



## BOOK REVIEWS

Tsing, Anna Lowenhaupt. 2015. *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*. Princeton, NJ: Princeton University Press. 352 pp. ISBN 978-0691162751.

Nestled in the woods at the edge of the Santa Fe National Forest in northern New Mexico, a restaurant sits alongside an inn and spa modeled on the mountain hot springs resorts of Japan. The restaurant offers an upscale version of *izakaya*, a Japanese style of small-plate dining. Its menu showcases delectable tidbits—neat stacks of watermelon-colored root vegetables, fragrant *yuzu* atop seared steak, and crispy rice flecked with *nori furikake* seasoning, formed into geometric shapes. It does not feature matsutake mushrooms—the astronomically priced fungus savored in Japan that holds together the vibrant, rhizomatic strands that make up Anna Lowenhaupt Tsing’s provocative new ethnography. Yet the aromatic mushroom Tsing follows would fit well among the restaurant’s Japanese-inspired, hand-picked delicacies, whose presentation in bite-sized portions on small plates delivered in fast succession bears a striking resemblance to the kaleidoscopic 20-chapter book Tsing has crafted. Weaving together ethnographic portraits of mushroom pickers and traders with natural history accounts of multispecies entanglements and theoretically attuned arguments about global commodities, scientific knowledge, environmental degradation, and alternative politics, *The Mushroom at the End of the World* serves

up choice morsels for a variety of readers, who are likely to find their palates tickled at multiple stops in its continent-crossing journey. As with *izakaya* at its most ambitious, the nibbles here may be served in modest proportions, but the meal to be assembled promises something more substantial—in Tsing’s case, nothing short of a meditation “on the possibility of life in capitalist ruins,” as the book’s subtitle sets forth.

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Tsing’s mushroom book is the latest monograph from one of the most lucid and widely referenced anthropologists writing on environmental themes today. A much anticipated volume, it marks the more fully elaborated expression of lines of analysis and styles of exposition developed in her earlier work, including *Friction* (2005) and *In the Realm of the Diamond Queen* (1993). Since 2004, Tsing has tracked the unexpected connections formed by the “humble” if “world-making” matsutake mushroom, with research in Asia, Europe, and North America. The mushroom is an unusual item of exchange. It is a globally traded food, particularly prized in Japan, which has thus far resisted efforts at human cultivation. But it grows best in landscapes that have been significantly modified by humans, notably pine ecosystems that take hold after wider deforestation, where an assortment of life forms come together and collectively sustain one another’s survival. Today, the procurement of matsutake from such sites links the activities of



a dizzying array of actors, including Japanese consumers seeking to forge ties of reciprocity through expensive mushroom gifts; an ethnically diverse and economically precarious bunch of pickers, many of whom are dispossessed survivors of brutal wars in Southeast Asia, hunting the fungi and multifarious forms of freedom in the denuded industrial forests of the US Pacific Northwest; and various intermediaries, such as dealers in Yunnan, China, who are getting rich off new picking privatization schemes, and research scientists and forestry officials, whose engagements with matsutake knowledge are similarly shaped by their locations. Nematodes, candy cane plants, and atmospheric winds carrying mushroom spores also make appearances as characters, along with the mushroom itself, as Tsing's narrative deliberately aims to decenter the human as the hero of the story (155). In configuring the book as a fast-moving montage that brings these characters rapidly in and out of focus, Tsing explains, its short chapters mirror the flushes of the mushroom (viii), popping up from tangled and far-reaching strands here and there like mushroom caps.

Following the matsutake also provokes new ways of doing anthropology, Tsing suggests. The mushroom, which sprouts from intimate encounters across species, provides both an impetus and a guide for collaboration among researchers. Tsing's effort to track the mushroom is part of the work of a larger research collective, known as the Matsutake Worlds Research Group (MWRG), which has been experimenting with creative forms of investigation and authorship based on its coordinated efforts for some time (see MWRG 2009). Readers of Tsing's book learn that a good part of her field research was conducted alongside other anthropologists, especially in China and Japan, where MWRG members have long-term experience. The *Mushroom* volume is in fact the first installment in a trio of matsutake-themed monographs from Princeton, with forthcoming books by MWRG members Michael Hathaway and Shiho Satsuka. According to Tsing, the unconventional modes

of scholarly practice that animate this work stem from the recognition that multispecies worlds and knowledge of them emerge foremost through encounter.

As these details suggest, the matsutake is more than simply the book's object of analysis. It is also its method and even its message. In Tsing's hands, the mushroom is an exemplar of a world of "contaminated diversity" (32) where "purity is not an option" (27). At the same time, it is a model for how to apprehend this world, since the mushroom's rhizomatic reaches and unpredictable fruitings demand careful "arts of noticing" (17) that draw pickers and analysts alike close to the ground, as they track its meanderings across varied terrain. Springing up as it does in "disturbed" and even "blasted" landscapes (3), the matsutake offers a medium for exploring "collaborative survival in precarious times" (2); it is a case of "what manages to live despite capitalism" (viii). The emphasis in Tsing's account is on life, survival, and possibility, even as it keeps hold of destruction, loss, and alienation, by which she means the wresting of life forms from the entanglements that sustain them to become "mobile assets" (5; see also Tsing 2003: 5100). Like the precarious livelihoods and uncertain environments with which the global matsutake trade is enmeshed, the capitalism Tsing theorizes is resolutely "patchy": not quite the regularizing juggernaut by which it has long been known, and often a prolific gatherer of unpredictable, discontinuous, contingent, and nonscalable relations (4–5; 42–43). Building from this analysis, Tsing argues that the mushroom's contaminated and collaborative ways provide a means of envisioning both physical and political life on earth after the modernist, business-minded myth of progress has been shattered, or, as she puts it, "beyond the call of industrial promise and ruin" (18).

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Given the parade of piquant bites the book serves up, different readers will no doubt find themselves drawn to particular portions. I

was especially absorbed by Tsing's focus on "salvage"—the overarching theme that organizes the middle chapters of the book—especially as it takes shape in the ethnographically rich spaces that radiate outward from "Open Ticket." A pseudonym for a composite field site within Oregon's National Forests (based on a term denoting a mushroom sale that permits a later price adjustment), Open Ticket is a camp of pickers, buyers, and agents that serves as a hub for the region's matsutake trade. In this zone of radically nonstandard and insecure work, Tsing probes the ambivalences of making a living on the precarious edge of the so-called formal economy within a landscape gouged by past extraction. Conceptualizing salvage as "taking advantage of value produced without capitalist control" (63), she goes on to posit "salvage accumulation" as "the creation of capitalist value from noncapitalist value regimes" (128). Her aim in coining these concepts, as she sees it—building on work in feminist anthropology that shows how capitalist processes are influenced by other domains—is "drawing attention to livelihoods that are simultaneously inside and outside of capitalism" and "show[ing] precarious living in scenes that both use and refuse capitalist governance" (134). Her discussion of salvage, despite its spare and streamlined delivery, plunges readers into dense and thorny debates taking place more overtly outside the book's pages—about the nature of value, where it resides, how it is generated, and how to conceptualize capitalist insides and outsides (see, e.g., special issues on value over the past decade in *Anthropological Theory* [Pedersen 2008] and *HAU* [Otto and Willerslev 2013a, 2013b]).

Tsing is clearly onto something in highlighting the significance of the processes she associates with salvage and their visible role in accumulation today. As she shows in her earlier work on "supply chain capitalism" (2009a, 2009b), which informs her discussion of salvage accumulation in the book, it is noteworthy that capitalist profit-making at present depends so heavily on strategies such

as subcontracting and outsourcing to manage supply chains rather than directly command production, representing a sharp shift from the industrial organization that distinguished twentieth-century enterprise. Yet Tsing's invocation of salvage at times begs more questions than it answers. For one, her move to parse salvage accumulation from accumulation in general seems curious given the degree to which, as she readily acknowledges, capitalists regularly depend on elements they do not create or control, such as photosynthesis, oil, and the human life that forms the basis for labor (62–63). Indeed, Tsing recognizes that salvage dynamics are neither new nor "an ornament on ordinary capitalist processes," but rather "a feature of how capitalism works" (63). If contaminated logics are in fact more common than not, one wonders about the purchase of differentiating among modes of accumulation to register what Vinay Gidwani (2008: xix), adopting a phrase from Timothy Mitchell (2002), calls "capital's 'para-sitic' existence," signaling how it draws force from "other kinds of energy or logic—cultural, political, nonhuman." That said, Tsing enlists her concept of salvage accumulation to important effect to underscore especially cacophonous chains of translation and to pinpoint an important historical dimension to her case: "Now that global supply chains have come to characterize world capitalism," she notes, "we see this process [of salvage] everywhere" (63).

Through the notion of salvage accumulation, Tsing (66) seeks to stake out a theoretical position between what she characterizes as the "strongly contrasting goal posts" she finds in Michael Hardt and Antonio Negri's portrayal of capitalism as "a single, overarching system that conquers all," and its diminution to "one segregated economic form among many," as associated with J.K. Gibson-Graham. Amid these two poles, Tsing understands capitalism as part "assemblage," insofar as it operates by collecting contingent and discontinuous elements, and also part "machine," a "system of commensuration" that works by translating across difference (133). Her emphasis on

both of these characteristics, rather than an exclusive focus on one or the other, lines up with her effort to trace “the interplay between the scalable and nonscalable in forms of capitalism” (43). As is the case throughout the book, Tsing’s discussion of salvage does not come with much explicit theoretical maneuvering, even as it registers deep engagement with scholarly debates. Most references are relegated to fairly brief footnotes. Readers are thus left to their own devices to hash out the precise relationship of Tsing’s argumentation to work by other scholars who have set out to theorize capital’s simultaneous assemblage- and machine-like features and its fraught dependence on noncapitalist forms (see, e.g., reviews by Castree 2003; Braun 2015).

In her discussion of salvage, Tsing draws particular attention to what she terms the “patchiness” of present-day capitalism and the world at large, a concept that casts a wide net as it is used over the course of the book. While plenty of theorists have called attention to the uneven disjunctures of recent capitalist development, Tsing emphasizes above all the unpredictable, unplanned, and startling qualities of patchiness. “Surprises” abound in this analysis: from the unlikely peculiarities of the matsutake trade (14), to the mushroom’s emergence as “new value” in a “ruined industrial landscape” more generally (30). In highlighting the ways in which life unexpectedly takes hold in blasted environments, Tsing’s account stresses how value is gleaned from sites of accidental bounty—or, in her words, how “*the concentration of wealth is possible because value produced in unplanned patches is appropriated for capital*” (5, emphasis in original). At the same time this formulation points to longstanding profit-making tactics, it nonetheless risks downplaying the cultivation of value—and not merely its later appropriation—in precisely the sort of intimate encounters the book tracks. When it casts the mushroom and more as “what manages to live despite capitalism” (viii; see also 134), it shifts attention away from how these beings are also living with, through, and, in some cases, because of capitalism. Some readers

may balk at Tsing’s insistence on the generative possibilities that endure in otherwise bleak settings of dispossession and ruin. But my concern is whether the topography of capitalist insides and outsides that informs her analysis may lead her to overlook some of the very generative powers she seeks to theorize.

It is in Tsing’s discussion of alternative politics toward the end of the book that the generativity she tracks is most intriguingly apparent. She links salvage accumulation to new kinds of collectivities and political formations, such as the rise of groups in Japan seeking to cultivate the *satoyama* forests that foster matsutake, and emergent forums in Open Ticket for public discussion among mushroom pickers and the US Forest Service about issues such as racial profiling (253–264). The book closes by returning to the crucial question that runs across its mycelial forays, about what sort of prospects for acting politically exist after narratives of societal advancement have crumbled: “Without progress, what is struggle?” (254). As Tsing notes, “[s]alvage accumulation reveals a world of difference, where oppositional politics does not fall easily into utopian plans for solidarity” (134). While we get only a glimpse of the “latent commons” (135) she proposes as an alternative—enclaves that extend beyond the human, harboring the indeterminate beginnings of “not-yet-articulated common agendas” (254–255)—the notion is suggestive enough that readers will no doubt return to it, along with many other morsels contained in the book, for inspiration and analytical guidance.

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At the *izakaya* house in the northern New Mexico woods, sake is the house specialty. Each glass is served by way of an overflow pour, the alcohol spilling over the cup rim into a tiny dish below, symbolizing convivial abundance, or so the servers claim. In Tsing’s account of the matsutake, we are graced with an analogous overflow—a multiplicity of chapters and a profusion of prose that is by turns crackling, evocative, and haunting. These short bursts also hold a seemingly inexhaust-

ible wellspring of enticing metaphors and turns of phrase, which capture expansive theoretical argumentation in memorable nuggets. Those who are familiar with Tsing's earlier work will appreciate a number of signature moves in her latest book, from the textured ethnographic portraits of livelihood practices embedded in the natural world, which mesmerized readers of the *Diamond Queen*, to the more peripatetic approach developed in *Fric-tion*, which assembled a picture of the global through a synthesis of well-staged snapshots. Tsing employs these techniques in her mushroom monograph, too, though its vignettes are shorter, the snapshots more wide-ranging, and the pace among them brisker. Traveling along the rhizome takes Tsing to far-flung spots over the course of the book: Japanese economic history, Finnish forestry, the science of the double helix, and so on. Across these journeys, the book's conceptual vocabulary expands, too, as Tsing adds terms like "polyphonic assemblages" to the mix. Unlike other efforts to chart theoretical interventions through lexical innovations—for example, actor network theory, with its glossaries and grids—Tsing's conceptual contributions feel more free-form and spontaneous, as insights picked up along the way, summoned by the mushroom and other emergent forms of life.

In this way, the matsutake furnishes Tsing with fertile material for extended play with all manner of mycorrhizal motifs, generally to illuminating ends. At times, however, particularly as the samplings whiz by and pile up over the course of the book, I found myself hungering to sink my teeth into fewer, more meaty servings. But Tsing's account deliberately troubles such expectations. After all, its final chapter is an "Anti-Ending," followed by a subsequent reflection on the collaborative research through which the book was born. Given the perspectives Tsing puts forth, readers cannot help but consider whether more traditional chapters and books with plodding analyses, predictable arcs, and tidy endings might be little more than nostalgic throwbacks, desperate bids to perpetuate the very myths of orderly progress that the pres-

ent has already obliterated. While some readers may be frustrated by the book's spread of multifarious, small-portioned items, it nevertheless succeeds in opening space for a wide range of individual engagements with the text, staging exactly the kind of non-scalable encounters of particularity and immediacy that it aims to analyze.

For this reason and more, *The Mushroom at the End of the World* supplies fitting material for teaching at the advanced undergraduate and graduate levels. With short chapters written in an engaging style, its pieces can be mixed and matched to highlight topics that align with course themes, from multispecies anthropology to theories of exchange. It also introduces important questions of method and form, which may be more readily taken up in graduate classrooms. Given that this is the first volume in a mushroom-themed trilogy, its story promises to go on.

What are we left with, then, after the plates are cleared and our reading of this particular tour stops? The chief accomplishment of Tsing's piecemeal journey, it seems to me, is the broad and weighty questions it keeps on the table: How do we come to know an organism that we only encounter a tiny part of, whose main life takes place far from human view? How do we get a handle on the contaminated economies that spring up around it, whose constitutive threads stretch similarly wide and deep? And what does it mean to understand the patchiness and precariousness of the present through its chance morsels? *The Mushroom at the End of the World* does not resolve these questions, but it gives us a fine specimen to chew on as we go forth, enlivened by its spirit of exploration.

Karen Hébert  
Carleton University

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*Principles for Building Resilience* stems from several years of collaborative research by the

editors. The impetus for the book is based on their understanding that the need for continued socioeconomic development and the need for socio-ecological resilience are not contradictory but can be resolved through a focus on the resilience of ecosystem services. The authors likewise see the resilience of ecological services as a key factor in negotiating life on a planet where population growth over the past century while resources and space remain finite. Ecosystem services—the ability of the environment to provide infrastructural, ecological, and other biophysical services that are exploitable for human well-being—provide an important part of maintaining human well-being on a rapidly changing planet. The first part of the book is organized into two theoretical chapters on the concept and politics of resilience and ecosystem services that outline the problems facing socio-ecological systems and the maintenance of ecosystem services. These are followed by seven "principles" chapters that outline how exactly the resilience of ecosystem services can be built and fostered. Finally, there is a short conclusion that summarizes the principles and reflects on their implementation in various contexts.

The book begins with an introductory chapter by the editors that lays out the basics of resilience and the importance of sustaining ecosystem services in the Anthropocene. Since resilience can take on a multitude of disparate meanings, it is important to understand what the editors, and presumably by extension the authors of each chapter, mean by the term. For the editors, resilience holds a somewhat unique ontology in ecological sciences in the way that it sees humans as integral and interdependent parts of ecosystems across multiple scales. Viewed this way, all human action affects both global and local ecosystems (albeit not with the same intensity), and these changes feed back into the variations of human life, ultimately affecting human wellbeing. As a result of this continuous feedback, socioecological systems are always in flux and are prone at all levels to

change. Resilience emerges from the ability of such systems to continue to adjust to this change without fundamentally changing the ability of the system to provide for and enhance human well-being, in their case primarily through ecosystems services. However, political, economic, and social pressures can drive decision-making in ways that, through their rigidity and short-term focus, can reduce resilience by degrading the ability of socioecological systems to improve human well-being. One example they give is that of development initiatives that focus on short-term economic improvements in the freshwater fishing industry. A short-term focus on profits in this sector can cause overfishing, leading to ecosystem collapse and a reduction in human well-being. However, deciding which services to manage and how can only be done through complicated and contested political processes, which are the topic of the second chapter.

What counts as an important or valuable ecosystem service depends on who is making demands on the service. However, complex socio-ecological systems, with their diffuse global and local impacts, make it so that changes to the resilience of any one ecosystem service cannot be made without potentially negatively impacting many others. Likewise, certain ecosystem services will provide improvements to certain areas of human well-being potentially at the expense of others. The result is a complex political situation where decisions about which ecosystem services to focus on and how results in an asymmetrical system of power that must be negotiated politically. These political and power dimensions of resilience are the focus of chapter 2. The authors of this chapter argue that resilience scholars have not adequately integrated the political challenges of the allocation of ecosystem services among distinct populations. However, the dilemma the authors address is only what type of ecosystem service might be best. While they do not make specific recommendations about types, they do note that there is a possibility that one choice might foreclose on the possibility of

others that are better over a longer period of time. However, they take for granted what it means to promote an ecosystem service without consideration for the potentially violent displacement of peoples in the process of such promotion. Two examples they use—the establishment of national parks to lessen extraction and promote biodiversity and the creation of palm oil plantations to produce biofuels—are common examples used by geographers to show the potential violence in conservation efforts (see, e.g., Fairhead et al. 2012). Discourses that presume that ecosystem services serve a universal good likewise run the risk of creating moral narratives that generate violent sociopolitical situations (see Neumann 2004 for an example pertaining to biodiversity conservation). In short, the politics of resilience run much deeper than the authors suggest, though their general argument that politics should be better integrated into resilience research stands.<sup>1</sup>

The book continues by providing, in incredible detail, the seven “principles” specified in the book’s title. These principles are specifically intended to promote an institutional structure capable of sustaining “desired ecosystem services in the face of disturbance and change” (254). These principles can be divided into two sets, the first generic and the second related to the governance of socio-ecological systems. The arguments laid out through these principles are complicated and a short review cannot do them justice. The authors do, however, generalize these into three mechanisms important for building resilience: increasing understanding of the functioning and governance of socio-ecological systems, preparing these systems for shocks and providing potential alternatives and outlet for when shocks occur, and enhancing response capacity for post-shock recovery.

This volume offers a unique and certainly fascinating insight into resilience planning in socio-ecological systems. However, many social scientists may find its sociological insights, particularly as they relate to the differential political-economic experiences of land-

scapes, lacking. If the authors and editors intend to fully understand the complexity of socio-ecological systems, then it is clear that additional collaboration between the environmental social sciences and the natural sciences is necessary. As such, while this book would be useful in advanced undergraduate and graduate seminars that focus on socio-ecological systems, resilience, or perhaps even climate change, it is best supplemented by any number of recent scholarly works on resilience from the social sciences that are better suited to critically explore the depths of the entangled social aspects that are glossed over or completely missed in this volume.

Joshua Mullenite  
Florida International University

1. For a more detailed analysis of resilience politics than this book offers, see Tierney 2014.

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Dieter Helm's *Natural Capital: Valuing the Planet* locates itself by 'engaging' with the metaphorical concept of "natural capital," that offers to pave a revolutionary path for the sustainable economic growth. The concept of natural capital is premised on thinking economically about nature in such a way that economic growth can be both maintained as well as improved. By invoking nature as an

asset—or, in other words, by viewing nature as an external, controllable entity mechanically calibrated and measured—the natural capital concept claims to guarantee the reversal of current failures to preserve and protect nature. Once nature is constituted as a set of tangible assets, the author argues, it can be valued and calculated through diverse accounting mechanisms that reveal the precise environmental costs of land, water, air, and marine environments, enabling compensations for damages or destructions. In this way, the idea of "nature" as "natural capital" promises to provide a relatively stable framework for sustainable economic growth aspiring to be globally relevant as well as making it possible to shift the current environmental debate on to the fertile grounds.

While setting the scene in the first part of the book, Helm promotes the argument that existing price mechanisms and technologies always had the capacity to alleviate environmental constraints, much in contrast to the careful observations made by the Brundtland Report. Helm also pronounces in the book that since the world faces no imminent resource crunch, one exclusively needs to focus on the depletion of "renewable" natural capital assets only and the services they provide for free as well as their economic impacts on growth and sustainability. Therefore, he outlines a non-declining aggregate natural capital rule that not only helps to identify which resources should matter the most and how limits can be posed on the intergenerational use of the resources, but also aims to act as a basic organizing principle for substitutability between natural and man-made capital.

In order to put the aggregate rule into practice, the second section of the book delineates the steps to maintain natural capital by accounting and measuring natural assets. Besides establishing a set of national, corporate, and trust accounts, Helm delineates ways to identify the assets-at-risk through technical measurements and identifying thresholds, preparing risk registers, and so on. The monetary valuing of these natural assets is based on a

set of caveats concerning how the prices need to be high enough to keep the assets above the threshold. Similarly, distinguishing the system limits, the problems of the commons, and the role of marginal analysis are seen as critical.

Last section of the book describes the practical policies to correct the way natural capital is valued in society and the decisions that are taken around it. Here, Helm draws out the policy on compensation for the depletion of non-renewables and renewables separately for the intergenerational equity issue in the former and breaching of the threshold in the latter. The basic premise in this policy proposition is that each environmental cost has a substitution cost that can easily be met with either a compensatory fund in the case of non-renewables or by simply identifying offsets in the case of renewables. Taxing pollution is seen as complementary to compensation but not equivalent as the questions are different with regard to identifying the polluter and what they should pay. The policy on common goods is underpinned with the ingenuous idea that such public goods require scrutiny if they need to be either enhanced or saved from any deterioration.

The last section provides a framework for the crucial steps/policies that governments can apply or choose in order to leave the natural environment in a better state for the next generation. For that, what is considered critical is not only to simply conserve the resources but to develop large-scale restoration plans for the land, rivers, and marine environments. For regulation and funding of such plans, an easy sketch map of finance and also the selection of new institutions are required so that the cause of natural capital can be outlined. The book concludes by emphasizing how increasing population and hence the need of economic growth forces us to take the idea of natural capital further.

Helm's metaphorical concept of natural capital, first seen in David Pearce and colleagues' *Blueprint for a Green Economy* (1989), gives an appearance of a perceived objective ontological status. However, I would see this

conceptual amplification in the form of creating financial markets for water, soil, and air as a subjectively constructed exercise. It is clear that the universal abstraction of placing nature externally from the human realm and then reducing it to an "asset" from which dividends can flow indefinitely is discursively and technically constructed through an expert discourse of economics. While following the French philosopher Michel Foucault (1991), I view this systematic disciplining of the social (Sullivan 2013) within the idea of natural capital as a way to create "nature" as an object of control over which expert power can be exerted (see also Murray Li 2007). However, at almost every possible turn, Helm in this book tries to disassociate natural capital from business-as-usual or Keynesian economics. He claims to have inverted the analysis despite it being obviously rooted within contemporary economic positivism, clearly marginalizing several other culturally resonant evaluative criteria. Hence, I would consider *Natural Capital: Valuing the Planet* an important book to help us understand the proliferation of authoritative propositions on "nature" in the existing political-economic scenario. But for teaching purposes, I would recommend that it be placed within its larger disciplinary context so that it can be suitably evaluated.

Alka Sabharwal

University of Western Australia

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In 1982, construction began on a large gold-copper deposit in western Papua New Guinea. The mine was called Ok Tedi—a local term that means a fishing dam or weir. Despite initial plans to build a tailings dam, a landslide combined with political uncertainty buried those plans in 1984. Thus, in the process of extracting first gold, then copper, the Ok Tedi mine has discharged more than two billion metric tons of tailings, overburden, and waste rock into the Fly River system. This mass volume of waste, and its continued impact on the people who must live in its presence, orients and grounds Stuart Kirsch's *Mining Capitalism: The Relationship between Corporations and Their Critics*, a magisterial analysis of Ok Tedi and the global mining industry as a whole. This is Kirsch's second book and represents the culmination of nearly three decades of research on mining conflicts in Papua New Guinea and globally.

Despite opposition from downstream populations, allied NGOs, and the adjudication of mining giant BHP (major shareholder in Ok Tedi) in Australian courts, riverine tailings disposal from Ok Tedi continued unabated. *Mining Capitalism* examines how this is possible. In doing so, Kirsch analyzes the means through which local/global alliances seek redress for environmental and economic harm and the process through which mining companies respond to, undermine, modify, and ignore those claims. The story of two billion tons of waste working its way through Papua New Guinea's Fly River is, therefore, an account of how mining companies contend with their critics. As such, it is also a broader story

about the workings of capitalism, especially for "harm industries" like mining.

The first half of the book (chapters 1–3) centers on Ok Tedi. In chapter 1, "Colliding Ecologies," Kirsch describes the conjunctures that first gave Ok Tedi a "license to pollute" (51) while emphasizing the extent to which subsequent riverine tailings have undermined the ecological basis of downstream livelihoods. Chapter 2, "The Politics of Space," chronicles the campaign against Ok Tedi, focusing on both the wider currents of international environmentalism and the individual personalities that helped globalize Ok Tedi. In chapter 3, "Down by Law," Kirsch details the process through which downstream populations successfully challenged BHP in Australian courts in the mid-1990s. The sense of victory was short-lived, however: monetary compensation ended up being less than promised and BHP sidestepped addressing waste disposal.

One of the dominant themes in the first three chapters, which resonate throughout the book, is the evolving process of opposing environmental harm. Time is on the side of the mining industry. Allied networks and coalitions are inherently precarious. Ok Tedi continued to dump mining waste even as the court system came to render judgment against BHP. Success, in this sense, only changed the chemistry of the problem. The accumulating tons of tailings and overburden have so undermined downstream landscapes that locals end up in the paradoxical position of wanting operations to continue as a way to maintain some degree of compensation.

In the second half of the book (chapters 4–6), Kirsch extends insights from Ok Tedi to think about the prevailing ways that mining companies deny and deflect environmental critiques against them. Chapter 4, "Corporate Science," describes the way mining companies use and abuse scientific knowledge, be it false optimism of environmental impact studies or the ways companies inject uncertainty and doubt into contravening information. Chapter 5, "Industry Strikes Back," outlines the strategies that companies employ to silence

and co-opt their NGO detractors, from adopting the language of environmental sustainability to fostering partnerships with large conservation organizations. Chapter 6, “The New Politics of Time,” discusses new ways that communities and allied organizations are challenging mining companies by opposing projects earlier in the mining cycle, before extraction begins. In doing so, Kirsch also examines the social life of “informed consent” and the place of local, indigenous voices in authorizing or rejecting new mining projects.

One of the key takeaways in the second half of the book is the typology of industry response to criticism. From the production of inadequate baseline studies (making evidence of impact difficult to claim) to the rhetoric of “naturalizing pollution” and the co-option of environmental and academic institutions, *Mining Capitalism* presents a framework to interpret and make sense of industry language and action. From this perspective, I hope the book finds a place on the bookshelves of professional environmentalists as much as it does academics (a more likely prospect given the book’s inviting, accessible language).

From the opening of the Ok Tedi mine in the 1980s to the evolving relationship between mining companies, NGOs, and communities in the present era, *Mining Capitalism* covers a wide expanse of temporal and spatial ground. This is possible, in large part, because of Kirsch’s long-term fieldwork in Papua New Guinea and active participation in the global processes that the book describes. There is something rather extraordinary about the way Kirsch, writing in 2014, is able to quote from material that he published in a Papua New Guinea newspaper in 1989; or the way that Kirsch’s analysis of the legal case in the 1990s includes his own involvement in the proceedings; or how Kirsch’s insight into the World Bank’s extractive industries review (2003) comes from his own participation in the process. These dynamics not only reflect the depth of experience and material of *Mining Capitalism*, but also say something about the timescales and shifting political contexts

that research on the mining industry often requires.

Kirsch describes himself as inherently cynical. In light of ghost forests along the Ok Tedi river and the devious ways mining companies undermine opposition, it is not hard to see why. And yet, notwithstanding the book’s acknowledgment of the inherent limits of the legal system and networked NGOs, what I appreciate about *Mining Capitalism* is its overall tone. While it provides a sobering account of “the possibilities and the limitations of political engagement” (234), *Mining Capitalism* leaves little conceptual space for standing idly by in the face of ongoing social and environmental injustice.

David Kneas  
University of South Carolina

Krüger, Fred, Greg Bankoff, Terry Cannon, Benedikt Orłowski, and E. Lisa F. Schipper, eds. 2015. *Cultures and Disasters: Understanding Cultural Framings in Disaster Risk Reduction*. New York: Routledge. 282 pp. ISBN 978-0415745604.

Recent changes in climate behavior characterized by the increasing severity and frequency of extreme environmental disasters present challenges for community members living in hazard-prone areas throughout the world and for scholars and practitioners working in the field of “disaster risk reduction.” *Cultures and Disasters: Understanding Cultural Framings in Disaster Risk Reduction* is an edited volume that provides a rich collection of theoretical and practical case studies that highlight the significance of culture for enhancing understandings of responses to natural disaster events and for devising disaster-response strategies that are responsive to local socio-cultural contexts.

While the significance of culture for understanding local responses and for understanding the tensions that often exist between local communities and official disaster response institutions in the environmental disaster context have received extensive coverage in an-

thropology, the other social science disciplines until recently tended to downplay the significance of culture in the scholarship of environmental disaster. Although more focus is now being given toward understanding culture, a considerable amount of the recent disaster risk reduction scholarship continues to reflect an epistemological and ontological bias, with culture still being relegated to the status of a social “add on” without questioning the Western ontological separation of the social and natural worlds that is used to frame the scholarly analyses of non-Western responses to disaster events. While recent interdisciplinary studies demonstrate increasing interest in “applying” culture to solve challenges posed by climate change, this requires enhanced focus on the deeper intricacies and multitude of ways that culture reveals itself in disaster-ridden contexts. Thus, the timing of the publication of this edited collection is particularly appropriate for contributing to the scholarly movement away from developing generalizable response models and movement toward gaining a deeper understanding of what culture is and the role that it plays in disaster risk reduction contexts.

The edited volume is composed of an editorial introduction and fifteen individual chapters divided into three sections, but which could each stand alone as individual articles in themselves. The introduction explores how both disaster risk and response are culturally and spatially embedded and suggests that a detailed understanding of how culture operates within specific locations is required in order to facilitate more meaningful disaster risk reduction interventions for tackling the impacts of climate change. Section one contains five theoretical and methodological chapters that each deconstruct conceptualizations of disasters by exploring the different ways of framing risk within the scholarship on hazards and disasters. Each chapter reveals an example of how perceptions of risk are culturally devised, with Kenneth Hewitt drawing attention to the importance of culture in the development of securitization theories and

Antony Oliver-Smith exploring how neoliberalism has shaped disaster risk reduction strategies. Greg Bankoff demonstrates how the built environment reveals a visible manifestation of local considerations of and responses to disaster risk and reminds us of the significance of the material environment as well as the ontological environment for understanding culture. Following from this, Gerrit Jasper Schenk provides an analysis of learning from the history of disasters and highlights how different cognitive concepts and models of nature shape conceptions of risk, which then leads on to Terry Cannon’s insightful exploration of how cultural beliefs and behaviors shape adaptive capacities to climate-change phenomena.

Section two is more empirically focused than the theoretical chapters in section one, containing four chapters that each explore the link between culture and the production of vulnerability and adaptive capacity to disasters and describe how aspects of culture are shaped and communicated throughout the course of day-to-day life. James Lewis discusses the significance of contra-cultures in the context of disasters with Klaus Geiselhart and colleagues illustrating through a case study of the HIV/AIDS epidemic how exceptional events shape innovative ways of coping with risk. The link between disasters and religion is explored in E. Lisa Schipper’s detailed examination of how belief systems drive vulnerability and at the same time provide the crucial entry point for resilience building with local belief systems and ontological perceptions functioning to enable local communities to interpret and make sense of disaster events. This is followed by Andrew Crabtree’s discussion of the psychosocial consequences of disasters, which uses Bourdieu’s interpretation of risk approaches to analyze how cultural expectation influenced local responses to the 2008 floods in Bangladesh.

The link between culture and the development and realization of effective disaster risk reduction strategies and intervention programs is explored in section three, which also

reveals how disaster risk reduction is in itself a cultural institution and presents a critical analysis of the structural and discourse inequalities inherent in processes of devising and implementing disaster response activities. David Alexander highlights how celebrity culture, fueled by mainstream media portrayal, influences public opinion about victimhood in post-disaster contexts and discusses the consequences of this for disaster recovery funding provision. This is followed by Brian Cook's discussion of how disaster response practitioners have attempted to deploy local knowledge in the flood management context, where he draws attention to how cultural inequalities lead to uneven power dynamics and imbalances in decision making on managing disasters and the consequences of this. Ilan Kelman and colleagues explore the possibilities of combining different knowledge systems in devising disaster response programs, drawing on case studies from "Small Island Developing States." The significance of gender in shaping disaster response is discussed in a detailed chapter by J. C. Gaillard and colleagues, which reveals how culture influences local gender categorization systems beyond the Western binary sex-based gender classification of male and female and discusses how this plays out in affecting both vulnerability and adaptation to disaster in the Philippines. The chapter describes the need for integrating local gender perspectives in disaster risk reduction strategies by showing how the vulnerabilities of culturally-defined gendered groups that do not fit within the Western male versus female categories increases when not adequately catered to in the immediate post-disaster phase. Following from this, Joern Birkmann and colleagues examine how the effectiveness of local flood warning systems in Indonesia could be enhanced by accommodating local cultures into information dissemination processes by illustrating how religious symbols provided an effective strategy for enhancing local willingness to evacuate during tsunami warnings in Indonesia. In the final chapter, Voss and Funk discuss the tensions and

uneven power dynamics between indigenous worldviews and mainstream official response agencies, explaining how indigenous interpretations of disasters that do not follow the epistemologies of Western science are sidelined by the privileging of response strategies grounded in the ontologies, language, discourses, and practices of Western science by official disaster response organizations who continue to devise and lead the majority of post-disaster intervention and reconstruction activities.

With its focus on culture, the edited volume presents a refreshing critical look at disaster risk reduction considering that the majority of disaster risk reduction intervention developments continue to devise response strategies for application in a wide range of varied cultural settings from the perspective of their own cultural lens. The volume draws attention to the diversity of local responses, highlighting how viewing responses from multiple cultural contexts from a single Western cultural perspective suffocates appreciation for the diversity of local responses and undermines local, culturally developed adaptation skills. Although the importance of understanding and applying local knowledge in disaster risk reduction is evident throughout the book, the relatively short length of each chapter, coupled with the fact that the evidence presented in each chapter is given solely from the perspective of each author(s) could lead to suggestions that the volume lacks the input of local voices, narratives, and discourses. The absence of quotations from interviews with local citizens, narratives of local experiences of disaster events, and rich ethnographic descriptions of interactions between the author(s) and local actors could leave the volume open to criticism for inadvertently contributing to the unequal power dynamics that remain inherent in contemporary disaster risk reduction scholarship and practices. However, while the lack of local voices is a serious point to consider, it is worth noting that the volume is intended to serve as a guided introduction to the importance of culture in disaster risk reduction for

interdisciplinary scholars and practitioners. Therefore, while it might not succeed in counteracting power imbalances in representation, this was never the actual intention, and the volume does succeed in signifying the need for consideration of alternative worldviews in disaster risk reduction. Through the diversity of contextual settings explored, the volume leaves the reader in no doubt as to how variations in culture result in diversities in responses to disaster, which effectively calls the power and privileging of Western scholarly and scientific institutions into question.

The volume resists providing a unified definition of culture. While the lack of a clear definition could invoke criticism for a lack of specificity, it can also be argued that this lack of specificity is one of its main strengths as it is precisely the avoidance of oversimplifying culture or providing rigid standard definitions of culture that prevents the standardization of meaning and helps the volume to avoid falling into “essentialism” whereby other cultures are analyzed through narrow Western perspectives of what culture entails. Instead, the more vague description of culture as a fluid, open-ended, flexible, and changeable phenomenon provided in the introduction encourages the reader to consider the variety of ways that culture can be interpreted across different contextual settings and to rethink how it can be applied more effectively in disaster risk reduction. While the lack of an overarching concluding summary at the end of the volume or a set of specific points for the reader to take away and consider may appear to leave the volume somewhat open-ended, again this can actually be regarded as one of the volume’s strengths as it encourages readers to think beyond standardized modeling or generalized sets of recommendations for developing effective disaster risk reduction strategies and invites the reader to adopt a more thoughtful and reflective approach to thinking about how culture frames their own understandings of disaster and how the ideas presented in the volume might apply to other cultural settings of interest.

Given that the volume’s focus is on highlighting how perceptions of risk are cultural constructions, perhaps what is surprising is a lack of direct engagement in exploring how conceptualizations of disaster events as “natural disasters” as opposed to technological disasters is actually a cultural construction itself, embedded in Western ideas about the separation of the natural and social worlds and one which has been increasingly challenged in light of recent climate change studies and explorations of non-Western ontologies that reflect the interconnectedness between the human and ecological environments. However, considering that the volume aims to introduce readers to a variety of scholarly disciplinary backgrounds to think more about the significance of culture in relation to disasters, it could be argued that more complex debates about ontologies in the social construction of disasters could be off-putting for a reader who is unfamiliar with anthropological or indigenous studies scholarship.

What makes this edited volume particularly unique, and what could be regarded as its strongest contribution to the existing scholarship, is its multidisciplinary approach, with the combination of the theoretical, methodological, and empirical contributions ensuring that the volume is relevant to a wide range of scholars and practitioners. While the majority of books exploring the human dimensions of disaster tend to focus on strong geographical or disciplinary perspectives of particular disasters, the volume actively encourages thinking beyond traditional disciplinary boundaries and perspectives in the exploration of disaster and in relation to the development of new disaster risk reduction interventions. The clear outline of the aims of the book, overviews of each section, and brief description of the contents of each chapter in the introduction provide the reader with direction about how to approach reading the collection, which should ensure that undergraduate students as well as those new to disaster or culture studies are able to understand each individual chapter within

the wider context of developments within the field of disaster-related studies.

*Irena Leisbet Ceridwen Connon*  
University of Dundee

McGregor, James H. S. 2015. *Back to the Garden: Nature and the Mediterranean World from Pre-history to the Present*. New Haven, CT: Yale University Press. 384 pp. ISBN 978-0300197464.

This book is deftly summarized by its jacket text that is as bold as it is unusual, stating that “[t]he garden was the cultural foundation of the early Mediterranean peoples; they acknowledged their reliance on and kinship with the land, and they understood nature through the lens of their diversely cultivated landscape.” Equally unexpectedly, it opens with the dramatic sight of Venice struggling with rising waters and sinking into its muddy lagoons. The point is that Venice’s decay began when the city lost its autonomy to expansionist imperial powers by the end of the eighteenth century; it leads to the conclusion that severing the ties between the city and its immediate environment inexorably set in motion the decline that we witness today. Heralded by the rhetorical question “How Did We Get There?” (1), the tone is set for the remainder of the book. The closing pages of the introduction (8–9) propose the concept of First Nature, which is defined as a “consensus on the constructive management of the earth ... that had developed along with agriculture.” The book’s core thesis is that this consensus withered away with industrialization and globalization over the past two hundred years or so, ushering in the “current age of crisis.”

Following the introduction, the book is organized in three parts that roughly map the three periods implied in the opening chapter, which are the rise, decline, and crisis of First Nature. The first six chapters explore how First Nature was forged, and they accordingly concentrate on the early days of agriculture in the ancient Near East and Mediterranean in

chapters discussing late Paleolithic gatherers and hunters, Neolithic farming, and the rise of civilization in Mesopotamia and Egypt. Under the heading of “Perseverance and Attack,” the following six chapters move forward in time to Classical Antiquity and the Middle Ages, examining topics as diverse as Roman agriculture, Muslim ecological understanding, and Renaissance landscapes. In these centuries, the rot set in, even if environment and socio-political development maintained some kind of balance, however precarious it was becoming. The third part is made up of just two chapters to discuss the “Age of Crisis” that the author argues took hold in the final decade of the eighteenth century CE. He does not mince his words and in the chapter entitled “Silence, Loss, and Catastrophe,” we are told that as “unprecedented political, cultural, and economic change” took hold, local knowledge and ecological awareness were swept aside to make space for rational resource exploitation at ever increasing scales. The end result is “The Modern Mediterranean,” which has become an ominous label for abandoned fields and villages and tourist developments of coastal resorts, boutique olive groves, and upmarket vineyards. As the concluding chapter asks “What Is To Be Done?” it turns out, somewhat surprisingly, that it is not all doom and gloom in the Mediterranean countryside: even if Venice may no longer be able to extricate itself from the wetlands from which it has become alienated and it is now sinking into, elsewhere in the Mediterranean the author sees plenty of elements that give hope for the future, as “in many parts of the Mediterranean ... vestigial landscapes commemorate First Nature, even though men and women have forgotten” (299).

The fundamental concept of this book is that of “First Nature,” as this broad survey of Mediterranean social and environmental history is entirely predicated on the evaluation of how well past societies were attuned to First Nature and gradually turned away from it. Its most explicit definition comes as part of a discussion of Bronze Age Mesopotamia

and the northern Levant, roughly the northern regions of modern-day Syria and Iraq. Pulling together myths, literary texts, and epigraphic documents from this wide region and from several millennia, James McGregor asserts that “[t]hat original Neolithic worldview [that is, First Nature] pictured the universe as a partnership between the human and biological communities that was exemplified and symbolized by their meeting place, the landscape shaped for cultivation” (95–96). It is less clear, however, whether or how that “partnership” translated in agrarian practices and settlement on the ground, since those are only discussed in the broadest of terms, noting that these great civilizations all developed sophisticated water and land management systems. A key feature of First Nature is continuity, that the “Neolithic consensus” remains recognizable and coherent over many millennia and across thousands of miles of steppe, highlands, and sea, not just as an unconscious practice, but as an explicitly articulated stance, as McGregor detects its presence in the writings of Homer and Hesiod in first millennium BCE Greece, in Lucretius’ learned epic poetry of the first century CE, and in early Christian theological debates and Islamic religious codes.

The point raised by McGregor, albeit more implicitly than explicitly, is an important and interesting one, as he inquires how and to what extent attitudes to land and the environment depend on and/or are created by actual agricultural practices. Both archaeologists and anthropologists have long drawn attention to the cultural and social dimensions of landscape (e.g., Ashmore and Knapp 1999; Hirsch and O’Hanlon 1995), and McGregor is certainly not the first one to argue that the emergence of agriculture went hand in hand with substantially different attitudes to the environment (e.g., Hodder 1990). Likewise, McGregor is surely right to argue that the late eighteenth century CE was a pivotal moment for at least European experiences of and engagement with landscape, as has been demonstrated convincingly for High-

land Scotland in the “Age of Reason” (Dalglish 2001).

Unlike McGregor’s insistence on the unity and coherence of the “Neolithic consensus,” however, these same scholars have also insisted on the contextually situated and historically contingent nature of perceptions and constructs of landscape. Given the huge stretches of time and swathes of land and sea considered, and the wide-ranging cultural variability that went with those regions and periods, it is hard to see why we would even expect there to be such a stance or “force” like First Nature that remained coherent over many millennia.

But academic debates like these are not what McGregor is interested in, at least not primarily. As should be abundantly clear by now, his is not a regular scholarly study of environmental history or archaeological ecology in the Mediterranean; its author is in fact not a historian or archaeologist either; James McGregor is emeritus professor of comparative literature. While neither observation detracts from the quality or relevance of the book, McGregor’s aim is to change the world, or rather, to change it back to a time when in his view things were better. Rather than academic analysis, it is a nostalgic yearning to a better time that once was that drives this book—and it does that well, as McGregor has written a fine book that is well-informed and well-written to make his case with passion.

*Peter van Dommelen*  
*Brown University*

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Moore, Jason. 2016. *Capitalism in the Web of Life: Ecology and the Accumulation of Capital*. London: Verso. 336 pp. ISBN 978-1781689028.

Readers will be understandably wary of one more book insisting that salvation (or at least survival) lies in dissolving modernism's habitual distinction between the natural and the human. Works by Donna Haraway, William Cronon, Bruno Latour, and Karen Barad are now staples of the undergraduate curriculum. The social-theoretical exploration of technoscience and of environmental change remains vigorous and well staffed across the disciplines. The deluge of writing addressed to sociality across the species, "ontologies," and the post-human future shows no sign of letting up in the near term. Under such conditions one may wonder what remains to be learned from a new volume developing the familiar argument that "the old language—Nature/Society—has become obsolete" (5).

In the first pages of his *Capitalism in the Web of Life* Jason Moore acknowledges that the existing field of binary-banishing criticism is already crowded. "Cyborgs, assemblages, networks, hybrids, and many more have been offered as a way forward," he observes. But Moore's premise, and his justification for what follows, is that so many theoretical dismissals of human/nature dualism have yet to give rise to a robust analytic framework, one that would allow contemporary critics to grasp historical processes in some genuinely non-dualistic way. What he claims we lack, and what he aspires to establish, is a "bridge between philosophical claim and historical method" (12). That is, we may go on claiming ad infinitum that nature and the human should not be thought in isolation from one another, but we have yet to understand the

claim in any rich sense until it is expressed in some new, *longue durée* historiographic style. The point is debatable. But *Capitalism in the Web of Life* is an attempt to model such a style, a "new paradigm" that Moore trademarks as "world ecology" (3).

So what does world ecology look like, and what can it do? Moore takes pains to say what it is not. His argument takes form in opposition to what he characterizes as the catastrophist mainstream of environmentalist thought. Much of the book is given over to repeated criticism of everything from the neo-Malthusian *Limits to Growth* and John Bellamy Foster's notion of the "metabolic rift" to Jared Diamond's *Collapse* and contemporary discussions around the Anthropocene—works whose historiographic conventions, Moore believes, privilege "what humanity does to nature" (5). It is according to such conventions that the environment now appears to us as a fixed limit on which human populations increasingly and catastrophically encroach. Yet these same conventions, Moore insists, implicitly reinstate the very dualism that so many environmentalist critics would explicitly reject.

It is not logical coherence that ultimately worries him. Moore's concern is that environmental criticism in its dominant mode obscures a significant ecological dimension to the historical development of global capitalism, hides the manner in which distinct capitalist formations shape and are shaped through particular environments, and in effect uncouples the linked contemporary crises of economy and ecology. What seems at stake for Moore is the enlargement of what used to be called the "social" totality to include its environment-making force and environmental conditions of possibility. Thus his refrain: analysis should proceed "not from the standpoint of humanity and nature, but from the perspective of humanity-in-nature ... and nature-in-humanity [*sic*]" (49).

This, like Moore's several efforts to coin a post-Cartesian dialect ("the double-internality," "the *oikeios*") is not so enlightening on its own. Yet the approach for which it stands may

prove serviceable. Moore is inviting the reader to envision a “co-productionist” or dialectical relationship between human social orders and the natures in which they are embedded, in which each is remade in dynamic relation to the other over spans of historical time. And this gives expression to a hunch intimated but rarely thematized in much existing political ecology, that “the history of capitalism is one of successive historical natures” (19). It is in Moore’s dogged insistence on “historical nature” over against “nature in general” that he gains some ground.

The notion of “historical nature” at minimum encourages an adjustment in prepositions: here human social organization does not act “upon” a static nature but develops “through” historically specific environments. It is a slight but helpful shift, occasioning questions as to whether the staple objects of social-theoretical analysis—say, processes of class formation and racialization, the international division of labor, varieties of political organization, and political power—are newly illuminated if taken to arise, congeal, and reproduce themselves through a particular organization of nature. But “world ecology” is *world* ecology, and Moore’s ambition is to rethink the full arc of global capitalism as a history of nature.

Drawing on feminist accounts of the necessity of unpaid work to processes of capitalist reproduction, Moore argues that capitalism’s expanding exploitation of labor power relies equally on what he calls “Cheap Nature,” a “rising stream of low cost food, labor-power, energy, and raw materials to the factory gates” (53). As with the unpaid work of women, uncommodified nature is not exploited so much as appropriated; in this way it is an unacknowledged prerequisite for expanding capital accumulation. Thus for Moore the history of the intensification of capital accumulation is simultaneously that of intensified appropriations and transformations of nature—for example, the enclosure of private property, extractive colonialism, technical innovations in agribusiness and transport—which deliver

inexpensive resources “faster than the accumulating mass of surplus capital derived from the exploitation of labor-power” (67).

But if low-cost nature enables a movement of capital accumulation, its depletion and increasing expense also generates a particular form of crisis. Moore observes that as a given resource becomes more dear, rates of accumulation decline. The revolution in nature’s productivity that first established a movement of accumulation can no longer be reproduced. And any such “developmental crisis” is only overcome by reorganizing the relations of humans to their surround, so as to restore the inexpensive flow of raw material. For Moore, this is the scene of the emergence of a new historical nature.

To illustrate: as English agricultural production began to stagnate in the 1760s, national industrial growth turned to rely on imported grain, which commanded vast agricultural and ecological revolutions in Ireland, and later, the American Midwest. In Moore’s account imperialism and primitive accumulation, combined with innovations in transport technology, were the pathways of a sprawling, multi-continent environmental transformation that ultimately launched the British Industrial Revolution. Such is the basic pattern of the developmental crisis as Moore presents it: the appropriation of cheap nature launches a wave of accumulation, increasingly crisis-bound until some combination of power, capital, and science recomposes nature into a new frontier of appropriation.

Moore draws heavily on Giovanni Arrighi’s view of crisis as a wearing-out of the very arrangements that sparked a new movement of accumulation, and like Arrighi he sees developmental crises marking the transition between “long centuries” of world-ecological development, with the aforementioned British era succeeded by the era of American Fordism (itself co-produced with the Middle Eastern oil frontier and high-output industrial agriculture), and then our present “neoliberal cycle” (120). The contemporary phase, however, sees a revolution not in commod-

ity production but in finance, an innovation whose limits are evident in the recent swelling of food, metal, and energy prices. Moore suggests that this ongoing failure to organize nature toward renewed productivity, along with the increasing cost of waste processes most evident in climate change, points away from developmental transition to “something more epochal: the breakdown of the strategies and relations that have sustained capital accumulation over the past five centuries” (1).

*Capitalism in the Web of Life* is an exhaustive synthesis that weaves critical political economy together with environmental history and critical geography. Readers will appreciate its ambition. Moore’s explication of “historical nature” may prove useful. And the book’s premise, that the theoretical argument against dualism remains to be operationalized as method, is a spur to thought. “World ecology” is a start in that direction. One looks forward to others.

Cameron Hu  
University of Chicago

Piper, Karen. 2014. *The Price of Thirst: Global Water Inequality and the Coming Chaos*. Minneapolis: University of Minnesota Press. 296 pp. ISBN 978-0816695423.

Karen Piper, as a professor of postcolonial studies in English and geography at the University of Missouri, stays true to her research history of focusing on the rhetoric behind globalization efforts, development projects, and environmentalism in *The Price of Thirst: Global Inequality and the Coming Chaos*. This critical, journalistic exposé on the trials of water inequity as they occur through varied iterations of management regimes in California, Chile, South Africa, India, Egypt, and Iraq expertly utilizes the strength of multisited ethnography. This is accomplished through representing several loci within which provable patterns of privatization processes causing water issues with political, economic, and

social ramifications become apparent. Each example is a solid reiteration of the whole of the argument: that the “price of thirst” is disease, degradation, and disruption, increasing the rates at which “vulture capitalism” swoops in on weak economies (217–222). The absence or presence of water rights is metaphorically compared to the health of one’s blood. Just as it is essential to health to have blood flowing freely and evenly through the body, the equitable and free flow of water is essential to life and short-sighted measures to control and partition those flows creates an “anemic and toxic” stream (219).

This is demonstrated through stories of water struggles as they occur in localized or nationalized processes. While Chilean water was almost completely privatized to a single company (Endeza) under the Pinochet regime, water in drought-stricken California is hoarded by rich private investors while indigenous groups try to claim their stake on Tulare Lake. Meanwhile, postcolonial South Africa and India see neocolonial courses of action controlling their water resources through class- and race-based diversions of water supplies, with South Africa experiencing an “economic apartheid” while the religious sanctity of the Ganges in India is threatened. In Iraq, which once had excellent water infrastructure, the destruction caused by US military involvement and Hussein’s wartime acts has obliterated water infrastructure. Meanwhile in Egypt, government corruption and misallocation of resources to richer areas has led to sometimes religious, extremist revolts as the few water sources such as the Nile become overrun with pollution. A reoccurring exacerbation to water problems in some of these cases is the construction of large-scale dams, the detriments of which Piper explores socially and environmentally. Importantly, all ethnographic examples are deeply entrenched in the political and social ideologies and discourses that hold deep personal meaning to those involved, expressed in interviews and research, making the stakes of loss and gain apparent as more than just water access.

In many of these situations, pressures from corporate interests on how to manage water are at the forefront. Suez, Endeza, Veolia, and Bechtel are just some of the water corporations mentioned that, like the international institutions of the International Monetary Fund and World Bank, have repeat records of misappropriated or poorly tracked use of funds, incompleteness and delay of projects, deliberate misguidance and opaque information on plans and practices, and diffusion of responsibility and reason through neoliberal discourse. Piper also mentions US concerns toward communist “turns” in resource management processes influencing some of its interventions, especially in Chile, South Africa, and Iraq. Ultimately, Piper attempts to create a picture of “water marketing” within privatization and commodification, suggesting it is a generally excluded yet important concept to these processes of buying and selling water. She argues that in “water marketing”, the water itself is commodified and privatized in more “insidious” manners than the privatization process of, for instance, a water treatment plant (33). While the “insidious” and secretive natures of “water marketing” are apparent in the text, an understanding of the precise differences between “water marketing” and privatization and commodification remained hazy.

Piper utilizes a wide array of influential, relevant, and interdisciplinary references to situate her work, representing the need to bring in critical literature from an array of disciplines in order to discuss water issues adequately. However, including previously existing ethnographic texts on water privatization and commodification for each of the specific areas she chose to evaluate could have helped provide solid reiterations and echoes of her arguments by reinforcing the presence of these localized experiences in other ethnographic projects. For example, citing Kelly Alley’s exploration of multilayered concepts of water purity and pollution in the Gaṅgā (Ganges) (2002) would have deepened Piper’s claims about the ritual and religious impor-

tance of the Ganges to many Indian people. While the text is not necessarily theoretically dense, theoretical concepts are applied when appropriate, such as the concept of “accumulation by dispossession” as utilized by Erik Swyngedouw (2007). The ultimate goal appears to be an on-the-ground action replay of the events surrounding water issues in specific regions, and this goal is realized. This is accomplished through Piper’s historical and ethnographic detail and journalistic style, presenting pointed investigative narratives of the processes occurring.

This text is a highly accessible resource for undergraduate and graduate students specializing in topics of ecology and environmental studies, anthropology, political science, geography, and even journalism. It provides several ethnographically rich and culturally specific examples of how neoliberal national and international interests in privatization and commodification of water express themselves in complex and often negative ways through multiple outlets. Importantly, the author offers a set of solutions based on her experiences and evaluations that could be important avenues of research moving forward. She stresses the need to address climate change, curtail mass relocation for water projects, recognize and utilize indigenous and local knowledges in creating policy, utilize more small-scale, localized solutions, regulate “virtual water” in agriculture and production, imagine alternative or cooperative constructions of water infrastructure, and “reform the globalization regime” (222–227).

In conclusion, Piper cohesively represents the complexities and complicities in water management and human rights to water, accomplishing her goal of helping “return cultural diversity to the management of the world’s water supplies” (36). Localized, historicized examples paint pictures of the lived experiences with water inequity through personal and variable interviews, critical and shrewd analysis of the actions and secrets of corporate and governmental interests, terrifying revelations of the future environmental

concerns and disasters that await following certain water management processes, and suggestions for moving forward that have been proven urgent. All of these aspects make this text a well-informed choice for those interested in studying water scarcity and inequity in its postcolonial and neocolonial forms, as well as those looking for a fair way forward with emboldening examples of what happened to those who have been fighting toward that goal in the meantime.

*Brittney Hammons*  
*University of Texas at San Antonio*

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- Schneider-Mayerson, Matthew. 2015. *Peak Oil: Apocalyptic Environmentalism and Libertarian Political Culture*. Chicago: University of Chicago Press. 280 pp. ISBN 978-0226285436.

In the midst of today's shale oil and natural gas boom, it is easy to forget that a mere decade ago, many Americans were convinced that the world had entered a permanent age of cheap oil scarcity. In this engaging book, Matthew Schneider-Mayerson delves into the political, cultural, and social world of these Americans. Between 2004 and 2011, a critical mass of largely white, middle-aged, middle class, politically liberal men embraced "peakism," an ideology that predicted that the oil supply—along with abundant supplies of cheap water, food, fish, and irrigable soil—would soon peak, bringing an abrupt end to petro-capitalism and ushering in a post-

carbon future. This prediction was catalyzed by three traumas of the Bush era: the US invasion and occupation of Iraq (which many peakists interpreted as a resource war); a rise in oil and gas prices after two decades of relative stability; and growing public awareness of anthropogenic climate change. These catalysts spurred the birth not of a social movement, but rather what Schneider-Mayerson calls a dense information hub. Through the creation of an elaborate, virtual online community, comprised of websites, blogs, podcasts, video games, and forums, peakists discussed books like James Kunstler's 2005 *The Long Emergency*, followed the insights of "peak shrink" Kathy McMahon (whose psychotherapeutic approach was transformed after she came to peak oil awareness), exchanged information about lifestyle changes that might reduce their dependence on fossil fuels, and recommended peak oil fiction and Hollywood disaster films that offered post-apocalypse scenarios. Bringing together literary and discourse analyses of these sources and his own interviews with peakists, Schneider-Mayerson creates a rich portrait of an early twenty-first-century worldview that called into question the sustainability of petro-capitalism and that challenged long-held tenets of US progress, abundance, and techno-optimism.

Schneider-Mayerson's primary goal is to uncover the contradictions within peak oil ideology and to ask what peakism might tell us about transformations within recent US political culture. On the one hand, Schneider-Mayerson found that most peakists held distinctly liberal views: they voiced support for gay marriage, registered an awareness of enduring racial inequality, were critical of US militarism and imperialism, and were deeply skeptical of patriotism. But simultaneously, their worldview indexed the rise of what he calls libertarian political culture. Here, Schneider-Mayerson is referring not to a formal affiliation with the Libertarian Party, but to something more diffuse: a decline of trust in social institutions that transcends partisanship, an embrace of an individualist ethos,

a lack of confidence in the state's capacity to respond to crisis, and a sense of exhaustion vis-à-vis the government, which was no longer perceived as possessing the regulatory and remedial tools required to address the immense challenges posed by oil scarcity and climate change.

This libertarian political culture pervaded peakism at the levels of content and form. Most peakists prepped for a post-carbon future alone by stockpiling food, making their homes more energy efficient, driving less, and embracing DIY (do-it-yourself) practices. After coming to peak oil awareness—a process that many adherents described in terms akin to a religious conversion—peakists were *less* rather than more likely to engage in traditional forms of social protest, including voting, attending marches and meetings, or participating in rallies or protests. This stands in sharp contrast to earlier moments in US history—notably the 1960s and 1970s—when a new public awareness of environmental danger spurred hundreds of thousands of people to political action. Instead, peak oil ideology represented a withdrawal from the political arena. This was facilitated by peakists' heavy reliance on the Internet, a technology whose history is bound up institutionally and ideologically with the spread of libertarian ideals. While many scholars have touted the Internet's potential as a seedbed for political organizing, Schneider-Mayerson finds the opposite; digital technologies depoliticized peakists, who underestimated the size of their own constituency. Over half of Schneider-Mayerson's interviewees never met a fellow peaker, and most had never been part of a collective action, an affective experience that can replace fatalism and despair with hope and possibility. Peakism was thus complex and elusive. At its most radical, it challenged the presumption that an energy intensive, petro-capitalism could be endlessly reproduced through the

right technological fix. But this radical stance was tempered by political exhaustion, a collapse of faith in the power of collective action, and a deep sense of alienation. This alienation was compounded by the social marginalization of peakists, who learned not to discuss peak oil and related topics with friends, relatives, and co-workers. Within a culture that prized optimism and positive thinking—captured by the current neo-liberal mantra that “it gets better”—peakists emerged as the consummate downers.

The strength of *Peak Oil* resides in its judicious, even-handed approach. Schneider-Mayerson neither idealizes nor vilifies his subjects. He commends them for their insights about petro-capitalist constraints, yet he does not hesitate to call out their limitations. For example, in a fascinating final chapter on the racial and gender dynamics of peak oil, he reveals that peakists often imagined a post-oil future as a reversion to a rugged, pioneer, white masculinity that aimed to “make men hard again” (142). This reversion to white patriarchy—what Schneider-Mayerson calls “retrosexuality”—registered cultural anxieties about masculinity and whiteness in an era of feminism, deindustrialization, multiculturalism, and a late capitalist economy dominated by automation and service work. Ultimately, however, Schneider-Mayerson correctly points out that whatever their biases, peakists were attempting to do something extraordinarily difficult: imagine life after petroleum while living in a society fully saturated by it. And today the political fatalism of peakists is unnerving, he concludes, not because it is so rare but because it is so pervasive. The powerful message is that within late petro-capitalism, hope and imagination are in short—but desperately needed—supply.

Natasha Zaretsky  
Southern Illinois University

O: The Contested Terrain. of Water Privatization. Erik Swyngedouw. "Let us review the circumstances once more with special reference to the health. of the workers...they are deprived of all means of cleanliness, of water itself, since pipes are laid only when paid for, and the rivers so polluted that they are. useless for such purposes." many countries around the world, the state managed during the 20. th. century to. those dispossessed do not necessarily passively accept the theft of what they consider. to be rightfully theirs. Secondly, once under the aegis of private capital accumulation Social power and the urbanization of water: flows of power. E Swyngedouw, E Swyngedouw. Oxford University Press, 2004. International Journal of Urban and Regional Research 33 (3), 601-20, 2009. 876. 2009. Dispossessing H2O: the contested terrain of water privatization. E Swyngedouw. Capitalism Nature Socialism 16 (1), 81-98, 2005. Semantic Scholar extracted view of "Dispossessing H2O: The Contested Terrain of Water Privatization" by Erik A. Swyngedouw et al. @inproceedings{Swyngedouw2007DispossessingHT, title={Dispossessing H2O: The Contested Terrain of Water Privatization}, author={Erik A. Swyngedouw and Nik Heynen and James McCarthy and Scott Prudham and Paul Robbins}, year={2007} }. Erik A. Swyngedouw, Nik Heynen, +2 authors Paul Robbins. Save to Library.