regulations often impose solutions to risks that end up being quite costly. The main arguments of the book are set out in recursive fashion, beginning in Chapter 2 with a brief overview of pragmatism and how it relates to risk regulation.

Chapter 3 outlines some of the key terms of current risk regulation (e.g. statutory standards and risk thresholds) and how they work in practice, arguing that the U.S. Congress has rightly rejected cost-benefit approaches. Chapter 4 outlines the link between pragmatism and the current approaches, showing how pragmatism is more attuned to the multidisciplinary nature of risk and decision-making involving risk. Chapter 5 introduces some of the key critics of risk regulation and their arguments and flaws while Chapter 6 analyzes the different valuation methods that are used, undermining some of the critics' claims about risk as being limited by various factors that extend beyond simple utilitarian reduction of risks to costs and benefits. Chapter 7 focuses on regulatory impact analysis arguing for qualitative data to be included along with quantitative. Chapter 8 proposes incremental decision-making to overcome the problems of over-regulation and the excessive time that it takes to implement a complete and comprehensive regulatory scheme, while Chapter 9 addresses the different functions of the executive, judiciary, and legislative branches of government and how to make them act in concert and not against the "relative competence of ... agency decision-makers" (p.206). While the amount of material covered is quite impressive, the argument setting out the pragmatic basis for risk regulation I found to be somewhat thin.

The bulk of this discussion is laid out in Chapter 2, but is occasionally referenced in later chapters. While John Dewey is cited several times, this is done entirely on the basis on secondary sources. It becomes clear that the point of the chapter is to briefly lay out a framework which will allow the authors to argue that, in the context of American political discourse, the pragmatic tradition, taking into account ‘bounded rationality,’ is the most suitable for reaching optimal results. Further, such pragmatic-based policies can always be adjusted, “on the back end” as they put it, in light of new data or evidence that shows that there is either too much or too little regulation. Nevertheless, the authors want to argue that idealism is not abandoned by such an approach, in that “pragmatism’s commitment to being open-minded [does not] require one to abandon passionate beliefs” (p. 29). Much of the remaining chapters of the book outline the methods by which risk regulation has worked in the U.S. since its inception in the 1960s and 70s, and counters the claims of utilitarian critics who want to reduce the costs and burdens of current regulatory controls. In general, the authors are skeptical of reduction of risk to economic models, because this “gives the upper hand to economic analysts and discourages non-economic input” (p.60).

Quantification becomes the only measure to solve risk disputes, whereas, in contrast, the authors place a high value on the benefits of arguments across a range of disciplines. I would add that their view is also somewhat blinkered by the reliance on pragmatism, but this doesn't detract from the more than a few important insights that they make regarding economic analyses. The first point is that there are many benefits of regulation that cannot be easily quantified. A second point is that assessing the cost of any given risk regulation can be done in different ways, as exemplified by problems with a 'willingness to pay' model that is often employed to determine the objective value of risk protection. In many cases, such a willingness to pay is dependent on the wealth of an individual. Workers in high risk professions are often paid low wages and thus have little margin to pay for additional protection (p. 99-100) and as a result willingness to pay will be quite low. Third, the standard economic practice of 'discounting' depends on certain assumptions about what expectations people have about the future. The rate of discounting, which can vary anywhere from 2 to 12 per cent, can make the difference in many cost benefit analyses between reasonable and unreasonable costs. Not surprisingly, the authors favor a smaller rate of discounting than the critics. The last three chapters of the book move the discussion into the realm of how regulation actually transpires and is impeded or facilitated. Here, they argue that many 'regulatory impact analysis requirements' have exceeded their utility.

In recent years, Congress has underfunded the regulatory agencies and regulation is slowed and weakened. As a measure of getting around these problems, they advocate 'incremental' decision-making and 'back-end adjustment,' a process by which periodic review can be undertaken. While the approach outlined here is comprehensive and the material fairly easy to digest, one has to wonder how much the lay public is really going to be able to get involved in what are very technical types of debates and processes. Shapiro and Glicksman seem to be addressing themselves to similarly minded researchers and policy professionals who are eager to maintain and improve the regulatory administration that has been fashioned over the past 35 years or so but which is increasingly under attack by economic and utilitarian analyses encouraged by the current U.S. administration's favorable view of big business. They make nods to public participation but they have little to say on how this would work; there is no real description of a public in this book.

On the other hand, the focus is clearly on the machinery of government and thus it is very timely in providing a guide to what is useful about risk regulation and what is flawed in many of the risk regulation critics' books and articles. One could also question whether their argument is too pragmatic in that it seems to evade a political dimension. Another kind of critique of technical risk analysis that has been made over at least the past decade is that it can never achieve the level of objectivity that it frequently aspires to provide. While Shapiro and Glicksman have grounded this work in a pragmatic philosophy, one that is unfortunately hardly expanded on in the conclusion, they also fail to acknowledge any of the recent and growing body of work in sociology of risk such as Ulrich Beck (1992) or Strydom (2002), just to name two works, one very well-known and one very recent. They might argue that their book is focused on regulation and law, but it seems a little surprising to this reader that there is not even a reference to such work, critical as it has been of the separation of technical and social domains.

As a reader who is interested in these issues, both in my country of residence (Japan) and in the U.S., I would have liked at least a little mention of the role of the U.S. in the world in regard to risk regulation. Are these trends towards chipping away at and weakening risk regulation unique to the U.S. or in some way mirrored in other parts of the world? It would certainly take another or different book to answer this question, but the authors don't address the 'bounded' aspect of their focus on risk regulation in the U.S., which is somewhat peculiar in that risk, as Beck has argued, escapes its 'natural' borders. One further point that I found annoying was the authors' use of Professor for some of their citations. I didn't do a count of these titular references but it appeared that Professor was more likely to be used when they were quoting approvingly.

In conclusion, I would recommend this book to those who wish to know more about risk regulation and the debates that are taking place over how to reform such policy institutions. Such information is likely to be important for greater numbers of citizens if they are to continue to value risk regulation in the face of counter pressures to commodify and turn risk into little more than a cost benefit zero sum game. References Cited: Beck, U. (1992). *Risk Society*. London: Sage. Strydom, P. (2002). *Risk, Environment and Society*. Buckingham: Open University Press.

Silenced Rivers: the Ecology and Politics of Large Dams. Enlarged & Updated Edition, by McCully, Patrick. (2001), New York: Zed Books, +416 pages.

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Political Hydrology: the Damning of Nations

On March 13, 1982, approximately 25 police officers, paramilitary men and soldiers arrived in Rio Negro; a small riverside village nestled deep in a Guatemalan valley. Entering under the pretext of a regionally administered search for illicit guerilla combatants, the soldiers commenced the beating, rape and torture anyone they could restrain. At the end of the bloody episode, 70 women and 107 children lay dead. Later that year in a near by village another 92 were gunned down, their bodies piled and burnt in a bonfire.

Subsequent inquiry found that the region was anything but a haven for guerilla activity. Instead, the murdered were peasants who refused to leave their land to make way for the construction of a hydroelectric dam project destined to flood the valleys they had farmed for generations. The events described above are elaborated upon by Patrick McCully's book *Silenced Rivers: The Ecology and Politics of Large Dams*. Just one the many similar stories that accompany dam building schemes, this incident centers on the Guatemalan government's use of terror tactics in their attempt to expatriate the Maya Achi Indians from their ancestral lands. After receiving sizeable loans from the World Bank, the Inter American Development Bank, and the Italian government for the construction of the Chixoy dam, thousands of indigenous people were faced with forced resettlement or submergence under the rising reservoir waters. Those refusing to cooperate also faced the threat of murder.

Although the book is not what most academics would consider a political ecology, it is certainly one of the most thorough reviews and critical analysis of the environmental and political impacts of dams compiled to date. The hydroelectricity industry, the technical failures of large dams, the elusive benefits of hydro projects, large scale agriculture and irrigation, watershed policy, renewable electricity, the political economy of dams-- it's all here, neatly compacted between the covers of a single volume. Although portions of the work lapse in to journalistic prose, it is meticulously researched with almost every issue or technological argument made by dam advocates accounted for and strategically reproached. There exists no work more precise, thorough or devastating in its treatment of large hydroelectricity and large-scale irrigation projects. Take for example McCully's understanding of complex ecological issues: although hydroelectric projects are often envisioned as 'clean and green' alternatives to fossil fuels, McCully describes the myriad of reasons why dams are ruinous to the environment, reinforcing each of his arguments with carefully selected data.

A point of particular interest is hydroelectricity's contribution to global warming. By flooding lands behind dam walls,

"...The pattern of fluxes of CO₂ and CH₄ with the atmosphere is totally altered...plants and soils decompose when flooded and will eventually release almost all their stored carbon.... hydropower reservoirs, especially in tropical forest areas can make a significant contribution to global warming, in some cases as much or even more than fossil fuel burning" [141-142].

Climate change is not the only problem tackled: river sedimentation, the alteration of water temperatures, invasive species, geological effects, and hydro's role in malaria exacerbation are all considered in explicit detail in relation to their detrimental ecological impacts. For example,

"...roughly estimated for a 1987 World Bank study...around 50 cubic kilometers of sediment--nearly 1 percent of global reservoir storage capacity-- is trapped behind the world's dams every year" [107].

The sediment load disrupts dam functioning and decreases dissolved oxygen availability that also increase water temperatures behind the dam wall. Hydrological processes are thus altered in

ways that wreak havoc on local fish and wildlife. Also considered is what many charge as the world's most water consumptive industry: agriculture.

Irrigated agriculture makes use 70% of freshwater resources worldwide. The majority of this water is concentrated in the hands of large-scale producers, and up to 40% of the water transported is lost en route from source to sink due to pipeline leakages, evaporation and other inefficiencies. The Green Revolution in agriculture, which began in the 1950's and expanded dramatically during the 70's, popularized a set of production techniques involving improved seed varieties, inorganic fertilizers, pesticides and irrigation. The Green Revolution can thus be understood as one of the primary drains on freshwater resources. Intended to supply foodstuffs to impoverished countries, the Green Revolution marked a policy shift by numerous third world governments towards centralized irrigation schemes for selected producers. Improved "high yielding" hybrid varieties of rice and wheat demanded massive inputs of irrigation. This required the construction of hundreds of dams worldwide.

Although it is impossible to ignore the massive increases in yield brought by these technological changes, such advances did not come without losses. According to McCully,

"...after decades of modern perennial irrigation, soils which in many cases had supported traditional farming for hundreds or even thousands of years have become so degraded that they are not suitable for agriculture. Huge areas of irrigated land are now waterlogged and clogged with salts [145]."

McCully also debates the measures of efficiency used to analyze modern cropping systems:

"Irrigation together with inputs such as modern seed varieties and agronomical chemicals can clearly increase crop yields by significant amounts...Critics of the Green Revolution argue that this misleads as to the impact of intensive irrigation. Many irrigated areas are in fertile plains which were already more productive than other areas. As modern irrigated fields grow only a single crop, official statistics measure only the yield of this crop" [179].

The productivity of the cropping system is therefore not considered from an integrated and ecological standpoint: there is little recognition of ecosystems services which may or may not be supplied in these irrigated monocultures, nor is there mention of the potential negative impacts of these cropping systems, for example nitrate pollution, the low energy efficiencies of agricultural inputs, or the loss of biodiversity.

The following chapter is rife with historical data accounting for the ways in which dams can be harmful to human populations. For example, in 1975 maintenance workers at the High Teton dam in southern Idaho

"... saw a muddy stream gushing through the dam's north abutment. A few hours later a large wet spot appeared on the dam's downstream face, the spot turned to a spring, then a waterfall, then a 20 story high torrent burst through the northern third of the dam [102]." Unwilling to expend additional funds for geological retrofitting, engineers approved blueprints for construction that were poorly developed and faulty. This resulted in an "...ensuing deluge that damaged or destroyed 4,000 homes and 350 businesses in these small towns downstream and scoured the topsoil off several thousand hectares of farmland. It killed 14 people...and caused property damage costing up to \$1 billion [102-103]."

As mentioned above, McCully's book is not intentionally written as a political ecology. His work is not expressly academic and his approach drifts from that of a well-seasoned activist, to an ecologist, and at times to that of a political economist. Readers more familiar with the 'traditional' frameworks presented in anthropology or political ecology (discourse analysis, the politics of resource exclusion, etc.) may therefore find the book lacking. Nonetheless, McCully does attempt an analysis of the ideologies invoked by dam builders and proponents of similar 'megadevelopment' projects by employing tantalizing quotations in which such actors clearly demonstrate their adversarial and dominating relation to the environment. Scholar Arturo Escobar [1996] wrote eloquently on the process by which nation-builders attempt to "discipline nature" in order to prove their political and hegemonic legitimacy. By digging into the history of dam building, McCully unearths numerous references that clearly demonstrate Escobar's maxim. For example, there is writer M. Gorky who wrote "Soviet dam builders sought to 'make mad rivers sane [17].' Dams are thus more than 'modern temples' constructed in honor of Statehood—they are also symbols of man's never-ending quest to extract unabated resources from the earth.

Stalin's writing [1979] that '...water which is allowed to enter the sea is wasted' is echoed in a document produced in 1987 by the globe's leading proponents of neo-liberalist development, the World Bank.

"It is difficult to conceive of a scenario in which India can afford to let the waters of a major river such as the Narmada run wasted to the sea. Dams are therefore symbols of 'the progress of humanity from a life ruled by nature and superstition to one where nature is ruled by science and superstition is vanquished by rationality [237].'"

Consequently, without committing to restrain their rivers in the name of electricity and irrigation, nations are barred from modernity and 'development' remains but a dream.

Although McCully notes these issues, his analysis falls short from a full understanding of the ways in which damming projects are but another expression of the cultural and political hegemony exhorted by advocates of industrialization as progress. This is perhaps one of the most negative points of the book—by failing to produce a theoretical examination of the unspoken connections between such mega-technologies and the expansion of modernist ideology, an unparalleled opportunity to demonstrate with clarity the pervasive authority of industrial culture is lost. Instead we are presented with slices of a full critique. McCully deploys multiple arguments denouncing the supremacy of the discourse of global environmental management and modern development. In the absence of easily quantifiable facts, dam builders contend that their projects contribute to human progress. Supporters of the Global Environmental Management paradigm argue that, although there may be negative environmental consequences, their work is on the whole positive, and that the bureaucratic agencies, government and industry collaborations necessary to complete dam construction are symbolic of the 'highest rung' in environmental management. In the name of modernity and progress, 'wild' rivers must be 'tamed,' made productive and brought under the administrative purview of state agencies and industry—only then do they achieve a sense of cultural and economic worth. Rivers are thus converted from a natural state of unabated functioning into a productive machine reminiscent of the modern factory, constantly producing energy for human use and economic gain.

Despite the weak treatment of these points, McCully more than makes up for these shortfalls through his otherwise excellent analyses. Evoking an unintended political-ecological approach to uneven development policies in the third world, McCully explains that "...areas with people who are well off and well connected do not make good reservoir sites [70]." What follows is a description of "The Final Blow," the impact of dams on indigenous peoples. In the Philippines the overarching majority of dams have been constructed on lands claimed by the country's 4.7 million indigenous people. The influence that hydroelectric projects can have on these populations is clear. As indigenous populations are already marginalized from the modernization process, "mountain valley, forest or desert reservations are often their last refuge from cultural oblivion [70]." Relocation from these areas involves the "loss of common resources on which their economy is based, and is a traumatic process from which few cultures survive unscathed [70]." It is in these chapters which McCully writes most lucidly, and in which he weaves the threads of politics, economics, and ecology into a coherent whole.

Take for example the history of the Senegal River in Mauritania. For centuries the floodplains of the river were host to hundreds of thousands of peasant farmers who would follow the rivers retreating waters, planting their crops in nutrient rich sediment deposited annually. The remnant ground moisture was usually adequate to ensure germination and a bountiful crop. Once harvested, nomadic herdsman customarily grazed cattle on the remaining crop stubble, their herds fertilizing the land in the form of manure. At the same time, the river's yearly floods recharged the regions wells from which "women in the valley drew water...to grow vegetable gardens, giving them a measure of economic independence from their husbands [176]."

But when the final paving stones were laid on the Manantali Dam in 1987, the floodplains were pushed into a state of ecological stress, effectively ending this subsistence cycle. Under pressure from the World Bank and the International Monetary Fund, Mauritania implemented a series of neo-liberal measures aimed at privatized rice and sugarcane cultures for consumption in West Africa's burgeoning urban centers. Irrigation for the massive undertaking was supplied with water drawn from the reservoirs of the Manantali River, now dammed and hindered from delivering rich sediment downstream. The consequent decreased yields and increased population pressure on floodplain lands remaining outside commercial agricultural control has heightened ethnic tension between black farmers, who are perceived as Senegalese, and Mauritanian herders,

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seen as Moors. In April 1989 a border flare-up that was exacerbated by the volatile and cramped conditions peasants experience on the now denuded floodplains exploded, nearly bringing the countries to the brink of war. Violence gripped the land when tensions resulted in the looting of Mauritanian owned shops resulted in 250 deaths, at least 60,000 Moors fled or were deported from Senegal, and tens of thousands of blacks were forcibly expelled from Mauritania [176]. Although the social forces leading to these horrific events are extremely complicated, McCully contends that it is impossible to deny that the dam construction and the consequent interruption of subsistence lifestyles was a major influence in igniting the conflict. McCully's ability to trace the threads of environmental exploitation, resource access conflict and social upheaval make *Silenced Rivers* excellent reading. The book is however much more than a chronology of the horrors associated with dam building.

The final chapter, "We Will Not Move," is a review of the international anti-dam movement. Struggles against hydro projects are chronicled in the US, Tasmania, Eastern Europe, Brazil, Thailand and India. McCully concludes by proposing a new approach to water policy aimed at re-envisioning resource management at the watershed scale. Calling for a memorandum on large dam projects world wide, he delves into technologies (ranging from solar to small-scale non-damming hydro) and policies based in community participation in common-pool resource management-- all of which are artfully discussed alternatives to the hydroelectric behemoth. "Although hundreds of large dams are still under construction and many more are on engineers' drawing boards, aid funds and other public sector sources of financing are drying up, and public protests are provoked by just about every large dam that is now proposed in a democratic country," optimistically relates McCully. "The international dam industry appears to be entering a recession from which it may never escape [308]."

Silenced Rivers, although not expressly a political ecology is a scrupulous inquiry into the culture of dam building. It addresses in perhaps more detail than many self-proclaimed texts in political ecology, the fundamentals of environmental science, hydrology, conservation and social issues associated with this mode of development. *Silenced Rivers* is therefore indispensable material for political ecologists who wish to understand critically the effects of dam building on the environment and cultures worldwide.