

renovating ecology

Transforming the Indonesian Uplands. *Tania Murray Li*, ed. Amsterdam: Harwood Academic Publishers, 1999. xxiv + 319 pp., illustrations, maps, index.

Cultural Memory and Biodiversity. *Virginia D. Nazarea*. Tucson: University of Arizona Press, 1998. xiv + 189 pp., figures, tables, notes, bibliography, index.

Ethnoecology: Situated Knowledge/Located Lives. *Virginia D. Nazarea*, ed. Tucson: University of Arizona Press, 1998. xii + 299 pp., index.

A Green Place, A Good Place: Agrarian Change, Gender, and Social Identity in the Great Lakes Region to the 15th Century. *David Lee Schoenbrun*. Portsmouth, NH: Heinemann, 1998. xiv + 301 pp., maps, figures, illustrations, photographs, bibliography, index.

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This is a dynamic period for anthropologists working on ecological issues. A recent spate of publications promoting political ecology, an anti-essentialist political ecology (Escobar 1999), a new ecological anthropology (Kottak 1999), and an environmental anthropology (Brosius 1999) offer programmatic aims for the field during a time when theories remain in development and future directions for study stay open. I approached these books in light of this openness and asked what the contributors had to say about these theoretical directions. The authors commonly refuse to isolate ecology from other research questions, employing instead a stance of *both/and* as they link environmental practices to colonialism, gender, identity, knowledge hierarchies, development, and history. Notably, the 29 contributors to these four volumes present collaborative research, using reporting styles that reach across disciplinary boundaries. I focus here on the authors' shared explorations of ecology in light of marginality, power relations, protection of natural resources, and regionalism.

Not all responses to this expanded research scope are innovative. The tension between earlier and emerging forms of environmental research is fruitful in itself. In my conclusions, I discuss how the future of ecological research in anthropology may rest on the outcome of

this tension rather than the ascendancy of any single definition of the field.

ecology and marginality

Historically, anthropological studies of ecology have used some notion of the marginal to describe relatively unproductive landscapes and a particular place in global economic systems. Virginia Nazarea, in *Cultural Memory and Biodiversity*, and the contributors to *Transforming the Indonesian Uplands* revisit ideas of marginality and innovatively recast the connection between environmental practices and social hierarchies. They discuss marginality as a concept used to confine people to disempowered and insecure economic positions. These positions have particular implications for subsistence practices and their associated environmental outcomes. The authors, however, differ in their precise definitions of *marginal* as well as in their understandings of what (if any) environmental and social benefits might arise to people labeled as such. The contributors to Tania Li's book offer especially suggestive theoretical discussions that make their analyses applicable to other social, geographic, and environmental designations.

Although a blurb promoting Li's edited volume suggests this is a "classic in the political

ecology of Indonesia," neither the contributors nor the editor position their work in political ecology. Rather, they refrain from labeling their combined interests in marginality, how power operates in upland Indonesia, and local forms of production. By interweaving these themes with questions of ecology and development, the authors resist categorization and broaden their potential audience. At the same time, the authors revisit naturalized explanations for social difference from multiple perspectives. They agree that "the uplands" is not a concept reducible to geography. Instead, the notion draws people into shared sets of relations. Insisting that geographical explanations mask unequal social relations, they commonly demonstrate how environmental practices make sense in light of both ecological conditions and Indonesian processes of territorialization.

Li's own chapter provides a strong and useful guide for reading her collection. Li employs a cultural studies approach to characterize discourses that have produced the notion of marginal uplands. In this examination, she draws on "academic work, government politics, national and international activism and various popular images" (p. 1). Li describes how images of unspoiled hills and forests can combine with images of upland farmers as environmentally benign. These positive images contrast with those of untamed wilderness and backwards people in need of development to naturalize exploitative relationships. Li locates exploitation variously in environmental conservation, economic development, and military control. She notes that both positive and negative depictions facilitate a continued and unequal relationship between the margins and center. State control of forests translates into control of people, just as failed development projects are used to rationalize a continued state presence to further aid impoverished people.

In the chapters that follow, the contributors use frequent cross-references to support Li's initial depictions with coherent case examples. They explore the construction of marginality while highlighting different regimes of resource exploitation. Reading across the contributions, one sees how ideologies of power both build on and go beyond any single form of environmental management. For example, Albert Schrauwers insightfully demonstrates that state rhetoric about traditional peasants practicing a

moral economy obscures the co-emergence and interdependence of market and non-market relations. While Schrauwers focuses on independent smallholder agriculturalists, Ben White takes an indicting look at the effects of state policies on contract farmers. Krisnawati Suryanata and Tine Ruiten similarly critique state policies as they examine state-directed agroforestry programs and rubber plantations, respectively. Along with Roy Ellen (on the effects of government-sponsored settlement schemes), the authors show how government biases built around concepts of margin and center contribute to a series of regimes that offer different benefits and disciplines to people variously associated with one place or the other. In this way, state policies reinforce social differences both within the peasant sector and between small-scale agriculturalists and more capital-intensive forms of resource use.

In the first section of *Transforming the Indonesian Uplands*, the authors pay close attention to historicity in delineating the origins of these regimes. Peter Boomgard explores the adoption of corn cultivation after colonial contact to explain how the crop allowed smallholders to expand into less fertile upland areas. A corn-based diet then became the mark of poverty as colonial period elites reserved rice for export, European tribute payments, and their personal consumption. Joel Kahn thoughtfully relates how Dutch notions of bounded cultural groups translated economic relations, such as food production, into intercultural relations. The Dutch effectively introduced a language of cultural diversity that had not existed previously in Indonesia. By evoking cultural diversity, government agents and anthropologists alike could describe the creation of a peasant class (partly driven by a decreasing land base brought about by mining concessions and forest reserves) as an environmental adaptation (see Schrauwers) or the outcome of particular cultural tendencies.

Anna Tsing discusses how today's urban fantasies of the exotic Other continues this manufacturing of cultural explanations. She takes an original look at the way present-day Meratus people collaborate with ecologically minded development agents in positing the existence of local tribes who have representative elders. Tsing effectively uses institutional literature to explore this collusion from the perspective of development agents. Meratus, she demonstrates, replicate outsiders' ideas of

their primitive status to bargain for continued development aid as well as to gain interest in the threats that logging companies pose to Meratus lands.

The contributors to Li's volume reveal how the idea of marginality, in assuming separation from a powerful center, can obscure interdependent relationships. In *Cultural Memory and Biodiversity*, Virginia Nazarea maintains that a disconnect between margin and center provides a space where counter-hegemonic practices can thrive. This space is both a literal and analytical one. Nazarea's main interest lies in how the intersection of memory and practice explains the persistence of landraces, or native cultivants, in the work of small-scale farmers who otherwise might, for economic and political reasons, plant high-yielding, genetically homogenous crops.

Nazarea has considerable experience with programs that aim to preserve plant genetic resources, specifically gene banking at the International Potato Center in the Philippines. Her innovation in this field lies in asserting that preservation materials must include information on the cultural context that originally fostered genetic diversity. In a comparison study, Nazarea finds that crop diversity thrives on the margins—in this case, among sweet potato variants within those Philippine farm communities that are poorly connected to market economies. Diversity also multiplies on the margins of fields, where farmers surreptitiously cultivate landraces alongside high-yielding varieties promoted by agricultural extension workers (see also Dove in Nazarea's *Ethnoecology*).

As Nazarea carefully evaluates connections between environmental knowledge and practice, she finds that people may lose knowledge about crop diversity *before* they cease to cultivate such diversity in their agricultural fields. This loss occurs mainly through commercialization of farming practices and incorporation into market economies. In this way, Nazarea's notion of the margins draws on ideas of social evolution. Nazarea writes that "sociocultural evolution works on . . . cultural variability" and concludes that "if this cultural diversity is missing . . . the population has lost its most significant reservoir of adaptive capacity" (p. 12). In her appeal to preserve farming systems that encourage such diversity, I found problems of temporal and social distancing associated with salvage anthropology (discussions of forced

primitivism in Li's *Transforming the Indonesian Uplands* provide an interesting comparison with Nazarea's approach). Given Nazarea's emphasis on farmers' agency along with preserving diversity, it is ironic that the argument decreases her ability to formulate conservation plans that use such agency to negotiate constantly changing circumstances. Some answers to Nazarea's dilemma can be found in Michael Dove's contribution to Nazarea's edited volume, *Ethnoecology*. Dove cogently depicts a dynamism in subsistence farming that allows previously predominant species to survive in current farm practices. Dove describes these remnants as witnesses of the past and present. He believes these remnants provide a transcendent mechanism for addressing past, present, and future agricultural and environmental change. Rather than view knowledge as a measurable sum, Dove focuses on knowledge's diffuseness and its temporal variability.

ecology and power

As concerns for marginality demonstrate, the authors in all four volumes are interested in connections between environmental practices and issues of power. Nazarea brings a fresh perspective to ethnoecology as she evokes recent thinking on power and knowledge to introduce her edited volume, *Ethnoecology: Situated Knowledge/Located Lives*. David Schoenbrun, in *A Green Place, A Good Place*, expertly composes a story of the interdependent qualities of changing environmental practices, ecologies, social organizations, political structures, and concepts of power.

In a detailed way, Schoenbrun contextualizes his position as a politically engaged researcher. He notes that because historical research reveals the past in the present, "the challenge of historical reconstruction is also the challenge of cultural politics" (p. 3). In response to this challenge, Schoenbrun goes beyond what he considers simplistic histories of domination and resistance to write, instead, "a history of creativity" (p. 4).

As Schoenbrun follows creativity through Africa's Great Lakes region, he shows an enduring tension between healers and royal leaders who compete in attracting followers and centralizing the creative power of women. Within this tension, Schoenbrun distinguishes between instrumental power and creative power (the power of reproduction, as well as

the potential to articulate alternative social visions). He describes power in the Great Lakes region as a constantly shifting array "of multiple centers and multiple edges" (p. 5), accounting for this diffuseness by drawing on evidence of changing agricultural fortunes, the varied ability of individual leaders to execute their offices, and the uneven burden of costs associated with healthcare.

In an account characterized by careful analyses and unusual breadth and depth, Schoenbrun draws on historical linguistics (among other methods I discuss below) to chart a series of changes in the Great Lakes region. While eschewing evolutionary explanations, he examines how settled agriculture developed along with regional patterns of pastoralism and intensive banana farming. He also considers concomitant population changes (migration trajectories and changes in linguistic groups) and the political institutions that drew on these changes.

Schoenbrun pays close attention to nuance. Despite the material's sweeping character, he never tends toward the superficial. As an example of the narrative's interwoven quality, Schoenbrun locates the power of women within contrasts arising out of the mobility of cattle wealth and investments in perennially cropped bananas. In banana farming areas, power became associated with control of land and a sharply defined social stratification. Cattle ranching, on the other hand, allowed people to move into previously uninhabited grasslands, especially those who were disadvantaged in hierarchical farm communities. On pastoral frontiers, people countered the family and place-based ancestor cults of banana communities with "a new, more expansive sort of territorial spirit, connected with a new . . . healing institution, mediumship, in which men and women with diverse clan and lineal affiliations found succor and status" (p. 235). Participating in these new forms of healing, women created a source of power within a patriarchal setting. Over the course of centuries, rainfall variability alternately favored ranchers and farmers, ultimately fostering an interdependence between the two groups. Persistent, regional concerns about the fertility of people, land, and livestock underpinned healers' power, which paralleled that of chiefs.

Power in frontier regions also rested partly on a distinction between first arrivals and latecomers. This distinction continued centuries

after the frontier had closed, when population changes obscured the origins of particular groups and, thus, various claims to be the firstcomers. In generations after frontier settlement (800 to 1500 A.D.), hierarchical ethnic categories developed out of attempts to claim affiliation with firstcomers or to diminish the significance of firstcomer groups. Schoenbrun's evaluation of frontiers thus complements the explorations of marginality in Li. Both discussions expand understandings of how the intersection of sociocultural and ecological systems provides a rich vernacular for refashioning social relations along the lines of a perceived natural order.

In his historical assessment, Schoenbrun perceptively observes the effects of changing ecological and political practices on gender relations, outlining the discursive tactics that men used to displace women's power into realms firmly under male control. In iron producing regions, for example, the influence of ironsmiths drew on "a metonymic appropriation of female fertility" (p. 169) to assert a male fecundity. In pastoral regions, men fostered patriarchy partly by "promoting cattle as makers of social relations and by promoting wives solely as makers of children" (p. 233). Men reconfigured temporal events to assert that women established social relations "just like cows did" (p. 233), thus making cattle's place in society prior to that of women. At the same time, Schoenbrun warns against projecting onto the past a "patriarchal, pastoralist fantasy of male domination" (p. 234) rooted in the 20th century. "Skepticism in this regard," he asserts, "pays rewarding results" (p. 234) in understanding the contours of women's power as mothers, wives, and, in the case of spirit possession movements, as mediums who could pose direct challenges to chiefly rule.

In contrast to Schoenbrun's wide lens, Nazarea and contributors to her edited volume, *Ethnoecology: Situated Knowledge/Located Lives*, focus sharply on the connection between environmental knowledge and systems of power. Nazarea (in the introduction) summarizes the ethnoecological premises upon which the contributors build: ethnoecology's dual roots in validating the internal coherence of different knowledge systems and measuring legitimacy through comparison to Western (hegemonic) knowledge systems; environmental knowledge as situated within matrices marked by class, gender, ethnicity, and history;

and ethnoecology's relevance to international debates supporting indigenous rights to property and resources. Nazarea reviews a series of debates in ethnoecology—such as whether categorization is intellectually driven or a response to utilitarian concerns (p. 5)—then supersedes the debates by encompassing them within a broader framework. She admits that knowledge operates at multiple levels (experiential, cognitive, emotional, and behavioral) and suggests that ethnoecology embrace this diversity, especially as evidenced in the connection between cognition and action. In following through on this suggestion, Nazarea, in a separate chapter, explores “fragmented ethnoecologies” (p. 93) to demonstrate patterns in the way ethnicity, gender, and age affect evaluations of beauty and utility (among other points) in people's assessments of a similar Philippine landscape.

Scott Atran (in Nazarea) employs a similar approach in comparing Q'eqchi', Ladino, and Itzaj attitudes toward environmental protection in Guatemala's northern Peten region, where Q'eqchi' (like Itzaj, an indigenous group) and Ladinos are immigrants. He finds that Ladinos and Itzaj share information networks that aid new arrivals in learning land management techniques (the social dynamics behind these relationships are less well developed). The practical outcome of this knowledge, however, is unsure. Atran finds that Ladinos do not entirely share the Itzaj vision of humans as having a positive impact on the existence of certain plants, whereas Q'eqchi' see plants as totally unaffected by human behavior. Atran uses this difference to question stereotypes of indigenous stewardship. Atran's conclusions could have benefited by taking positionality even farther. For example, Atran asked representatives of the three groups whom they considered the most knowledgeable about regional forests. Q'eqchi' had a greater tendency to name people associated with a U.S.-based environmental group and a government environmental agency. Atran concludes, “Q'eqchi' do not know who the experts are in a socially relevant sense” (p. 205). I suspect these agencies were relevant and that their ties to the Q'eqchi' community were built partly on a power difference that entailed public ignorance of environmental expertise on the part of the Q'eqchi' (Tsing in Li's volume also discusses the poses people must take to appease outside interests). In discussing

environmental knowledge thoroughly, while leaving little space for considering practices and the nuances of Peten power dynamics, Atran reveals the obstacles to writing the breadth of material required by an expanded ethnoecology.

Even while emphasizing ethnoecology as a tool of local empowerment, many contributors to Nazarea's volume provide accounts that place the researcher in the unreflective position of authoritative spokesperson. In this context, ethnoecologists' efforts at legitimating non-Western knowledge systems through comparison are not completely set aside. Darrell Posey is the only author to explore problems with this authoritative stance. He notes that “ethnoecologists are increasingly seen by indigenous, traditional, and local communities not as allies but as instruments of corporate interests” (p. 225) because of their direct or indirect association with commercial exploitation. Posey urges ethnoecologists to develop equitable relationships with local communities. To this end, the volume includes chapters by Lillie Lane, a Navajo writing on the “Practical and Religious Meanings of the Navajo Hogan,” and by Katy Moran, whose work with the Healing Forest Conservancy (a nonprofit group affiliated with the private corporation Shaman Pharmaceuticals) attempts to ensure the equitable distribution of earnings from indigenous medicines. While Lane expands ethnoecology to address questions of space and place, her description is so general that she fails to connect her material to the volume's broader themes. Moran's evidence from Conservancy projects is interesting for the way these programs imitate structures that other contributors describe as detrimental to a diverse resource base. For example, the Conservancy established an extractive reserve in Belize and deeded that land to the Belize Association of Traditional Healers. This bureaucratization of resource use is at odds with Nazarea's and Dove's findings on the importance of informal networks and existing indigenous practices for successful in situ conservation. Another aspect of the Conservancy's work includes training indigenous women and “traditional healers” (p. 256) in collecting and processing plant materials for commercialization. Moran asserts that such programs benefit national governments in the form of a “technological infrastructure for science and commerce that yields jobs and taxes” (p. 259). In

addition to disregarding problems cited earlier with commercialization, Moran overlooks how such programs reinforce state authority with little consideration for whether that government is accountable to the people it purports to represent. Discussions of state practices in Li's *Transforming the Indonesian Uplands* are illustrative in this respect.

In general, the contributors share unevenly in Nazarea's reflexive attention to the subtle connections between knowledge and power (for positive examples, see the chapters by Dove, Peña, Posey, Soleri and Smith, and Stephenson). In failing to address contradictions in the contributors' materials, Nazarea (in the introduction) and Robert Rhoades and Jack Harlan (in the epilogue) miss opportunities to think through the situated qualities of ethnoecologists' own cognition and practice. Such an examination would have strengthened Rhodes and Harlan's call for a systematic theory about how people perceive and act upon their environments.

ecology and natural resource conservation

The writers of these four volumes are generally concerned about natural resource conservation (although the contributors to Li's book share this purpose to a lesser extent). In Nazarea's edited volume, *Ethnoecology*, this concern often translates into the kind of generic narrative of domination and resistance against which Schoenbrun so effectively cautions (see also Brosius 1999). These narratives are aimed at developing ameliorative policies. While strategic typifications certainly have a place in anthropological and policy writing (as Dove argues in Li, see below), the contributors to *Ethnoecology* fail to reflect on the practical and epistemological implications of acting simultaneously as critic and advocate of conservation regimes (Brosius 1999; Milton 1996). This is an unfortunate oversight because Nazarea and contributors to her volume are well placed to capture the intricacies of research and advocacy entanglements.

In *Cultural Memory and Biodiversity*, Nazarea's interest in conservation centers on a Philippine program for germplasm preservation. In chapter 2, she draws on her meticulous fieldwork to write a manual for collecting cultural information complementary to the genetic material archived in germplasm centers.

Meanwhile, in chapter 6, she reports on two in situ conservation projects and stresses the importance of institutional support for such programs (as opposed to mandates that such programs be carried out). Although Nazarea views agricultural development as a threat to varietal diversity, she also notes deterrents to genetic erosion that can survive development. In particular, people employ a multiplicity of criteria (such as taste, color, texture, and fit with existing farming conditions) in choosing crops and technologies, which in turn supports continued genetic diversity.

Darrell Posey and David Stephenson Jr., in their separate contributions to *Ethnoecology*, discuss legal frameworks that protect the resource rights and intellectual property of small scale producers. Posey begins with "the right to say 'no' " to development (p. 219), a subversive move given current hegemonic assertions that unrestrained economic activity is a right. A truly free market includes the right not to participate. He then goes on to review legal models designed to protect "traditional resource rights" (see p. 218). These frameworks include agreements emanating from the International Labor Organization, various branches of the United Nations, and the Convention on Biological Diversity (developed at the 1992 Earth Summit held in Rio de Janeiro). Stephenson, in his chapter, critiques the usefulness of these approaches. He proposes trademarks and licensing as ways for indigenous groups to grant rights without transferring ownership. In this way, protected indigenous knowledge would be akin to trade secrets.

In *A Green Place, A Good Place*, Schoenbrun's interest in natural resource management is not policy oriented and avoids narratives of crisis. His processual perspective offers more hope for the future health of the world's environment. He begins from the premise that human environment relations entail a series of interactions. People are presented with an ecological setting that they modify. This modification has repercussions to which people respond. Responses again cause modifications, and so on, as the give and take between ecological and social systems continues.

The simplicity of Schoenbrun's approach may belie its advantages. These volumes show that anthropologists writing today are of two minds in relating to older approaches that stress human adaptation to an environment. On the one hand, there is a pressing need to

develop resource use patterns that counter large-scale environmental degradation. On the other hand, today's extensive use of unsustainable practices poses a fundamental challenge to adaptation as a satisfying explanatory model. Partly because of this dissatisfaction, researchers turn to the explanatory strengths of politics and economics to describe changes in environmental practices. An interactive premise, such as Schoenbrun's, provides a way to integrate the biophysical and sociocultural dimensions of environmental change, while fulfilling calls for a processual ecological anthropology (Orlove 1980). Schoenbrun conceptualizes ecology as a range of conditions across time. His work suggests the utility of a more elastic notion of adaptation that would allow researchers to think beyond the constraints of polarized contests and the rhetoric of ecological crises to imagine multiple environmental futures. To the extent that Nazarea and contributors look toward the future, they take a defensive position against the onslaught of what they perceive as powerfully destructive forces.

Dove (in Li) disagrees with such totalizing characterizations of power that leave the reader helpless and render social change impossible. His work shows that, in the case of environmental management, future imaginings that demonstrate the frailty and variability of power are an important part of thinking a way out of current stalemates. As mentioned above, Dove's contributions to *Ethnoecology* describe an elasticity in farming practices that underpins resource use ideologies capable of coping with environmental change.

Schoenbrun's own account of environmental change in *A Great Place, A Good Place*, has a few gaps. He offers little sense of the effects of expanding human settlements on wildlife and non-cultivated plant communities; but this is a minor quibble given the considerable amount of data Schoenbrun brings to bear on his analysis. I mention these gaps only to point, again, to the challenges for research and reporting that more complete ecological analyses present. I now turn to the authors' use of spatial scale and multidisciplinary approaches and how these approaches respond to the challenges of anthropology's expanded ecological scope.

ecology and regionalism

Both Schoenbrun and the contributors to Li's *Transforming the Indonesian Uplands* demonstrate how employing a regional spatial scale provides a more advantageous perspective for viewing interdependent processes of environmental and social change. While political ecologists have used world systems theory to connect particular places through market and political relations, the authors under consideration here show the benefit of working from empirically driven concepts of a region.

Schoenbrun and the authors in Li's volume define *region* differently according to the particularities of their cases. Schoenbrun's text is an extended argument for the existence of an African Great Lakes region based on the "profound unity of Great Lakes cultural practices" (p. 28). Without overlooking a diversity of environments and economic practices, Schoenbrun sees unity in linguistic patterns, healing practices, constructions of power, and trade networks. His task lies in explaining the origins of these similarities. Schoenbrun's accounting parallels Lomnitz-Adler's work on regionalism in Mexico (see Lomnitz-Adler 1992). Both authors describe cultural regions as arising out of the interaction among physical geography (including resource exploitation), power structures, and communicative frames. As the contributors to Li's volume highlight, a deeply historical regionalism sets the stage for understanding the effects of colonial practices and the integration of regions into global systems.

The contributors to *Transforming the Indonesian Uplands* make the strongest contribution to thinking about regions as cultural constructs, as they apply their theoretical innovations to previous research in Indonesia. Li's volume was organized to complement the 1989 publication *Agrarian Transformations: Local Processes and the State in Southeast Asia* (Hart et al. 1989), which focuses on lowland wet rice agriculture. In developing a complementary volume, the contributors used the problems of upland-lowland comparison as a point of entry. This approach is especially relevant for their subject matter because, unlike Schoenbrun's case where the region comprises a contiguous land mass, the uplands are spread across Indonesia's islands.

Lumping disjointed places into a single entity emphasizes the way regions are cultural

inventions that require continuous reinvention. The implications of this for human environment studies are many. Together with Schoenbrun's elastic notion of adaptation, the two concepts allow researchers to consider how specific environmental practices become thinkable in any given time and place. As anthropological studies of the environment move beyond an emphasis on local adaptation, research into the elasticity of adaptation and the construction of regions provides a common basis for considering apparently divergent environmental practices. These practices range from the bioprospecting exploits of multinational corporations, to conservation movements, to small-scale agriculturalists. As transnational development agents and environmentalists attempt to replicate resource use regimes across regions, the variable construct of place and region is an added means to assess the cultural predispositions such agents carry with them and their programs' impacts.

Expanding geographical perspectives and the overall scope of environmental studies in anthropology raises the possibility of exploring a greater variety of information. As researchers become increasingly specialized, the need for additional information may test the skills of any individual investigator. The authors of these volumes respond to this challenge through flexible approaches to disciplinary boundaries and research methods.

reaching beyond disciplinary boundaries

Contributors to *Transforming the Indonesian Uplands* (Li) and *Ethnoecology* (Nazarea) represent a variety of disciplines, with the authors of *Ethnoecology* encompassing the greatest diversity. This makes sense, for the issues associated with preservation of crop genetic diversity are likely to attract agronomists, botanists, biologists, and political activists as well as anthropologists. Although the contributors to Nazarea's volume do not argue explicitly for multidisciplinary collaborations, the tendency in this direction is clear.

Along with Nazarea in *Cultural Memory and Biodiversity*, contributors to her edited volume suggest that investigators involved in multidisciplinary research can go further in addressing the breadth of questions that currently characterize environmental settings. For example, these researchers are

well positioned to expand anthropology's historical interest in the effects of Western science on environmental practices while connecting to the growing field of science studies. In *Cultural Memory and Biodiversity*, Nazarea charts "scientist" attitudes toward "farmer" beliefs and practices (see p. 53). The scientists include a plant pathologist, an entomologist, an agronomist, a plant breeder, and a plant physiologist. She explores how their distinct belief systems contribute to a "script" or "protocol for orchestrating how things are done and how they are communicated" (p. 53). Nazarea uses the scripts to chart differences in epistemology and performances based on concepts of what is valid knowledge. The scientists alternately employ a scientific paradigm to breach cultural barriers and to defend their stances as bearers of authoritative knowledge. Just as often, they appear to have no basis for which to understand and comment on local practices.

If Nazarea and the contributors to her volume define multidisciplinary research as group collaboration, Schoenbrun demonstrates in *A Green Place, A Good Place* how a single researcher can build a more comprehensive narrative by bridging disciplinary boundaries. Schoenbrun achieves this through an intensive use of published materials. In adding his own linguistic and historical data to relevant evidence from archaeology, environmental studies, and 19th- and 20th-century ethnography, Schoenbrun innovatively compiles separate findings to build a new chronicle. He carefully examines information from one body of data in light of findings in other areas to refine his narrative and contextualize both the strengths and limitations of each area of research. Although Schoenbrun is dependent on research produced in areas where he may have less expertise, his own reflections on the quality of different data sources (see p. 53) along with his precise reading of a large body of literature help the reader overcome any reservations. Schoenbrun's cross-disciplinary excursions are calculated to contribute to a well-defined theme. His critical evaluation of these excursions supports the use of a multidisciplinary approach as a research tool rather than simply a search for supporting evidence.

a new ecology?

Do these authors suggest a new ecology is on the horizon? Peter Brosius has argued

against one aspect of a possible new ecology—"political ecology"—because of the lack of clarity with which writers employ this phrase (1999). Some researchers refer to a political ecology that marks the fusion of political economy with human ecology. Other writers use the phrase to describe a theoretical development informed by poststructural theory. Regardless of labels, the authors under consideration here suggest that anthropological research on the environment is innovative because anthropologists are engaging previously contrary positions. Although the authors begin from distinctly different theoretical perspectives (and emphasize one perspective over another), all refuse to ignore other sets of theories and methods. Instead, the authors strategically deploy a wide range of theories and methods as they examine how the environment is both a thing in itself and the product of discourses. This open-armed rather than embattled stance toward theory and method has allowed anthropologists to enter new research terrain—such as critical assessments of conservation practices and environmental movements—while employing increasingly sophisticated analyses (see especially Kahn, Li, Schrauwers, and Tsing in Li; Schoenbrun; Dove in both Li and Nazarea; and contributions by Nazarea to both volumes that bear her name).

At the same time, some contributors to Nazarea's *Ethnoecology* demonstrate how many researchers draw on political economy and poststructuralism as oppositional paradigms in a way that reinforces their differences. To the extent that they incorporate poststructural ideas, the contributors to *Ethnoecology* do so in a self-conscious manner. Schoenbrun in *A Green Place, A Good Place*, as well as contributors to *Transforming the Indonesian Uplands*, avoids this dichotomizing by offering thicker ethnographic descriptions. These latter writers demonstrate that while anthropologists struggle to generate new theories that encompass political economy, poststructuralism, and ecological adaptation (see Gupta's work in this direction, 1998), a growing body of material demands such encompassing theories.

New theories challenge established narrative constructions by introducing broader contexts and connections not easily conveyed by earlier reporting styles. As such, new ecologies present the challenge of new writing. In this regard, Schoenbrun's detailed analysis is both a strength and a weakness. The denseness of his

prose may challenge even graduate students. Among the 29 contributions considered here, only Dove reflects on his choice of narrative construction as it relates to his subject matter. Dove deploys a general description of plantation managers and workers, citing the need for generalization in ethnographies of the state in part because "generalization is both a characteristic of the state and a matter of concern to its officials" (p. 205). Other writers depend on standard narrative forms that sometimes obscure the extent to which they incorporate innovative ideas. In the least, ecology's expanded scope requires that writers offer greater contextualization of their findings. As anthropologists become increasingly aware of the variety of ecological, ideological, social, political, and economic factors contributing to any given environmental situation, individual reportings must be offered with a keen awareness of the stories that remain to be told.

As with the future forms of ethnographic creativity, the end point is not yet in sight for testing new methods, new collaborations, and combinations of theories. The contributors to these four volumes illustrate the rewards inherent to this experimentation. Ecological studies in anthropology are expanding in topic, theory, methods, and applications. The theoretical challenge now lies in moving beyond former disciplinary divisions in order to meet the complexity of today's ecological issues.

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