

## Book Reviews

Smil, Vaclav. *Feeding the World: A Challenge for the Twenty-First Century*. Cambridge, MA: MIT Press, 2000. 360 pp. \$32.95 (cloth). ISBN 0-262-19432-5.

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The beginning of a new millennium is an appropriate time to examine the condition of our global food production system and our prospects for feeding a world population that now exceeds 6 billion and is expected to grow by 80 million per year. In his introduction, Smil states: "Consideration of the entire food chain, from soil bacteria to optimum diets, makes this book different from virtually all 'can we feed ourselves' writings." And he adds, "As I will try to demonstrate, there appear to be no insurmountable biophysical reasons why we could not feed humanity in decades to come while at the same time easing the burden that modern agriculture puts on the biosphere." Certainly an ambitious undertaking.

He develops his thesis in logical order. The first chapter describes in succinct fashion the chronology of population growth, food production, and dietary transitions, including reference to Malthus's, Paul Erlich's, and Lester R. Brown's pronouncements. Chapter 2 examines key production variables and offers a critical assessment of claims made in the previous chapter. This evolves into the judgment that anthropogenic change will make local scarcities worse while on a global scale our productive capacity will likely suffice. The focus of Chapter 3 is on past and present environmental change and how this impacts our agroecosystems now and in the future. And Chapter 4 lays the groundwork for Smil's relatively optimistic food production prognosis by investigating where opportunities remain for accomplishing higher cropping efficiencies. His examination of the food production side of the equation is completed in Chapter 5, where he delves into the juxtaposition of animal food production and the related questions of efficiencies, inefficiencies, environmental impact, and the emerging role of aquaculture.

Chapter 6 begins Smil's investigation into the forces that influence postharvest losses and food consumption. Here the reader will find very revealing and perhaps eye-opening food balance sheets that clearly point to the consumptive excesses and excessive waste in the "rich world." This is followed in Chapter 7 with a realistic look at actual human food needs and consequences of deficiencies, malnutrition, and hunger, recognizing that data on these topics remain relatively scarce. Chapter 8 focuses on the human diet itself by examining the need to shift to a more rational diet as well as the relationships between food, health, and disease. The final chapter, Chapter 9, features China, a reason for optimism that significant adjustments in food production and consumption systems can, in fact, be accomplished. Smil closes that chapter with the observation that "A combination of well-proven economic and technical fixes,

environmental protection measures, and dietary adjustments can extract enough additional food from China's agroecosystems to provide decent nutrition during the coming generations without a further weakening of the country's environmental foundations." He then suggests for his own book that "A fitting summary of this encouragingly Malthusian book" would be to substitute "the world's" in place of "China's" and "the country's" in his previous sentence.

Clearly, Smil's book is unabashedly optimistic about the potential capacity of our global food production system and the opportunities we have for adjusting consumption to more reasonable levels. The book is well girded with factual information, data, and a balanced array of credible references. It is also instructive, informative, and easy to read. As such, it would offer valuable background reading in undergraduate courses where students would benefit from a first exposure to, or review of, the global food production and consumption condition. In addition, the book would also appeal to the broader intellectual community interested in better understanding the dynamics of Earth's complex food production challenges and other variables that must be addressed with respect to food consumption.

The unit of analysis and focus of Smil's book falls heavily in the biophysical domain. And this makes it possible for the author to develop his rather optimistic perspective of the global food situation. However, there also is a vast socioeconomic dimension that directly influences world food production, food distribution, hunger, and malnutrition. In this domain one finds documentation that a major cause of hunger is poverty and the attendant lack of access to goods and services. Added to this are the problems associated with inequitable distribution of land and disenfranchisement of women. It is argued that famine, once geographically defined by locations afflicted by poor food production, is now more likely to be economically defined by regions of low income. Because a comprehensive assessment of the global food production and consumption condition includes both biophysical and socioeconomic considerations, it is suggested that a companion reading with Smil's fine book might be something like Amartya Sen's *Development as Freedom* (1999), Gordon Conway's *The Doubly Green Revolution: Food for All in the 21st Century* (1999), or perhaps Gary Gardner and Brian Halweil's "Escaping Hunger, Escaping Excess" (2000).

## References

- Conway, G. 1999. *The doubly green revolution: Food for all in the 21st century*. Cornell, NY: Cornell University Press.
- Gardner, G., and B. Halweil. 2000. Escaping hunger, escaping excess. *World Watch* 13(4):25–35.
- Sen, A. 1999. *Development as freedom*. New York: Alfred A. Knopf.

McDonald, Geoff, and Marcus Lane. *Securing the Wet Tropics?* Sydney: Federation Press, 2000. 252 pp. \$39.95 (paper). ISBN 1-86287-349-6.

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McDonald and Lane have used the Wet Tropics rainforest area in the northern part of Queensland to illustrate a global message: that any single land-use decision, no matter how controversial and heavily contested at the time, is only one link in a

historical chain of land-use change. The Wet Tropics of Queensland World Heritage Area (WTQWHA) was the subject of intense and sometimes bitter campaigns in the 1980s, with conservation groups and the federal government of the day pitted against logging interests and the state government of the day. At the time, the focus was on a single question: Would the area be protected for future generations as World Heritage, or would it continue to be cut down as a series of clear-felled coupes to feed local sawmills?

What McDonald and Lane point out is that this debate and decision was only possible because of a previous but now largely forgotten land-use controversy between clearing for agricultural development, and conservation for timber production. If it had not been for the convictions, efforts, and political success of former foresters such as E. H. F. Swain, the biological diversity and scenic splendor of Queensland's tropical rainforest would have been lost long since to canefields and cattle pasture. Of course, much of it was. And in addition, logging practices in the 1920s were very different from those in the 1970s and 1980s. The point is simply that unlike their modern counterparts, in the past it was the practitioners of forestry who recognized the importance of setting aside areas of forest from agricultural clearance.

The second critical issue was that World Heritage designation did not, in practice, provide quite the degree of long-term protection that its protagonists had anticipated. Certainly, it was highly successful in providing protection from the high-volume logging practices that threatened it in the 1980s. But one of the arguments used to support World Heritage listing was that the economic and employment opportunities offered by logging could be replaced by those in the tourism sector. This has indeed proved correct, with tourism generating at least 10 times as much revenue as logging did previously. But the very success of the tourism industry has come at a cost. Tourism itself has environmental impacts that may now threaten World Heritage areas from within. Certainly, the environmental impacts of tourism in these forests are less than those of logging, which in turn are less than those of agricultural clearance. For management of the World Heritage area in future, however, it is critical to control the location, type, and intensity of tourism and recreation, in order to conserve the plant and animal communities, clean water and scenery, and cultural heritage for which the area was listed.

Within this overall theme of sequential land-use change, the individual contributed chapters draw out different components and perspectives. Steve Goosem sets the scene, summarizing the features of the forests that justified their listing as World Heritage, notably the very high biological diversity and large number of endemic plant and animal species. Timothy Bottoms draws attention to a still earlier land-use change, from Aboriginal to European occupation. He also summarizes the various ways in which the rainforest Aboriginal people, collectively known as Bama, traditionally used the rainforest and nearby marine environment. Kevin Frawley provides an extremely interesting historical account of European settlement in north Queensland from the mid 1800s to the mid 1900s. Wild schemes, poor information, unscrupulous speculators, and a dubious role for local government seem to have been a feature of Queensland's land-use politics since the earliest days of European settlement.

Conflicts between forestry and agricultural interests, at the state government level, are then analyzed in more detail by Peter Holzworth. "There have been constant struggles by forestry administrations in Queensland for the better part of a century to reserved forested lands in the public interest, in the face of equally constant demands for alienation of Crown land for [agricultural] development." In particular, Holzworth analyzes the critical role of E. H. F. Swain, Queensland Director of Forests from 1918

to 1924, and Chairman of the Queensland of the Forest Board from 1924 to 1932. As one example (p. 77), Swain described the 1931 Report of the Royal Commission on the Development of North Queensland (Land Settlement and Forestry), which had been scathing of Swain's evidence, as "without substance, and comprised largely of misunderstandings, inconsistencies, evasions, misquotations, miscalculations, inaccurate statements, wrong conclusions, emission of fundamental pertinent data, and unfair discrimination against Forestry evidence." A second historical perspective on this period, continuing to the 1980s, is provided by Keith Gould. As General Manager Operations for Queensland Forestry, he says that the "reckless approach" of many loggers led government foresters to develop guidelines to reduce environmental impacts, but that loggers were "most reluctant" to adopt these guidelines—and essentially, the government foresters did not have the political power to enforce them against industry interests. In his view, however (p. 101), "by the mid-1980's, Forestry was comfortable that it was finally coming close to its objective of sustainable multiple use management."

Environment groups, however, were far from convinced. Whatever the state government's intentions, in practice the remaining forests of tropical north Queensland were being logged at an ever-increasing rate with remarkably little return to the public, even though it was clear even to logging interests that the timber resource was severely depleted. I myself recall a long conversation in the mid 1970s with the manager of one of the largest timber mills on the Atherton Tablelands, during which he repeatedly mentioned that the trees now reaching the mill were far smaller in diameter, and lower in timber quality, than during his early days at that mill. During the 1980s, therefore, Australian environmental groups argued strongly that remaining rainforests in the Queensland Wet Tropics should be protected from continued logging. The political anatomy of this campaign is dissected in Chapter 7 by Timothy Doyle. In particular, he describes the critical significance of the infamous "Cape Trib Road," a foolish attempt by Douglas Shire Council to bulldoze a large track through a stretch of steep and erosion-prone rainforest, essentially for residential land speculation. The pointlessness of this exercise, and its complete disregard for environmental concerns, prompted outrage first among local environmental groups, which blockaded the road despite significant risks to their own personal safety, and second among the broader population who saw the blockade on television. Doyle describes how the campaign was then picked up by national environmental groups, and how this in itself was a political decision on behalf of those groups.

One of the largest political issues, during the controversy over possible World Heritage listing, was the likely social and economic impacts on timber towns. In Chapter 8, Mark Lynch looks at what residents expected, and compares this with what actually happened. In Ravenshoe, the most critically affected town, the expectation in 1987 was "death of the community," but the reality in 1990 was a boom (p. 126). Lynch concludes, however (p. 131), that this was due to "good luck as much as good management."

The rest of the book examines the management of the area after it was listed as World Heritage. Vicki Pattemore describes the political infighting between federal and state governments in the establishment and early operations of the Wet Tropics Management Authority (WTMA) and its enabling legislation, and Tor Hundloe describes "the overtly political, confused and irrational nature of the early attempts at management." As someone personally involved during this period, I can testify that this process was in fact considerably more confused than either Pattemore or Hundloe describes. For example, prior to formation of the WTMA there was an Interim Management Authority

for the WTQWHA, established by the federal government to demonstrate that it had a management structure in place, as required for World Heritage listing. I was director of the IMA, apparently selected simply because, unlike most other potential appointees, I had not taken sides with either state or federal government during the debate, but had argued only that neither government should restrict access to scientific data held by its various agencies. Since the IMA had neither staff, budget, enabling legislation, nor an operating mandate, my only useful role in practice was as an independent conduit of information between the Commonwealth and State Ministers for Environment. As Hundloe describes, it took over a decade from the initial establishment of the IMA to the first formal and legal adoption of a management plan by a fully functional WTMA. This plan and its precursors are set out in more detail by Guy Chester in Chapter 11.

One of the critical components of an effective management plan must be the involvement of local Aboriginal peoples, and this is examined in Chapter 12. In particular, the chapter describes the successful Supreme Court action by relevant land councils in 1997 to overturn Ministerial Council approval of a management plan that failed to incorporate some specific, and previously agreed, benefits for native title holders.

Throughout the environmental campaign of the 1980s, it was argued that conserving the forests would offer greater economic opportunities through tourism than through logging them. This has indeed proved to be the case, and this is perhaps one major reason why the Queensland Wet Tropics case study has global significance. In Chapter 13, Sally Driml shows that by 1994, tourism in the Wet Tropics World Heritage Area was already worth more than 10 times as much as logging had been, using directly comparable economic measures. Since then, of course, tourism has continued to grow, and Driml's chapter also reviews the environmental threats of tourism, the need for management, and the inadequate management budget. Indeed, these issues apply for many national parks throughout Queensland and worldwide, and many of Driml's comments on the Wet Tropics case study have worldwide application.

My biggest concern over this book is who it is written for. As should be clear already, I myself found it very interesting; but then I have a personal involvement, both as a long-term recurrent visitor to the area and through past political processes. Much of the detail is rather idiosyncratic, but it does make the book very readable. In particular, it is fascinating to compare the historical quotes in the chapters by Frawley and Holzworth with the kind of things that local, state, and federal politicians are still saying in countries such as Australia and the United States. Whilst the prevailing climate of popular opinion and broad social perceptions about desirable land-use patterns has changed enormously over the past century and a half, political arguments seem barely to have changed at all. The Queensland case study will, I think, be interesting and relevant to readers of *Society & Natural Resources* worldwide. Within Australia, and perhaps also internationally, it could also provide very useful material for university courses in environmental policy and politics. And from an academic and historical perspective, it is very valuable that the chapter contributors, many of whom were practical players in the Wet Tropics debate, have committed their recollections to paper.

This is not a book about the Wet Tropics of Queensland. If it were, there are many more authors whose expertise would be required to provide a comprehensive picture. It is a book about a specific political controversy, which sets a single major decision, namely, World Heritage listing, in a much broader and longer context of land use and political change. Even within the limited context of political history, it is perhaps a pity that the volume does not include contributions from either the conservation groups or the timber industry, or indeed from any of the cabinet ministers involved. Perhaps

none of these can see any advantage from contributing to an academic text. The book may well have a rather limited market, but for those with an interest in this particular topic, it is a very useful and convenient summary from several perspectives.

Brulle, Robert J. *Agency, Democracy, and Nature: The U.S. Environmental Movement from a Critical Theory Perspective*. Cambridge, MA: MIT Press, 2000. 347 pp. \$25.00 (paper). ISBN 0-262-52281-0.

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As the title implies, Robert Brulle's book *Agency, Democracy, and Nature* takes on the ambitious task of applying critical theory to explore the achievements and limitations of the environmental movement in the United States. In this sense, it charts interesting new territory in environmental sociology by merging Jürgen Habermas's theory of communicative action with perspectives on complex organizations and social movements. Like any ambitious undertaking, Brulle's approach to evaluating U.S. environmental organizations raises some questions but, in general, provides an innovative framework for looking at the social and political complexities of protecting nature in the U.S. context.

The author's central premise is that, despite several decades of well-intentioned efforts to reverse ecological decline, the U.S. environmental movement has been unable to incite the levels of social change necessary to stem a continually rising tide of degradation. While other studies have drawn similar conclusions (e.g., Dowie 1995), Brulle offers a different perspective by using the lens of critical theory to allow us to have a more comprehensive view of the social causes of our environmental crisis. The core of critical theory is the nexus of theory and practice wherein our analytical deconstruction of the existing social order can (and should) assist us in the reconstruction of a more "rational" and "renewed" social order. This process of change is called social learning. In Brulle's rendering, a more rational social order is one that is ecologically sustainable.

Like Habermas, Brulle construes the environmental crisis as a reflection of a general decline or bankruptcy of the modern social order, in particular the state and the market. He argues that when we view society at three levels—institutions, cultural beliefs, and individual personality characteristics—broad trends emerge, including institutional contradictions that ignore ecological impacts, deterioration of cultural norms that govern human activities vis-à-vis the environment, and the rise of "possessive individualism" as a dominant personality trait. In tandem, these three processes degrade rather than protect and regenerate the environment. This explanation translates as an organizational failure since citizen groups have been unable to effectively dialogue and solve problems within the public sphere (what Habermas calls "distorted communication").

Brulle's model rests on the notion that communicative action is fundamental to the revitalization of social institutions (creation of a democratic social order) that can generate the social change necessary to respond to widespread environmental decline. Habermas's theory of communicative action proposes an ideal democratic process where communities work to craft rational, legitimate, and binding norms to govern

action. Rationality is not a universal standard of logic but rather mutual, intersubjective understandings that emerge through dialogue and satisfy “validity claims of truth, morality and sincerity.” Brulle’s focus is on civil society (nongovernmental organizations [NGOs] of the U.S. environmental movement) and its capacity to foster an ecologically rational society.

To understand organizational performance, the author uses a three-part framework including frame analysis, resource mobilization, and historical analysis. Frame analysis considers an organization’s worldview or “discourse” to gain insight on its identity, approaches, basic operating assumptions, and myths. Resource mobilization accounts for the extent to which material resources either facilitate or discourage civic action, accounting for both the internal and external dynamics of social movement organizations. Internal dynamics constitute shifts in goals, oligarchic decision making, and fund-raising methods. External dynamics focus on the degree to which outside special interests control organizational structure and practice, thus reducing grass-roots democratic action. Historical analysis contextualizes both organizational structure and performance. A spectrum of organizational types emerges with “grass-roots” and “astroturf” organizations at either end. Grass-roots organizations are “authentic” and “legitimate” representatives of “community” that operate through “open and undistorted communication in the lifeworld” and devolve significant control to members. Astroturf organizations resemble their grass-roots counterparts but are nonrepresentative, feature nonparticipatory structures and decision-making processes, and offer little control to members.

Brulle’s results suggest that the U.S. environmental movement features more “astroturf” than grass-roots organizations. He accounts for the diversity within the movement by categorizing groups of organizations by worldview or discourse. These include wildlife management, conservation, preservation, reform environmentalism, deep ecology, environmental justice, and ecofeminism. In light of the author’s core argument that distorted communication hampers social learning, the book draws three broad conclusions. First, the array of discourses associated with the environmental movement dichotomizes analysis, limits debate, and restricts available options for action. Thus, for example, near exclusive reliance on scientific reasoning by proponents of conservation and reform environmentalism mask the social roots of and depoliticize environmental problems. Second, dependence on financial patrons—in particular several key foundations—produces a type of cooptation that subverts organizational goals and shifts the locus of control away from members. Third, patterns of fund raising and an ever-increasing bureaucratization create oligarchic organizational structures. Brulle’s response focuses on developing an environmental metanarrative capable of unifying social movement organizations, instituting greater transparency regarding fund raising, and revitalizing organizations through democratic restructuring.

In reflecting on Brulle’s approach, two observations emerge. First, he presents a strong epistemological stance that considers the symbolic–expressive realm of human action without ignoring the material realm. Second, unlike most works on the human dimensions of environmental change, his use of social theory offers us a complex and layered view of society and social action. In addition, he explicitly links critical analysis with a constructive political theory that includes a moral baseline (Habermas’s communicative ethics), which permits dialogue on what constitutes socially just collective action in favor of nature protection.

While the book advances the environmental sociology literature in interesting ways, it also presents some incongruencies and spawns important questions. The author’s analysis includes lengthy historical background on each environmental discourse but

relatively scant treatment of the material politics (either in historical or contemporary terms) that also shape decision making. This shortcoming seems to result, in part, from the methodology, which favored analysis of documents such as bylaws rather than interviews and observation. Thus, the critique of foundations' roles in coopting NGOs—while significant and in need of closer scrutiny—is mostly suggestive and ignores how these same financial supporters might make groups' discourses and practices more democratic.

Perhaps most importantly, Brulle's central reliance on Habermas's theory of communicative action, while generative in important ways, tends to celebrate pure human freedom to act, deliberate, and change conditions while downplaying the role of discourse as cognitive and structural straitjacket (see Dryzek's treatise on deliberative democracy; Dryzek 2000). In this sense, the author's framework and analysis using Habermas might be tempered with more of Foucault where knowledge/power constrains our ability to think and act outside of the confines of dominant worldviews. The book notes this but mostly assumes that civil society (as autonomous from state and market) will be able to generate the discursive interaction necessary to think outside of existing cognitive "boxes."

Overall, *Agency, Democracy, and Nature* provides a compelling vision of a robust, constructive civil society capable of crafting an ecologically rational social order. From a pragmatic point of view, however, the book's analysis seems so submerged in the ideal realm of Habermas's theory of communicative action that it creates fundamental conundrums before what appears to be an unattainable standard for the environmental movement. While environmental movement organizations can benefit from the author's critical analysis, questions linger as to the political feasibility of crafting one metanarrative for an incredibly diverse social movement (let alone society) and restructuring all organizations as grass-roots democratic forms. Brulle's vision of a democratic, ecologically rational social order is worth exploring along lines of governance and accountability, but his analysis and recommendations would benefit from an infusion of more politics.

## References

- Dowie, M. 1995. *Losing ground*. Cambridge, MA: MIT Press.  
 Dryzek, J. 2000. *Deliberative democracy and beyond*. Oxford: Oxford University Press.

Tussie, Diana, ed. *The Environment and International Trade Negotiations: Developing Country Stakes*. New York: St. Martin's Press, 2000. 263 pp. \$65 (cloth). ISBN 0-312-22354-4.

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Increasing attention has been paid to the international aspect of environmental policy. "Think globally, act locally" isn't simply a catchy phrase; it is a real imperative, given that the world is truly interdependent in an environmental sense. Efforts to coordinate environmental policy at the international level are not new. But as the recent failures in Kyoto show, international coordination is considerably complicated by the many different, and competing, interests involved. One of the most serious



issues in international environmental policymaking is the divide between the countries of the North (affluent, industrialized, high-consumption, “developed” societies) and those of the South (poor, industrializing, “developing” societies). In the simplest terms, the conflict between these countries boils down to this: Industrialized nations want to implement measures that protect the environment, even at the risk of economic growth, and industrializing nations, while often suffering from the worst aspects of environmental degradation, are most concerned with economic growth and job creation. It is precisely this conflict that Diana Tussie’s edited book is concerned with. In her introduction to the book, Tussie describes the two competing agendas as follows: “The ‘Northern’ or ‘green’ agenda is constituted by climate change, bio-diversity, deforestation and fisheries issues. The ‘Southern’ or ‘brown’ agenda includes drinking water, poverty alleviation, trade, market access and the need for technology transfer and greater flows of development assistance” (p. 2). The impact of these differing agendas and priorities on international trade negotiations is the concern of Tussie and the other contributors to the book.

Tussie has assembled a fine group of scholars to weigh in on the topic. What is perhaps most heartening is that most of the chapters are written by people who are based in the South (mostly Latin America, though, and the relative absence of Africa is a serious weakness). The book is organized into three sections. The first presents a number of case studies of international trade negotiations, and their relationship to environmental issues. The second section presents discussions of some general theoretical issues that touch upon the relationship of trade and the environment. Finally, the third section turns to the consideration of international regimes that are primarily trade based but that have implications for international environmental policymaking. The volume is book-ended with introductory and concluding chapters by Tussie, attempting to theorize and make generalizations based upon the analyses of the other chapters.

The four chapters in the first part of the book examine specific aspects of liberalization in specific developing countries. The analysis of the forestry sector focuses on Malaysia; the chapter on agriculture focuses on Brazil. The third chapter is an examination of the impact of standardization via the ISO on firms in developing countries, focusing on the Brazilian case. Finally, the fourth chapter looks at the experience of South African exporters with international environmental pressures. In general, these case studies suggest that while liberalization places pressures on firms in developing countries to conform to environmental standards that can have discriminatory effects, firms generally seem to adapt quite well.

The two chapters in the second section of the book deal with some general themes. It is the third section of the book that is in some ways most useful. The six chapters in this last part (including Tussie’s concluding chapter) address the larger regional or global context of the relationship between trade liberalization and environmental protection. The chapters deal variously with regional cooperation, the Montreal Protocol, the experience of Mexico with the North American Free Trade Agreements (NAFTA), and environmental regulation cooperation within the context of Mercosur and the ASEAN. All these chapters (except the theoretical Chapter 8) provide rigorous case studies of various regions or countries, and are valuable especially for practitioners in these specific regions.

On the whole, this is a very useful book. However, it does have some serious flaws, which prevent it from being an even better book. One of the weaknesses of the book stems from the very understandable difficulty of maintaining a coherent theme and direction in an edited volume. Thus, the various contributors to the volume are often addressing markedly different aspects of the book’s topic, and in some cases

the chapters only have tangential relevance to the others. However, a more serious weakness is the failure of the editor to provide a more systematic framework to the book (and therefore, perhaps, to the contributing authors).

One alternative way to approach the topic might have been to identify the key aspects of the relationship between trade liberalization and the environment. There are at least two main effects we are concerned about here. One is the impact of trade liberalization on environmental protection. Trade liberalization, spurred by and part of the forces of globalization, creates tremendous pressures on the environment, and in most cases exacerbates environmental degradation. On the other hand, trade liberalization also opens the door to the imposition of the northern environmental agenda onto southern economies. This can have beneficial effects for environmental protection in the South, but it also leads to charges of cultural imperialism. Perhaps more significantly, such postures have possible trade protectionist implications, which can cause economic hardships in the economies of the South and, in the minds of many, maintain unequal economic ties between the North and the South, therefore maintaining underdevelopment in the South. The various chapters in the book touch upon one or more of these themes, but not in any systematic way. Tussie's introductory chapter to this volume alludes to the various tensions that arise from the different environmental agendas of the North and the South, which are also critical elements in the continuing global discourse on environmentalism, but this is not an issue even addressed by any of the contributing authors. Thus, in the end, this volume raises more questions than it answers. Most of the authors have produced very fine analyses, but they do not add up to any major pronouncements on the relationship between environmental issues and trade. There is much to recommend this book, but the lack of a coherent theoretical framework seriously hampers its value to the academic and practitioner communities.

Andresen, Steinar, Tora Skodvin, Arild Underdal, and Jorgen Wettestad. *Science and Politics in International Environmental Regimes: Between Integrity and Involvement*. Manchester and New York: Manchester University Press. 2000. \$69.95 (cloth). ISBN 0-7190-5806-6.

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I like four things about *Science and Politics in International Environmental Regimes*: It takes seriously the *intersection* of science and politics; it provides both an historical analysis and careful discussion of five important cases; it applies a simple pattern-tracing strategy to look at factors that facilitate or impede the transformation of research-based knowledge into policy premises; and it highlights the importance of the skills and behavior of individuals occupying important boundary roles. I know of no other work that accomplishes both an in-depth treatment of particular international regimes and a comparative framework that renders strong lessons for improving the dialogue for actions that must be based on the precautionary principle.

The authors' concern is the utilization of scientific knowledge as input for international environmental policy. In their words, they want to answer the following question: "To what extent and how is the utilisation of research-based knowledge as input for international environmental policy affected by the way the science-politics dialogue

is organized?" The dependent variable is a crude scale of "degree of adoption" that varies from low (decision makers recognize the relevance and usefulness of the kinds of knowledge that scientists produce) to medium (decision makers accept as valid the substantive conclusions that meet the standards of the scientific community) to high (decision makers adopt scientific inputs as guiding policy). The independent variables are two dimensions of the institutional arrangement between science and policy bodies. These are autonomy/integrity and responsiveness/involvement, each operationally defined by an index or checklist of variables. Two control variables are the state of knowledge (degree of uncertainty or ambiguity of scientific evidence) and political malignancy (how much conflict is associated with the problem itself). In addition, public saliency is considered as a reinforcing variable that influences the adoption of inputs from scientific research.

The five case studies cover the whaling regime (the International Whaling Commission), land-based marine pollution in the north-east Atlantic (the Paris Convention and the North Sea Conference), acid rain in Europe (the United Nations Economic Commission for Europe Convention on Long-Range Transboundary Air Pollution), the stratospheric ozone regime (the Vienna Convention and the Montreal Protocol), and climate change (the United Nations Framework Convention on Climate Change and the Kyoto Protocol). In each case the authors describe policy evolution, the organization of scientific assessment, and the institutional design for the interaction between decision makers and scientists. Each case is chock-full of documentation of critical events and challenges to a smooth interface.

This book shows that scientific research is recognized as the supplier of relevant knowledge, especially for problem identification and diagnosis, and sometimes for explicit policy advice. The degree of uncertainty that is familiar to scientific discourse can be intentionally exploited to prevent fruitful negotiations, yet scientific consensus about the problem's critical aspects and about uncertainty itself retards explicit challenges to science as the appropriate source of knowledge. Nonetheless, scientific consensus is neither necessary nor sufficient to produce collective action.

In fact, the authors conclude that the two institutional dimensions did not seem to be critical factors in determining the degree to which research-based knowledge is used as the premise for environmental policies. Instead, the state of knowledge seems to be more important than organization and procedure. In addition, the authors note, individual leadership plays an extremely important role at the intersection of knowledge and policy.

This book would be ideal for a graduate seminar in the social dynamics of international treaties. I could envision individual students covering the five cases in depth, having been provided with the excellent introductory chapters. The instructor could lead the students through the exercise of case study preparation and synthesis since the book is structured in this manner. I highly recommend this book.