Introduction

The Sad Opaqueness of the Environmental Crisis in Madagascar

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Abstract: *The deteriorating state of Madagascar's environments, constitutes an enigma that has so far proved insoluble. The island nation has turned to dissolving local land rights in nationalised parkland by turning to the Yellowstone conservation paradigm of instituting more exclusionary land from which local people are removed and excluded. The environmental crisis to which these measures respond are real and worrisome. Anthropologists involved in conservation have limited their involvement in the greening of Madagascar to their specialisations or sub disciplines. This has led to a muddled anthropology of conservation in which one side cancels out the other or, more often, the conservation core or elite peripheralises the side critical of conservation projects. I argue that anthropologists would be more effective if they sought a middle ground and conducted team fieldwork. The six papers in this special section investigate the theoretical middle ground, paving the way for future explorations of the methodological turn to work side by side and pooling our subdisciplinary training to resolve the environmental crisis by keeping people in the environment.*

Keywords: Madagascar, environment, conservation, anthropology, methods

INTRODUCTION

THE IDEA FOR THIS special section emerged while reviewing Janice Harper's (2002) *Endangered Species*. In that book, Harper described an alarming array of ill-effects upon local residents in eastern Madagascar instituted by national

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park personnel labouring to preserve various rare lemur species and their habitats. As an anthropologist with twenty months of primatological fieldwork at Beza Mahafaly Special Reserve in southwestern Madagascar and another twenty months of ethnographic fieldwork among primarily Mahafaly cattle herders, I could see various sides to the issue: primatologists placing lemurs first; ethnographers positioning Malagasy people first; and local people, who face enormous economic hardships, putting their children first. As told by Harper, the two 'sides' of academic anthropology at play in her case study had hardened into ideologies of otherness, where fingers of blame and bias pointed at the other when and if they recognised each other at all.[1] It was as if two people, after walking over the same ground, described their trek as occurring in alternative universes. Why, I wondered, had the sister subdisciplines of primatology and ethnography become so estranged?

Leaving aside for the moment the search for answers to this question, one consequence of this estrangement needs attention. The environmental crisis in the island nation of Madagascar continues to worsen *vis-à-vis* increased anthropological activity there. An estimated ten per cent of primary growth vegetation remains on the island (Du Puy and Moat 1996).[2] Deforestation continues to afflict habitats, leading the wave of an environmental crisis that in 1985 the Duke of Edinburgh and then president of the World Wildlife Fund described as equivalent to 'committing environmental suicide' (Jolly 2004: 210).[3] Conservationists and environmentalists have called attention to the plight of Madagascar's environments and biodiversity. They point out that Madagascar's natural wonders are approaching ruin from maladaptive anthropogenic practices such as burning that leads to deforestation, erosion, and habitat destruction (see, for example, Nicoll and Langrand 1989; Kottak and Costa 1993; Kottak et al. 1994; Richard and O'Connor 1997; Wright 1997; Durbin 1999; Benstead et al. 2000; Myers et al. 2000).

Anthropologists of all ilk (biological, linguistic, archaeological, ethnological, and applied) who have visited Madagascar recognise that an environmental crisis exists there (see, for example, Anderson 2005). Common sense suggests that a holistic environmental anthropology could help to abate the crisis by involving the sub-disciplines in complementary ways. Anthropological perspectives could highlight environmental issues from several perspectives (e.g., biology, conservation, and ethnography), contextualise and historicise anthropogenic pressures using quantitative and qualitative methods, and link sustainable solutions to successful indigenous practices and values systems.[4]

Yet no holistic environmental anthropology has emerged there, which suggests that many anthropologists working in Madagascar treat the environmental crisis as if it was somebody else's problem. Following Arendt (1980: 4), in which she describes a 'sad opaqueness', *épaisseur triste*, in a 'private life centered about nothing but itself', I submit that such a sad opaqueness obscures Madagascar's environmental crisis. We anthropologists often seem lost

in our individual projects, accomplishing the important scientific role of pushing the envelope of knowledge about the human species and disseminating that knowledge to the public, but disengaged from the higher purpose of doing what we can to preserve biological diversity on earth. As a group, we appear to have lost sight of this enlightened environmentalism—with roots in modern over-consumption pushing the earth to its limits. Only the primatologists, who have the most to lose in the short term and are well rewarded in grant monies, have done much about it. But as a group we fall short, loitering at testing intersubdisciplinary study.

Writing with subdisciplinary focus triggers no alarms. What alarms me, perhaps others too, is the growing ignorance of what the other type of anthropologist is doing or learning. Marshall Sahlin's observation appears not to apply: 'We seem perilously close to that characteristic failing of interdisciplinary study—an enterprise which often seems to merit definition as the process by which the unknowns of one's own subject matter are multiplied by the uncertainties of some other science' (Sahlins 1972: 51). We might think of anthropology as the prima donna of interdisciplinary study, but our lip service to holism reveals our discipline to be a prima without the donna. Anthropologists have a long way to go, then, towards developing a collaborative methodology that pools our resources and expertise to address more effectively Madagascar's environmental crisis (cf. Goodman and Benstead 2003 for the accomplishments of natural scientists in this regard).

My aim in this critique is not to weaken anthropology but to point to its limitations and to argue that it could play a larger role in the conservation of Madagascar's environments if it was not caught up in something of a sibling rivalry. Why is the need for conservation in Madagascar anything but a self-evident truth? Surely anthropology's concern for diversity and biological variation emanates not from cultural relativism but a search for a few commonalities affecting all *Homo sapiens*. If conservation fails in Madagascar—admittedly not the largest environmental 'hotspot' in the world, but arguably one of the most diverse—then where will it succeed?

This collection of articles moves anthropological theory a step closer to a holistic environmental anthropology (see also Campbell 2005). Each article seeks a middle ground position between the extremes of nature and culture, sui generis. Each author strives to describe particular anthropogenic impacts to nature, to include Malagasy voices avowing their awareness of changes upon the conditions of their lived environments, and to situate the local within extralocal contexts through time. In doing so, the authors throw light on the environmental crisis in Madagascar.

This special section introduces readers to some of Madagascar's environments, several new perspectives on conservation issues, and a sampling of high-quality scholarship that researchers in Madagascar produce. This pursues Michael Lambek's (2001: 301) request that 'Malgachisants need to make stronger efforts to build bridges, to make comparisons with continental Afri-

can and insular Southeast Asian cases . . . and to learn from the application of common paradigms.' Readers of this journal should find familiarity in Valérie Lilette's article on fisher's conservation efforts of marine tortoise and tropicbird species. Conversely, this author's and Sylvestre Tsirahamba's article on pastoralist forest uses in the southwest's spiny forests might prove novel to some readers. Jane C. Ingram's and Terence P. Dawson's article on forest cover conditioned by humans is an excellent example of the high level of conservation scholarship coming from Madagascar.

A further goal of these papers is to publicise some successes in conservation. The anthropology literature, especially in cultural anthropology, devotes little attention to conservation accomplishments. The critical arm has grown mightily while the collaborative arm remains stunted as practitioners bypass the Socratic method of searching for commonalities and empathetic understanding, and take the easy route to criticise a position without a deep understanding of it (Lewis 1998).[5] All papers in this section bring out various aspects of—albeit limited—conservation success stories. For example, Douglas William Hume's article on swidden horticulturalists elicits some of their perspectives on the changing forest conditions, revealing that if they could they would stop 'committing environmental suicide'.

The last objective coursing through these papers considers the benefits of approaching Madagascar's environments through a landscape approach. In the article by Clare Sandy, this approach yields fresh insights into how different, sometimes competing, conceptions of the land and different ways of being on the land effect the landscape, thereby complicating the problem of conservation. Hume similarly reveals the nuances between stakeholders competing to shape the landscape of a tropical rainforest and its users. Ingram and Dawson use the landscape approach to clarify anthropogenic impacts on littoral forests, demonstrating that long-term residents sustain high levels of utilitarian species, which in turn helps to sustain nonutilitarian species. Kaufmann and Tsirahamba demonstrate that, in one case, a local pastoralist landscape has relieved human pressure on primary forests and high concentrations of species endemism, and, in another case, that political–economic factors beyond their control have impacted forests long preserved by Mahafaly pastoralists.

The six articles in this special section present, therefore, new perspectives on the conservation of nature in Madagascar. They demonstrate both scientific and humanistic engagements with Madagascar's crisis of the environment. Each article relates to a different geographical context in the large, biologically rich, and diverse island, which illuminates a mosaic of varying environments. The ways in which people factor into different environments in the mosaic, constructing part of their identity from their relationships with the environment, unites the texts around an anthropological theme. This focus on people in the environment is inspired both by cultural ecology—the cultural ways that local people interact with their environments—and by 'new ecology' of the political ecology and historical ecology sort, to bring out how ex-

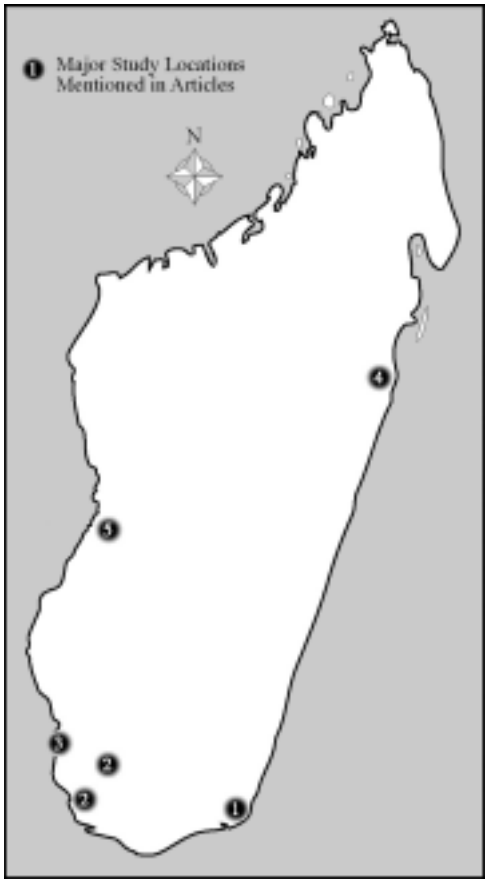
tralocal political factors become inscribed on the land and how nature–culture synergisms change over time and affect the landscape along with local people (Balée 1998; Scoones 1999; Neumann 2005).[6]

Madagascar in Nature

One may wonder if a people-oriented theme strays too far from Madagascar's distinction in the world as home to a unique Nature with a capital N, where speciation, endemism, and biodiversity count among its highlights. If ever there was an objectified, reified, 'Nature'—distinct from culture and like no

Figure 1

Map of Madagascar, showing study locations



Notes: (1) Littoral rainforest (Ingram and Dawson), (2) spiny forest (Kaufmann and Tsirahamba), (3) marine area (Lilette), (4) rainforest (Hume), (5) dry deciduous forest (Sandy).

other place on earth—Madagascar would seem to be that place. To borrow Alison Jolly's memorable phraseology, evolution produced in Madagascar an 'alternate world' where 'time has broken its banks and flowed to the present down a different channel' (Jolly 1980: 10). The same rules of evolution apply to Madagascar as elsewhere but the outcomes 'flowed down a different channel' as if the island were another world. Geologic time 'broke its banks' in the Jurassic, approximately 170 million years ago, when the Malagasy tectonic plate separated from Africa's southern Somalia–Kenya–Tanzania coastline, and again in the Cretaceous about 80 million years ago, when it split from India and became an isolated island (Wells 2003: 26, 29).

Madagascar ranks high on conservation priority lists because of its threatened ecosystems and habitat heterogeneity, including its exceedingly high rates of species endemism and turnover in species composition within relatively short distances (Randrianandianina et al. 2003). 'The Great Red Island', so-called for its distinctive but soft and easily eroded red laterite soil, has been designated a 'megadiversity country' (Mittermeier et al. 1997), a UNESCO World Heritage site, and one of the 'hotspots' for biodiversity conservation (Myers et al. 2000). With a land mass of 587,042 sq km, amounting to 0.4 per cent of Earth's land surface, the world's fourth largest island (after Greenland, New Guinea, and Borneo) contains a spectacular array of endemic families found nowhere else on the planet: ten plant families; five bird families; five lemur families; and both highly diverse and endemic numbers of reptiles and amphibians, with frogs being the only amphibian on the island (Mittermeier 2000). Its endemic species amount to ten thousand endemic plant species, three hundred and sixteen endemic reptile species, one hundred and nine endemic bird species, and seventy-one primate species found only there (Conservation International 2003).

While isolation permitted enormous advantages for the evolution of this 'alternate world,' it presented also a significant disadvantage. Madagascar's biota were not adapted to humans and, as a 'virgin' environment in which humans were extrinsic to the processes of 'alternative world-making,' its biota did not fare well with contact. Because Madagascar's endemic flora and fauna did not co-evolve with humans, with the first settlers from the Austronesian speaking part of the world via Africa arriving on its shores a mere two thousand years ago, isolation disadvantaged plants and animals newly confronted with the innovative, competitive, and exotic *Homo sapiens*. Adding insult to injury, island habitats—especially those protected by isolation from the wider world—are notoriously fragile *vis-à-vis* human colonisation (Dewar 1997).

Once people arrived on the scene, with their capacity for culture and ability to transcend some of their biological limitations, they entered rapidly—some would say 'abruptly'—the flow of life in Madagascar (Wright and Rakotoarisoa 2003). Numerous introductions occurred including anthropogenic fires, floristic competition by cattle, new diseases, and predation by rats, dogs, cats, and humans (Dewar 2003). Among the legacies attributed to Malagasy

people were rapid deforestation of the highlands and several mass faunal extinctions, including the elephant birds, the giant lemurs, and the pygmy hippopotamus (Burney 1997; Burney and Ramilisonina 1999). Madagascar's fragile and easily out-competed vegetation is evident in both rain forest belts and savanna woodlands that recover weakly from fire, allowing exotic species to expand, such as eucalyptus and *Ravenala madagascariensis*—the latter appearing only after human intrusions into primary forests (Gade and Perkins-Belgram 1986; for *Ravenala* see Feeley-Harnik 2001, for eucalyptus see Anderson 2005). As a result, the received wisdom considers the threat to Madagascar's many rare species as not only anthropogenic but intrinsically so.

Extrinsic and Intrinsic

Two facts bear underscoring from the above discussion of a people-oriented theme in a nature-rich island. First, the late arrival of humans to the island means that people were *extrinsic* to most of Madagascar's natural history. The archaeological evidence is unequivocal on this point. Second, since settling on the island, Malagasy people have been *intrinsic* to the changed conditions of many of its environments. Contentions arise over this second fact, in particular over its implications on nature and culture, to which I turn next.

In the interest of space, a heuristic is useful here. We can posit two opposing positions towards which the contentions about conservation and society in Madagascar sway. The first position considers culture as naturally damaging to nature. This may be called the 'Cartesian' position for its root idea of a categorical division between nature and culture. In a place like Madagascar—where human inhabitation came lately, followed by worrisome alterations—the nature–culture dichotomy appears to stand out as opposites. One sees what one wants to. Where one sees culture, one does not see much nature remaining; and where one sees nature, one does not see much culture in evidence. That people were extrinsic to Madagascar adds weight to their intrinsic negative impact on wildlife after they settled there.

The solution to this Cartesian problem, then, is to save nature from its antithesis, culture. By making communities of Malagasy who threaten biodiversity 'hotspots' more extrinsic to those environments redresses anthropogenic changes to nature. Removing the people who use up natural resources, so this argument goes, is a small price to pay for saving the biodiversity contained in this World Heritage site. Local values are incommensurate with the global value of a World Heritage site. This is not a hackneyed matter among academics. Projects that attempt to integrate conservation and development (ICDP) or that link conservation objectives to the needs of local communities are quickly falling out of favour in Madagascar.[7] Creating a safe space for nature by creating a better livelihood for local people proved much more difficult to implement than to plan (Hanson 1997; Gezon and Freed 1999). 'Fortress

conservation' (Brockington 2001), which is based on the Yellowstone paradigm, has re-emerged after experiments with community-based conservation failed or fell short of expectations. Land is now being purchased outright from villagers and converted to parks that they cannot access. How the money will be distributed, and the effects that the infusion of cash will have on those villagers or village strata who will receive the lion's share of money, has not been analysed. Here certainly is a place where cultural anthropologists could help the administrative branch of Madagascar's park system (ANGAP). Yet, social, economic, and political problems facing communities neighbouring the parks are becoming more externalised and of secondary importance to conserving nature.

That an environmental crisis exists on the island is not disputed seriously. But how can this be remedied? Conservation International estimates that, over the last twenty years, the country lost eleven million hectares of forest: from twenty million to nine million hectares of forest remaining (Conservation International 2003). Many primatologists, for example, alarmed at the decline in lemur natural habitats, have shifted into salvage mode. In the 1980s, they joined with conservation biologists and environmental organisations in a campaign to save lemur habitats. The fact that lemurs and their plight are now known around the world, whereas the plight of Madagascar's peoples and cultures are not, testifies to the success of their involvement in the conservation campaign.

World-wide attention to the need for conservation in Madagascar helped to motivate President Marc Ravalomanana's 2003 announcement that by 2008 the country's protected-areas network would be tripled from 1.7 million hectares to 6 million hectares (Conservation International 2003; Gaylord 2004).[8] He also recognised his country as a World Heritage site in his speech to the 5th World Parks Congress in Durban, South Africa. 'We can no longer afford to sit back and watch our forests go up in flames,' Ravalomanana said. 'This is not just Madagascar's biodiversity, it is the world's biodiversity. We have the firm political will to stop this degradation' (Conservation International 2003).[9] The President's tripling of national park lands has rejuvenated interest in the Yellowstone model that externalises local people from wildlife parks designed for ecotourism.

The proposed additions to the protected-areas network aim to 'represent the myriad of ecosystems as well as a broad range of the unique endemic organisms found on the island' (Randrianandianina et al. 2003: 1429). 'Protected areas must include sufficiently large natural habitats in order to fulfill their long-term protective roles, and the negative anthropogenic pressure that they undergo must also be controlled' (Randrianandianina et al. 2003: 1429). Increasing the size of the protected-areas network and externalising local people are projected to decrease the anthropogenic pressures to land and biota. The current, more aggressive, management of Madagascar's environmental crisis thus aims to maximise nature and to minimise culture.[10]

The second position on the heuristic for exploring the intrinsic harm to nature by local landusers departs radically from the Cartesian position. Rather than being intrinsically opposed to nature, cultures are considered central to the way humans subjectively come to know nature, to make a way of life in the world, and to know themselves. This may be called the 'Kantian' position for its root idea of merging nature and culture through human subjectivity. This characterises the revisionist view that has surfaced recently in the Malagasy literature that challenges the conventional wisdom weighted towards the Cartesian position. The Kantian view does not challenge the uncontested fact that human agency has impacted negatively Madagascar's biophysical environments but it revises the extent of blame that can be laid at the feet of local populations. The revisionists point out that, based on their analyses of colonial era documents, on ethnographic fieldwork, and on observations of indigenous practices, Malagasy peasants, pastoralists, and foragers are as intrinsic to the solution as they are to the problem of the island's environmental crisis (Jarosz 1993; Feeley-Harnik 1995; Rakotoarisoa 1997; Seddon et al. 2000; Harper 2002; Réau 2002; Simsik 2002; Klein 2004; Kull 2004; Edwards et al. forthcoming).

Two prominent cultural anthropologists working in Madagascar demonstrated more than a decade ago that culture may as easily abuse nature as not. Kottak discussed some of the unsustainable practices among Betsileo rice farmers in an effort to redress romanticised assumptions of peasants being naturally good stewards of the land (Kottak and Costa 1993). Bloch demonstrated that traditional Zafimaniry peasants favoured a treeless landscape, a radically different landscape than envisioned by Western conservationists working to save the island's remaining forests (Bloch 1995). Accordingly, Madagascar's people who eke out a living by agriculture and who face numerous political and economic problems should not be made external to the environment. Peripheralising their limited choices (Feeley-Harnik 1995), their underpriviledge (Walsh 2005), and their poor health (Harper 2002) to the conservation core, further deepens issues of environmental (in)justice which fuels some peasants to take it out on the land in politically motivated forest burning (Klein 2004; Kull 2004). Such peripheralisation rings of gratuitous politics and arbitrariness (Buttoud 1995; Marcus and Kull 1999a, 1999b; Paulson et al. 2003). A similar arbitrariness exists in the concept of biodiversity 'hotspots', which ironically, may have dire consequences on biological diversity. Focusing attention and money in a few small locales ignores 'coldspots' where biological uniqueness and endemism exist in a larger region but not in the concentrated form of a 'hotspot'—a mere speck on a map (Kareiva and Marvier 2003; O'Conner et al. 2003).

No one who reads the Anglophone anthropological literature on Madagascar should doubt that primatologists and ethnographers are on rather bad terms with each other. It is rare to find books such as Peter Tyson's (2000) *The Eighth Continent* or Alison Jolly's (2004) *Lords and Lemurs* in which the

authors attempt holistic accounts of humans and nature by interlacing their stories. Such blended accounts become lost in the usual fray that posits life in Madagascar with a mirage of mutual exclusiveness. Suspicion of the other subdiscipline grows, making it harder to learn what the other is doing or even to refer to lemur studies and people studies in the same breath except perhaps in disparaging tones. The tight competition for research funds and journal space further exacerbates this methodological shortsightedness. Rather than mutual understanding of complementarities, with each side contributing what they can to conservation and healthy environments in Madagascar, anthropologists working in Madagascar tend to go their own way. Adding to Lambek's (2001) call for a better comparative anthropology, which I quoted above, Malgachisants need to make stronger efforts to build bridges among the anthropological subdisciplines, as only a few have done (Gezon and Freed 1999; Richard and Dewar 2001), and to create a common paradigm.

Anthropologists, then, whether primatologists doing research on populations of lemurs or social–cultural anthropologists working with its autochthon populations of Malagasy, share a common interest in conserving Madagascar's environments. But much depends on whether they take a Cartesian or a Kantian stance toward nature and culture. Most cultural anthropologists have nothing against conservation; but they do care about how conservation projects are carried out. Methods matter, especially when projects leave local people out of the project, out of the decision making process, or out of a living and even a way of life.

A Middle Ground

There is another way, one that lies between the status quo and the revisionists perspectives outlined above. Culture and nature are best understood as a synergism and not as a dichotomy (Whitehead 1998). Culture and nature are not discrete terms but interactive ones, effecting change upon the other, never guaranteeing adaptation or equilibrium (Scoones 1999). This collection of papers moves theory toward this middle ground and away from the extremes. Focusing only on either natural history or on cultural ecology, which provide for significant scientific discoveries, ignores the contingencies of history and the synergisms between nature and culture that historical anthropology can reveal. These papers address society's role in conservation as it is historically presented, not as natural categories (extrinsic or intrinsic) explicable by certain assumptions about human nature (essentially good or essentially bad, rational or irrational) and its concomitant cynosure, culture (see Kaufmann 2001 for the ethnohistorical considerations).

Pursuing the middle ground eludes the extreme positions that obscure Madagascar's environmental crisis in a sad opaqueness. It avoids the tendency to treat Malagasy people living in local environments as either external to conservation, or if they are internal, as either demonised or valorised agents.

This methodological shift to the middle, to listen to all sides, introduces us to Malagasy voices who accept their responsibility in degrading their environments but who lack the means to do otherwise (Feeley-Harnik 1995; cf. Bloch 1995; Walsh 2005).

My attempt at answering the question 'Why have the sister subdisciplines of primatology and ethnography become so estranged?' has shown that part of the answer has to do with Madagascar itself. Being an island, isolated from and unencumbered by the human species over most of its history, the debates over nature verses culture seem to have found an obvious home. But another part of the answer lies beyond Madagascar, at the source of the debates in western worldviews, environmental agendas, and anthropological assumptions (Rich 1994; Helmreich 2005). In Weberian terms, this effort enhances our *Verstehen*—our understanding of the qualitative differences between human science and natural science. The next step towards developing a holistic environmental anthropology in Madagascar will begin to engage collaborative research in the betterment of conservation (Kaufmann forthcoming [2007]).

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Notes

1. Harper explores this problem in an ethnography of a conservation organisation in a forthcoming chapter (Harper forthcoming).
2. This of course assumes that the base level or original forest cover is known, which is not (see Dufiles 2003 and Jarosz 1996 for some methodological considerations of deforestation).

3. Estimated rates of deforestation vary widely, from one per cent to approaching double digits, calling for improved methods of determining what constitutes a forest and its rate of deforestation (Dufiles 2003).
4. For example, cultural anthropologists '. . . should be working on more sustainable, low-impact ways of developing agriculture, logging, fishing, and so on' (Anderson 2006).
5. Yet the way has been paved in our anthropological training to deal with the bilateral anthropological mantra of ethnocentrism and cultural relativism.
6. Another source of inspiration is historical anthropology, which is a hallmark of the social and cultural anthropology done in Madagascar (Bloch 2001).
7. Sustainable development—developing peasant economies in ways that sustain both themselves and the biophysical environments in which they live—might look good on paper, but in Madagascar it works as window dressing for the financiers of the conservation sector.
8. Terrestrial coverage will increase from the 2003 total of 1.5 million hectares to 5 million hectares and its coastal and marine-area coverage will expand from 200,000 hectares to 1 million hectares (Conservation International 2003).
9. As early as 1927, the colonial French government set aside eight reserves in different parts of the island accounting for 284,919 hectares of surface area (Randrianandianina et al. 2003: 1424–25, Table 14.1). By the end of French colonial rule in the late 1950s another sixteen protected areas were added to the network, which covered an additional 375,596 ha (Randrianandianina et al. 2003). During the 1960s and including 1970, the first Malagasy government after independence added six more protected areas and 93,393 ha (Randrianandianina et al. 2003). In the 1980s and 90s, non-governmental organizations from abroad collaborated with the Malagasy Republic to more than double the protected surface area by forming fifteen more protected areas accounting for 944,731 ha (Randrianandianina et al. 2003). As of 2003, the total surface area in the protected-area network was 1,698,639 hectares.
10. Controlling the anthropogenic pressues comes at what price? What percentage of forest loss will induce policy makers to include local residents of all strata and ethnicity in the equal partnership of saving Madagascar's environments? How long will the learning curve take and how much more degradation will insue?

REFERENCES

Anderson, G. 2005. Madagascar on My Mind: Ground-Truthing Some Conventional and Unconventional Wisdom. Unpublished paper: www.krazykioti.com/.

Anderson, G. 2006. Communities and Conservation Thread. Eanth-l@listserv.uga.edu.

Arendt, H. 1980 [1954]. *Between Past and Future*. Penguin Books, New York.

Balée, W. 1998. *Advances in Historical Ecology*. Columbia University Press, New York.

Benstead, J.P., M.L.J. Stiassny, P.V. Loiselle, K.J. Riseng, and N. Raminosoa. 2000. River Conservation in Madagascar. In: *Global Perspectives on River Conservation: Science, Policy, and Practice* (eds. P.J. Boon, B.R. Davies, and G.E. Petts), pp. 203–229. John Wiley and Sons, Chichester.

Bloch, M. 1995. People into Places: Zafimaniry Concepts of Clarity. In: *The Anthropology of Landscape: Perspectives on Place and Space* (eds. E. Hirsch and M. O'Hanlon), pp. 63–77. Clarendon, Oxford.

Bloch, M. 2001. The ethnohistory of Madagascar. *Ethnohistory* 48(1–2):293–299.

Brockington, D. 2001. *Fortress Conservation: The Preservation of the Mkomazi Game Reserve, Tanzania*. James Currey, Oxford.

Burney, D.A. 1997. Theories and Facts Regarding Holocene Environmental Change Before and After Human Colonization. In: *Natural Change and Human Impact in Madagascar* (eds. S.M. Goodman and B.D. Patterson), pp. 75–89. Smithsonian Institution Press, Washington D.C.

Burney, D.A. and Ramilisonina. 1999. The *kilopilopitsofy, kidoky*, and *bokyboky*: accounts of strange animals from Belo-sur-mer, Madagascar, and the megafaunal 'extinction window'. *American Anthropologist* 100(4): 957–966.

Buttoud, G. 1995. *La forêt et l'État en Afrique sèche et à Madagascar: Changer de politiques forestières*. Karthala, Paris.

Campbell, B. 2005. Changing protection policies and ethnographies of environmental degradation. *Conservation and Society* 3(2): 280–322.

Conservation International. 2003. Madagascar to Triple Areas under Protection. www.conservation.org

Dewar, R.E. 1997. Does it matter that Madagascar is an island? *Human Ecology* 25(3): 481–489.

Dewar, R.E. 2003. Relationship between Human Ecological Pressure and the Vertebrate Extinctions. In: *The Natural History of Madagascar* (eds. S.M. Goodman and J.P. Benstead), pp. 119–122. University of Chicago Press, Chicago.

Dufiles, J.-M. 2003. Remaining Forest Cover. In: *The Natural History of Madagascar* (eds. S.M. Goodman and J.P. Benstead), pp. 88–96. University of Chicago Press, Chicago.

Du Puy, D.J. and J. Moat. 1996. A Refined Classification of the Primary Vegetation of Madagascar Based on the Underlying Geology, using GIS to Map Its Distribution and to Access Its Conservation Status. In: *Biogeographie de Madagascar* (ed. W.R. Lourenco), pp. 205–218. ORSTOM, Paris.

Durbin, J.C. 1999. Lemurs as Flagships for Conservation in Madagascar. In: *New Directions in Lemur Studies* (eds. B. Rakotosamimanana, H. Rasamimanana, J.U. Ganzhorn, and S.M. Goodman), pp. 269–281. Plenum, New York.

Edwards, M., J. Klein and B. Réau. Forthcoming. Zebu Landscapes: Conservation and Cattle in Madagascar. In: *Greening the Great Red Island: Madagascar in Nature and Culture* (ed. J.C. Kaufmann). AISA, Pretoria.

Feeley-Harnik, G. 1995. Plants and people, children or wealth: shifting grounds of 'choice' in Madagascar. *PoLAR: Political and Legal Anthropology Review* 18(2):45–64.

Feeley-Harnik, G. 2001. *Ravenala madagascariensis sonnerat*: the historical ecology of a 'flagship species' in Madagascar. *Ethnohistory* 48(1–2):31–86.

Gade, D. and A.N. Perkins-Belgram. 1986. Woodfuels, reforestation, and ecodevelopment in highland Madagascar. *GeoJournal* 12(4):365–374.

Gaylord, L. 2004. Madagascar national parks triple size of protected areas. *USAID in Africa* Spring:5–6.

Gezon, L.L. and B.Z. Freed. 1999. Agroforestry and conservation in northern Madagascar: hopes and hindrances [sic]. *African Studies Quarterly* 3(2), web.africa.ufl.edu/asq.

Goodman, S.M. and J.P. Benstead (eds.). 2003. *The Natural History of Madagascar*. University of Chicago Press, Chicago.

Hanson, P.W. 1997. The Politics of Need Interpretation in Madagascar's Ranomafana National Park. PhD thesis. Department of Folklore and Folklife, University of Pennsylvania.

Harper, J. 2002. *Endangered Species: Health, Illness and Death among Madagascar's People of the Forest*. Carolina Academic, Durham.

Harper, J. Forthcoming. The Environment of Environmentalism: Turning the Ethnographic Lense on a Conservation Project. In: *Greening the Great Red Island: Madagascar in Nature and Culture* (ed. J.C. Kaufmann). AISA, Pretoria.

Helmreich, S. 2005. How scientists think: about 'natives', for example. A problem of taxonomy among biologists of alien species in Hawaii. *Journal of the Royal Anthropology Institute* (N.S.) 11:107–128.

Jarosz, L. 1993. Defining and explaining tropical deforestation: shifting cultivation and population growth in colonial Madagascar (1896–1940). *Economic Geography* 69(4):366–379.

Jarosz, L. 1996. Defining Deforestation in Madagascar. In: *Liberation Ecologies: Environment, Development, Social Movements* (eds. R. Peet and M. Watts), pp. 148–164. Routledge, London.

Jolly, A. 1980. *A World Like Our Own: Man and Nature in Madagascar*. Yale University Press, New Haven.

Jolly, A. 2004. *Lords and Lemurs: Mad Scientists, Kings with Spears, and the Survival of Diversity in Madagascar*. Houghton Mifflin, New York.

Kareiva, P. and M. Marvier. 2003. Conserving biodiversity coldspots. *American Scientist* 91:344–351.

Kaufmann, J.C. (ed.). 2001. Emerging histories in Madagascar. *Ethnohistory* 48(1-2):3–322.

Kaufmann, J.C. (ed.). Forthcoming [2007]. *Greening the Great Red Island: Madagascar in Nature and Culture*. AISA, Pretoria.

Klein, J. 2004. Fiddling while Madagascar burns: deforestation discourses and highland history. *Norsk Geografisk Tidsskrift – Norwegian Journal of Geography* 58:1–12.

Kottak, C. and A.C.G. Costa. 1993. Ecological awareness, environmentalist action, and international conservation strategy. *Human Organization* 52:335–43.

Kottak, C., L. Gezon and G. Green. 1994. Deforestation and Biodiversity Preservation in Madagascar: The View from Above and Below. http://www.ciesin.org/kiosk/publications/94-0005.txt.

Kull, C.A. 2004. *Isle of Fire: The Political Ecology of Landscape Burning in Madagascar*. University of Chicago Press, Chicago.

Lambek, M. 2001. Reflections on the 'ethno'- in Malagasy ethnohistory. *Ethnohistory* 48(1-2):301–308.

Lewis, H.S. 1998. The misrepresentation of anthropology and its consequences. *American Anthropologist* 100(3):716–731.

Marcus, R.R. and C. Kull (eds.). 1999a. The politics of conservation in Madagascar. *African Studies Quarterly* 3(2), web.africa.ufl.edu/asq.

Marcus, R.R. and C. Kull. 1999b. Setting the stage: the politics of Madagascar's environmental efforts. *African Studies Quarterly* 3(2), web.africa.ufl.edu/asq.

Mittermeier, R.A. 2000. Foreword to Peter Tyson's *The Eighth Continent: Life, Death, and Discovery in the Lost World of Madagascar*, xv–xxi. William Morrow, New York.

Mittermeier, R.A., P.R. Gil and C.G. Mittermeier. 1997. *Megadiversity: Earth's Biologically Wealthiest Nations*. Cemex, Mexico City.

Myers, N., R. Mittermeier, C.G. Mittermeier, G.A.B. da Fonseca, and J. Kent. 2000. Biodiversity hotspots for conservation priorities. *Nature* 403:853–858.

Neumann, R. 2005. *Making Political Ecology*. Hodder Arnold, London.

Nicoll, M.E. and O. Langrand. 1989. *Madagascar: Revue de la conservation et des aires protégées*. WWF, Gland.

O'Connor, C., M. Marvier and P. Kareiva. 2003. Biological vs social, economic and political priority-setting in conservation. *Ecology Letters* 6:706–711.

Paulson, S., L.L. Gezon, and M. Watts. 2003. Locating the political in political ecology: an introduction. *Human Organization* 62(3):205–217.

Rakotoarisoa, J-A. 1997. A Cultural History of Madagascar: Evolution and Interpretation of the Archaeological Evidence. In: *Natural Change and Human Impact in Madagascar* (eds. S.M. Goodman and B.D. Patterson), pp. 331–341. Smithsonian Institution Press, Washington D.C.

Randrianandianina, B.N., L.R. Andriamahaly, F.M. Harisoa and M.E. Nicoll. 2003. The Role of the Protected Areas in the Management of the Island's Biodiversity. In: *The Natural History of Madagascar* (eds. S.M. Goodman and J.P. Benstead), pp. 1423–1432. University of Chicago Press, Chicago.

Réau, B. 2002. Burning for zebu: The complexity of deforestation issues in western Madagascar. *Norsk Geografisk Tidsskrift – Norwegian Journal of Geography* 56:219–229.

Rich, B. 1994. *Mortgaging the Earth: The World Bank, Environmental Impoverishment, and the Crisis of Development*. Beacon Press, Boston.

Richard, A.F. and R.E. Dewar. 2001. Politics, Negotiation, and Conservation: A View from Madagascar. In: *African Rain Forest Ecology and Conservation* (eds. W. Weber, L.J.T. White, A. Vedder and L. Naughton-Treves), pp. 535–544. Yale University Press, New Haven.

Richard, A.F. and S. O'Connor. 1997. Degradation, Transformation, and Conservation: The Past, Present, and Possible Future of Madagascar's Environment. In: *Natural Change and Human Impact in Madagascar* (eds. S.M. Goodman and B.D. Patterson), pp. 406–418. Smithsonian Institution Press, Washington D.C.

Sahlins, M. 1972. *Stone Age Economics*. Aldine de Gruyter, New York.

Scoones, I. 1999. New ecology and the social sciences: What prospects for a fruitful engagement? *Annual Reviews of Anthropology* 28:479–507.

Seddon, N., J. Tobias, J.W. Yount, J.R. Ramanampamonjy, S. Butchart, and H. Randrianizahana. 2000. Conservation issues and priorities in the Mikea Forest of South-west Madagascar. *Oryx* 34(4):287–304.

Simsik, M.J. 2002. The political ecology of biodiversity conservation on the Malagasy highlands. *GeoJournal* 58:233–242.

Tyson, P. 2000. *The Eighth Continent: Life, Death, and Discovery in the Lost World of Madagascar*. William Morrow, New York.

Walsh, A. 2005. The obvious aspects of ecological underprivilege in Ankarana, northern Madagascar. *American Anthropologist* 107(4):654–665.

Wells, N.A. 2003. Some Hypotheses on the Mesozoic and Cenozoic Paleoenvironmental History of Madagascar. In: *The Natural History of Madagascar* (eds. S.M. Goodman and J.P. Benstead), pp. 16–34. University of Chicago Press, Chicago.

Whitehead, N. 1998. Ecological History and Historical Ecology: Diachronic Modeling versus Historical Explanation. In: *Advances in Historical Ecology* (ed. W. Balée), pp. 30–41. Columbia University Press, New York.

Wright, H.T. and J-A Rakotoarisoa. 2003. The Rise of Malagasy Societies: New Developments in the Archaeology of Madagascar. In: *The Natural History of Madagascar* (eds. S.M. Goodman and J.P. Benstead), pp. 112–119. University of Chicago Press, Chicago.

Wright, P.C. 1997. The Future of Biodiversity in Madagascar: A View from Ranomafana National Park. In: *Natural Change and Human Impact in Madagascar* (eds. S.M. Goodman and B.D. Patterson), pp. 406–418. Smithsonian Institution Press, Washington D.C.