

# Indigenous Knowledge and the Environment

*David M. Gordon and Shepard Krech III*

“INDIGENOUS KNOWLEDGE” excites and infuriates. One of its leading academic proponents and critics, Michael Dove, argues that its conceptual space has evolved from “innovative tool to hackneyed dichotomy.”<sup>1</sup> Historians and anthropologists are uncomfortable at its mention—increasingly so, we sense, at the very moment that others press its birth as a discipline. After all, is not the notion of an impenetrable body of knowledge that belongs to an unchanging group of indigenes a romantic projection of our modern imaginations into the past? As newcomers—transients and immigrants—arrive in any particular place, some conquering, some settling, some exchanging genes and culture, and so on, with people already present, might not the notion of “indigenous” lack historical nuance? At the same time, however, indigenous knowledge holds political appeal and moral valence. It offers an alternative to a Western teleology of civilization (or development), even if the notion is a creation of the encounter between the West and the rest. It offers an alternative to the power-knowledge nexus of Western thought, and yet it introduces its own modalities of power. It

unsettles stable categories of knowledge and fields of human agency, such as science and religion, and then tends to confirm the very same epistemological oppositions. This conceptual and political slipperiness is what makes “indigenous knowledge” such an academic apostasy, so essential and so interesting to study.

This book investigates the historical constructions, the political uses, and the epistemological nuances of indigenous knowledges. Rather than claiming that indigenous knowledge stands in some kind of exterior relationship to Western conquest, colonialism, and science, we argue that the emergence of modern indigenous knowledges was intimately related to conquest and colonial rule. This is not to claim that people who are now termed indigenous—or who term themselves indigenous—did not have knowledge prior to contact with Europeans. Quite the opposite: the chapters in this volume detail such precolonial forms of knowledge. But they also show that during times of conquest and colonization, by Europeans and by others, attaching “indigenous” to “knowledge” often was, and often continues to be, a strategy entwined with acts of domination and resistance. Rather than an established body of knowledge that can be owned, written, and transmitted unchanged over time, we regard indigenous knowledges as claims, as strategic maneuvers that challenge the imposition of power and make claims to power. Most of all, we reveal modern indigenous knowledges as palimpsests upon which, if we look carefully and ask the right questions, we can detect the signs of past conflicts that scraped out notions of indigeneity.

We are not the first to notice the conceptual and political inconsistencies of indigenous knowledge. In a seminal article that appeared just as indigenous knowledge became the catchphrase of environmental and developmental policy-makers and activists, Arun Agrawal pointed to the fallacious oppositions that scholars and activists invoke between “Western science” and indigenous knowledge. Agrawal argued that the tendencies to try to “preserve” indigenous knowledges *ex situ* have not confronted the political and economic processes that marginalize people termed “indigenous.”<sup>2</sup> Others, including Dove, Roy Ellen, and Paul Sillitoe, have followed Agrawal with significant contributions to the debate that we join in this collection.<sup>3</sup>

This book emerged from the conference “Indigenous Environments: African and North American Environmental Knowledge and Practices Compared,” held at Bowdoin College on April 3–5, 2008, and supported by the Mellon Foundation. Both the conference and this volume were premised on the belief that in juxtaposing scholarship on two continents,

a vision clarifying still-pressing predicaments of the concept of indigenous knowledge would emerge.<sup>4</sup> In its expansive and comparative scope, this work is related to several recent conferences and volumes focused on traditional environmental knowledge, indigenous knowledge, or natural knowledges.<sup>5</sup> To this literature, this volume adds a sustained historical focus that supports its contention and contribution: the notion and character of modern indigenous knowledges emerged from the contested terrains of conquest and colonialism. Since then, those on the periphery of postcolonial and neocolonial centers of power have resurrected and sustained indigenous knowledges in an effort to exert greater control over their lives and reverse ongoing processes of marginalization.

The cases in this volume make possible comparison of separate historical and colonial experiences on two continents; separate encounters and outcomes in meetings of indigenous and nonindigenous people and their environmental knowledges. The experiences in North America alone seem remarkably diverse, from the Southeast (a cluster of cases) and the Great Lakes to the Southwest and the Pacific Northwest. European settlers and, in the Southeast, African slaves colonized this vast territory over a period of several centuries. The majority of contributions from Africa come from southern Africa, an area in itself almost as diverse as North America, first settled by Khoe and San peoples, then colonized by various Bantu-speaking groups, and approximately one thousand years later by settlers from European nations.

In an effort to ensure that this volume provides a global perspective to ongoing discussions over indigenous knowledge in environmental history, the book is divided into four sections based on common themes. The remainder of this introduction considers some of the central debates concerning indigenous knowledge and the environment addressed by all the papers to varying degrees, from who counts as an indigenous person, and knowledge as local or global, to knowledge and power, and indigenous knowledge in environmental history. We then offer brief introductions to each of the four sections of the book, which include comparative insights drawn from the individual essays.

### Who Is an Indigenous Person?

The term “indigenous” has evolved without much consideration of what it means.<sup>6</sup> As in biological description, it implies a timeless connection to the land, even though biologists prefer the term “endemic” over “indigenous.” Yet if notions of endemism and indigeneity are controversial in

biological discourse, they are even more fraught in human history.<sup>7</sup> Societies and polities across Africa and North America have grown from waves of conquerors and settlers, with the arrival of Europeans and Asians in Africa and Europeans and Africans in the Americas over the last several centuries only the last of many, preceded and accompanied on each continent by expansions of people indigenous to the continent although foreign to territories into which they moved. Each new wave of immigration, each new conquest or settlement, produced notions of indigeneity that became more complicated through time.<sup>8</sup>

On the surface, these complications seem avoidable. Does *indigenous* not mean native to or born in a particular place, prior to the arrival of others whose ancestral native lands rest elsewhere (and whose indigeneity, therefore, resides in another place)?<sup>9</sup> Would definition and practice be so straightforward. In its use, the word *indigenous* (or *indigeneity*) reveals, as Roy Ellen and Holly Harris have suggested, a minefield.<sup>10</sup> First, *indigenous* is just one of a range of alternatives for what is at or near its heart—native to or born in—including native, autochthonous, and aboriginal. Each of these concepts and labels has specific derivation and precise if overlapping meanings. Furthermore, when it comes to a modifier for the knowledge of people who assert or are granted indigeneity, other terms rise as alternatives, including “tribal,” “local,” “traditional,” and “folk.”<sup>11</sup> None are ideal; indeed, all have strikes against them.<sup>12</sup> We write conscious of these debates and of the realization that for many, including people themselves to whom it is applied, “indigenous” is preferred over other alternatives—and that the term is not going to go away.

That “indigenous” is not simply going to vanish is surely due in large measure to the recent history of indigenous peoples in the political programs of the United Nations, the World Bank, nongovernmental organizations, and certain nation-states. Applying “indigenous” to a particular people arguably has as much to do with political relationships as with any inherent characteristics shared with other so-called indigenous peoples. It often depends on what the state defines as indigenous. African states vigorously contest the idea that any one ethnic group is more indigenous than another. In Africa, groups began to proclaim their indigenous status only after building alliances with an international community of indigenous peoples.<sup>13</sup> In the Russian Federation, the state recognizes as indigenous only one-third of arguably indigenous people—the groups with populations under fifty thousand.<sup>14</sup> In the United States, federal recognition of tribal status is critical to the formally sanctioned definition of indigeneity. Being indigenous thus depends on what the nation-state or the

international community grants to those with that status. Indigeneity can also be an expression of opposition to the dominant political authority; a relational or structural claim of exploitation and domination rather than an essentialist claim of origins.<sup>15</sup> Globally, “indigenous” has a certain moral charge, a valiant effort to counter the hegemony of outsiders.<sup>16</sup> In this volume, such morality and political instrumentalities are everywhere evident.

Some newcomers—immigrants, colonizers, and settlers—also proclaim indigeneity, however. This is especially true in southern Africa, and several such cases are highlighted in this volume. Lance van Sittert, for instance, demonstrates how a folk system of water divining became a form of indigenous knowledge in early twentieth-century South Africa. David M. Gordon illustrates how Bemba proclamations of indigeneity in the south-central African highlands followed their conquest of the autochthonous Bisa. Sometimes political proclamations attempt to transcend the divide between colonizers and colonized and help in the construction of new nations. For example, in postapartheid South Africa, as Karen Flint points out, indigeneity is asserted as a national asset that can be improved by subjecting African traditional medicines to Western scientific methods and state bureaucracy.<sup>17</sup>

Similar processes unfold elsewhere: in western Japan the inheritors of the preagrarian Jomon period have had greater success in asserting and being seen as indigenous than the arguably autochthonous Ainu.<sup>18</sup> In the North American cases examined in this volume, the line between indigenous and nonindigenous seems more sharply drawn, perhaps because these particular cases focus on environmental knowledge and not, for example, on who gains (or loses, or is denied) formal affiliation with a particular Indian group—a process that would expose the contradictions inherent in “indigenous.” These contradictions involve indigenous people attempting to hold the line on whether or not other people claiming indigeneity should gain it, especially where the stakes are high (as with casino revenues).

Despite the instrumental, moral, and ideological qualities of indigeneity, some still insist on viewing it in biological terms. Early twentieth-century racial theories remain inscribed in theories of indigenous belonging. This biological—or “blood”—understanding of indigeneity emerges from legal formulations that insist on proof of belonging. Blood seems to offer such convincing proof. In addition, outside of institutional, state, and legal arrangements, blood kinship models still inspire models of wider corporate group membership. For these reasons, even while this volume—along with a range of scholarship—emphasizes the

historical model of the indigenous belonging, the biological blood model of indigenous belonging prevails in quotidian, and even some academic understandings. The notion of “indigenous people” may even “provide ideological ammunition to those who would reorder the world according to blood and soil,” as André Béteille points out.<sup>19</sup> Yet, as analyses in this volume and elsewhere make clear, lurking beneath the surface of blood is always power: power, exercised by the state or by the people of indigenous status themselves, to determine that indigeneity depends on descent from an ancestor on a particular historical list; on descent from a man but not a woman or a woman but not a man; on descent from a person free but not from one enslaved; on comportment; on culture—the vexed tradition; on membership in a group of a certain size; or on myriad other historical and cultural factors.

In its emphasis on an unchanging body of knowledge and in its opposition to modernity, indigenous knowledges share a conceptual relationship with “tradition.” Like “tradition,” “indigenous” implies something ancient, even primordial. In their influential work *The Invention of Tradition*, Eric Hobsbawm and Terence Ranger argue that while tradition disguises itself as unchanging, it is dynamic and invented according to political and ideological exigencies.<sup>20</sup> In their view, tradition is often conservative, involving cultural artifacts that legitimize established elites—thus the need for historians to lay bare its invention. Tradition is also typically modern in its nostalgia for a lost past. The idea of indigenous knowledge has comparable qualities (indeed, indigenous knowledge is often referred to as “traditional environmental knowledge,” or TEK). Indigenous knowledges conceal their dynamism under the appearance of a timeless body of knowledge. They share a nostalgia for a culturally particular form of knowledge and an imagined past, which makes them an adept tool to resist ostensibly scientific and universal discourses. (Unlike “traditions,” however, indigenous knowledges are often thought to be a tool of the disempowered and dispossessed, rather than of the elite.) Indigenous knowledges invoke their conceptual power by claims of timelessness, even while their ability to respond to contemporary articulations of power demands flexibility. Like tradition, indigenous knowledges have hidden and often repressed histories.

Over time, cultural (including indigenous) knowledge is unevenly produced, unevenly shared, and unevenly distributed. And society is rarely, if ever, insular, tightly bounded, and exclusionary. It rarely remains homogeneous in its membership and composition. What this means is obvious: No assumption should be made that indigenous knowledges are closed to

external influence or history, that they do not incorporate or reflect originally nonindigenous conception or perception, or that what one or several people might think or perceive is held universally in that society.

### Local and Global Knowledges

The concept of indigenous knowledge applies in the first instance to particular sets of environmental resources that sustained particular peoples. For this reason, we prefer “indigenous knowledges” over “indigenous knowledge.” Ongoing pressures—now, global—to standardize such systems of knowledge, during colonialism and currently as part of a worldwide indigenous peoples’ rights movement, have attempted to reconcile the very particular forms of indigenous knowledges with universal (or Western) language and epistemologies.

Anthropologists first attempted to standardize indigenous knowledges before the label “indigenous knowledge” was fashionable in cross-cultural categories like primitive religion, animism, kinship terminology, and so on (although the analytical or “etic” source of the categories for knowledge was always recognized). Their goal was to develop an all-embracing, comparative, conceptual, and ostensibly scientific scheme. On their part, Africanist historians, joined by anthropologists, identified generic features of “oral knowledge,” often termed “oral tradition,” in an attempt to give value to the intellectual products of peoples without writing.<sup>21</sup> More recently, policy-oriented monographs that list features that characterize indigenous knowledges—many of them drawn in opposition to a universal, abstract, written, secular, and Western form of scientific knowledge—transparently view them as (paradoxically generically) local, practical, oral, communal, and spiritual.<sup>22</sup> Rather than providing a definition of indigenous knowledge, which tends to move us further away from the particular natures of indigenous knowledges, the authors in this volume historicize indigenous knowledges and locate their analyses in the contexts that shaped them.

The particular character of indigenous knowledges alongside the vagueness of the notion of indigeneity have led some scholars to call for the replacement of the notion of indigenous knowledge with “local” or “practical” knowledge.<sup>23</sup> The local features of indigenous knowledges are, however, Janus-faced, since indigenous knowledges rely on globalization and cosmopolitanism. The more we learn of the indigenous knowledges of others, the more our own indigenous knowledges are enriched. The discovery of the indigenous knowledge of others led early modern Europeans to appreciate their own indigenous knowledges.<sup>24</sup> Indigenous knowledges

were hybrids, the product of many global exchanges. Moreover, the indigenous knowledges of people from one continent could become colonial knowledges on another, as in the case of the risicultural knowledge of enslaved West Africans that informed cultivation practices on South Carolina's and Georgia's lowland rice plantations.<sup>25</sup> In this volume James L. A. Webb, Jr., David Bernstein, and Shepard Krech demonstrate how indigenous knowledges were diffused and appropriated, making the knowledge of others into our knowledge. The local character of indigenous knowledges conceals their cosmopolitan sources and inspirations.

The practical nature of indigenous knowledges is also bedeviled with inconsistencies. James Scott has been the leading proponent of a situated "practical" or commonsense knowledge that he terms "mētis," in opposition to the high modernism of scientific discourse.<sup>26</sup> But identifying indigenous knowledges as practical in the way that "practical" is understood in the West is fallacious. Practical formulations are based within broader cosmologies that gauge their practicality. Surely, Scott is not suggesting that indigenous societies remain—and have always been—focused on fulfilling basic subsistence needs. Isn't knowledge "practical" for religious ends, for example? Scott claims that what matters in floral and faunal classification for indigenous peoples is their "local use and value. . . . The litmus test for mētis is practical success."<sup>27</sup> But what does "practical success" mean? The practical success of indigenous forms of classification was linked to broader theories of the world, sometimes to religious cosmologies, as Krech demonstrates for birds in Native American forms of classification, or Parker Shipton does for snakes and serpents in Africa and the Americas (this volume). If such a definition of practicality is set in the context of particular worldviews and abstractions, it is no more practical than scientific taxonomy.

### Knowledge and Power

That knowledge is entwined with power is frequently discussed with reference to Western scientific discourses. Yet indigenous knowledges also have constituted modalities of power. As Bernstein points out in this volume, indigenous knowledges have rarely been scrutinized and deconstructed to reveal their architectures of power—and when taken apart they are sometimes found to embed (and reflect back) the nonindigenous.

In this volume, indigenous knowledges are viewed as both an intervention in power relations and a product of power relations. Revealing the power relationships in which indigenous knowledges are entwined

does not necessarily disparage the political utility of indigenous knowledges. Indigenous knowledge-based claims are often oppositional to those in authority and made by those marginalized through the historical and contemporary operations of power in order to leverage their otherwise weak claims to resources. Conversely, however, such claims and their associated traditions can also be appropriated by those in power as a way of authenticating and legitimating themselves in the eyes of the conquered. In Africa, Indirect Rule during colonialism mobilized aspects of indigenous knowledge rather than marginalizing it, as assumed in the conventional academic wisdom.<sup>28</sup> As Derick Fay illustrates for South Africa (this volume), apartheid-era communal tenure arrangements claimed a relationship to indigenous forms of tenure. Indigenous knowledges in this case constituted colonial forms of authority. By contrast, the overtly aggressive and at times genocidal modernism of Euro-American policies toward Native Americans posed a more direct attack on tradition, making tradition itself a more convincing mode of resistance.

Those concerned with the politics of indigenous peoples today should take note of the operations of power in which indigenous knowledges are embedded. Over the last two decades, mechanisms of international intervention by the developed world have increasingly insisted on grassroots approaches to development, which co-opt local players, often representatives of indigenous people, and employ their indigenous knowledges. Conservation biologists have called on indigenous knowledges as a means to propose or mobilize local conservation interventions.<sup>29</sup> Identifying useful and appropriate forms of indigenous knowledge has become a rallying cry for the continued relevance of anthropology in the postcolonial age. Beginning in the 1990s, NGOs and government agencies concerned with economic development and environmental conservation began to publish monographs on indigenous knowledge.<sup>30</sup>

In the minds of well-meaning ecologists, the model of biological conservation became confused with a model of the cultural survival of indigenous peoples, as if they and their knowledge were connected ecological entities, a species threatened with extinction through the eradication of their habitat. Many conservationists then take the imaginative step of linking the degradation of the natural environment and the extinction of biological species to the supposed extinction of indigenous peoples. Such biological-cum-anthropological descriptions resemble anthropology at its early twentieth-century functionalist inception.<sup>31</sup> Ecological and anthropological interdisciplinarity has become a muddle of academic concepts and political agendas.

More insidious than this interdisciplinary muddle, however, is the architecture of power in which such appropriations of indigenous knowledge become entwined. Environmental and development projects that claim to “see like a local” may seem to be an improvement on self-confident, top-down, modernist projects that “see like a state,” as Scott puts it.<sup>32</sup> And yet they represent similar dynamics that expose local players to powerful international networks, molding the shape of civil society and the state to international interests and agendas, even when concern for the marginalized through an appreciation of things indigenous is proclaimed. Anthropologists now accompany development economists and agrarian scientists.<sup>33</sup> For years they have been recruited to the ranks of the World Bank to propose and develop programs with aims that include the alleviation of poverty. But what is the real difference in terms of environmental, economic, and political outcomes? Sometimes none at all.<sup>34</sup> In general, strategies of poverty alleviation and conservation inspired by indigenous knowledges are more neoliberal than previous state-oriented strategies. Local economies are exposed to global markets in commodities, international ecotourism and cultural tourism established, and freehold rights in property encouraged. The impact on poverty alleviation has been uneven at best. One undeniable effect is that through greater exposure to market forces, the indigenous becomes commodified and ethnicities incorporated, as Jean and John Comaroff have recently pointed out.<sup>35</sup> In a self-referencing and reinforcing process, the neoliberal order proliferates indigenous knowledges.

Rather than rallying scholars to an appreciation of indigenous knowledges, as so much published scholarship has done, the essays in this book reveal the intricate and intimate ties between knowledge and power. Unlike countless development texts in the recent past, this book calls not to mobilize usable indigenous knowledges but to understand the conditions under which indigenous knowledges came to be identified as a usable category of knowledge that constructed and intervened in a spectrum of power relations.

## The Environment

Indigenous knowledge has become a core concept in the environmental history of Africa and the Americas, even as its meaning has become more contested and less clear. In Africanist historiography, the most productive tradition of scholarship on environmental history considers the imposition of European forms of environmental control through forestry science,

game management, soil conservation strategies, and hunting and fishing regulations. European environmental management techniques sought to intervene in a self-constructed reality, which environmental historians of Africa refer to as “degradation narratives.”<sup>36</sup> Such degradation narratives blamed the alleged disappearance of wilderness, reduction in biodiversity, and depletion of natural resources on African “overexploitation” and “overpopulation.” These degradation narratives understated European and colonial agency in environmental change, focusing instead on Malthusian crises inspired by Africans themselves. The major environmental narrative in North America was equally declensionist but in a different fashion: the intrusion of specifically European demands, values, economies, commodification, efficiencies, technologies, power, and insatiable desires set the continent on a course of destruction that veered sharply from a putatively Edenic pre-European arrival state.

Thus, on one continent, the agents of declension initially were seen as indigenous, and on the other, they were understood as exogenous. Yet on both continents the declensionist narratives would ultimately invoke Western science and resource management techniques to counteract environmental change. As many historians point out, such interventions became vehicles for more intrusive forms of colonial or state intervention.<sup>37</sup> In turn, scholars and activists in both Africa and North America would ultimately view indigenous knowledges as forms of resistance to these statist impositions. Nevertheless, scholars assumed that African and Native American indigenous knowledges had different relationships to the environment, in part due to the differing perceptions of environmental change. In North America, where dominant ideas held that Europeans were responsible for environmental degradation, scholars and activists posed Native American indigenous knowledges as ecologically innocent alternatives to European-inspired capitalist transformations. On the other hand, Africanist scholarship, which emphasized African agency in environmental change, focused on African efforts to harness and transform the environment. The differences in emphasis are subtle, not stark. Yet the seminal works of African and North American environmental history, such as William Cronon’s *Changes in the Land*, in the North American case, and Robert Harms’s *Games Against Nature*, in the African case, illuminate these different approaches.<sup>38</sup> Contributions to this volume also illustrate this historiographic divide.

Recent Africanist and Native Americanist scholarship attempts to move beyond the paradigm of ecological harmony versus ecological destruction by analyzing indigenous knowledges as “changing intellectual

tools and knowledge about . . . the environment,” as Tamara Giles-Vernick puts it.<sup>39</sup> Those who have taken the challenging and sometimes perilous step in taking seriously the local historical processes that shaped and were shaped by indigenous environmental knowledges have arrived at conclusions that strike some as revisionist and others as disturbing. For example, in North America, Krech’s analysis in *The Ecological Indian*—which problematized and historicized the relationship between Indians and natural resources, and concluded that despite evidence being ample for ecological thought, it is scant until recent times for Western-style conservation—produced both robust debate but strong endorsement as “consistent with major reviews of the conservation literature in the ethnographic world.”<sup>40</sup> And in the central African context, Giles-Vernick points out that although “some environmental practices . . . do make ecological sense, all of these practices are a porous changing body of knowledge that cannot be uncritically embraced as a fail-safe solution guaranteeing the success of environmental interventions.”<sup>41</sup>

The implication is that indigenous knowledges encouraged the exploitation of environmental resources in some cases and were harnessed toward conservation strategies in others. For example, in the case of central African fisheries management, Gordon demonstrates that indigenous knowledges had deleterious ecological consequences.<sup>42</sup> By contrast, in a contribution to the conference upon which this volume was drawn, Michael Sheridan points to the possibilities of sacred groves, generally graveyards of important ancestors, as potential sites for conservation, since they have been free from agriculture, hunting, or the collection of wood fuel.<sup>43</sup> Even in single cases, as Joshua Reid illustrates for Makah marine tenure in this volume, indigenous knowledges developed elements of conservation while at the same time justifying local resource exploitation.

The remainder of this introduction highlights the contributions and the comparative insights of the essays found in each of the four sections of the book: Middle Ground, Conflict, Environmental Religion, and Resource Rights.

## Part One: Middle Ground

Recent scholarship has pointed to the colonial origins of many scientific disciplines such as botany, geography, ecology, and zoology—in which collaborations between Europeans and native Africans and Americans, often in the form of informants and hired research associates, figured significantly. So also did a concern for environmental deterioration as well as

for conservation arise in the context of the colonial enterprise, as Richard Grove has written. In similar fashion, indigenous knowledges were hybrid forms of knowledge concerned with environmental change. Like many natural sciences, they also emerged through exchanges made possible in what Mary Louise Pratt termed the “contact zones” and Richard White the “middle ground” of the colonial encounter.<sup>44</sup> In colonial Africa and North America, indigenous knowledges changed, adopted new forms, and appropriated other types of knowledge. They incorporated new ideas and adapted to explain and act on environmental changes.

While a number of papers in this book point to these qualities of indigenous knowledges, the papers in this section highlight the permeability of boundaries between indigenous and nonindigenous knowledges such that in time, the provenance of specific ideas becomes difficult to trace. European conquest and colonialism brought together people with distinct ideas of the world and different technical expertise to create new forms of knowledge. Even if the landscapes of power were highly uneven, exchanges between colonized and colonizers produced knowledge. These exchanges occurred not only at the level of culture and expertise, but also at the biological and ecological levels, which in turn inspired quests for knowledge.<sup>45</sup> People sought out ways to deal with new diseases and ways to harness the power of newly domesticated crops and plants.<sup>46</sup>

In this section, James L. A. Webb, Jr., points to the diverse borrowings that constituted malarial therapeutics for Europeans and Native Americans. At the same time, Webb suggests why the exchange of medical knowledge between Europeans and Africans did not occur. In a setting in which people of American Indian, African, and British and other European descent interacted, Shepard Krech explores the possibility of African and European influences on the making of Native American knowledge about birds. In a third contribution in this section, David Bernstein demonstrates with Notchinga’s Map, the Iowan illustration that adapted European forms of spatial representation to the art of treaty negotiations, how the inscription and representation of knowledge changed to accommodate new struggles.

Europeans engaged in colonial pursuits also began to recognize their own indigenous knowledges.<sup>47</sup> The final essay in this section considers one case of colonial settlers’ developing an indigenous knowledge in an effort to anchor themselves to the land and position themselves in relation to scientific and modernist interventions of a colonial state, a process that occurred in both southern Africa and North America. In southern Africa, such declarations of indigeneity were particularly fraught for Dutch and French settlers who were suspicious of—and sometimes rebelled against—British

colonial interference, even while these settlers distinguished themselves from African indigenes (the resemblance to the historical experience of the European settlers of North America is striking). These settlers came to proclaim their indigeneity, calling themselves “Afrikaners,” and developing appropriate indigenous knowledges. Lance van Sittert takes up in some detail one example of this settler-created indigenous knowledge, water divining.

Taken together, these four papers demonstrate that the rise of modern European empires led not merely to the spread of European forms of knowledge. Through the settlement of new lands, encounters with native peoples and knowledges, and the spread of diseases, fauna, and flora, there emerged new forms of knowledge that were simultaneously local and global, indigenous and cosmopolitan, and subaltern and elite. These processes also produced conflict, as seen in the next set of papers.

## Part Two: Conflict

Whereas colonialism brought different people together, it also involved violent acts of domination, some of which were genocidal in intent, with concomitant acts of resistance and rebellion. The results included very uneven exchanges of knowledge. The colonial “middle ground” was indeed precarious, fomenting misunderstanding in its most benign form and a war zone in its most destructive. Yet conflict also produced new forms of knowledge among colonizers and colonized. Groups defined and redefined themselves in opposition to multiple others. Acts of domination and resistance not only drew upon existing reservoirs of local knowledge but also transformed and shaped them to the exigencies of local struggles.

In this section, the authors point out that opportunities for the appreciation of other forms of knowledge were often cut short due to colonial conflicts. In the case of medicine for the new disease of smallpox, as illustrated by Paul Kelton, the Cherokees innovated a dance but rejected vaccine due to its conflation with the Christian religion, which undermined Cherokee sovereignty. Marsha Weisiger and Jacob Tropp illustrate how scientific and colonial chauvinism inspired alternative worldviews that looked to restore past, harmonious relations with the natural world.

From a Native American perspective, the experience of colonialism was deeply felt and lengthy and involved immense consequences from population relocations, epidemiological catastrophe, violence, the extirpation of important animal resources, and environmental alterations. In Africa, by contrast, a more precarious colonial state spread in the twentieth century. Colonialism was often little more than a rudimentary state

apparatus administered by far-flung district commissioners who were supported when necessary by mobile police units. In most places, the colonial period lasted about sixty years. Even in the European settler colonies of southern Africa, from which many examples in this volume are drawn, European-imposed state and legal institutions were weaker than in North America. Besides a brief period of colonial conquest, periods of warfare and violence against Africans were shorter than the sustained periods of violence against Native Americans. Disease had some impact, but far less than in North America. In no case did settlers come close to outnumbering native Africans, and their ability to monopolize violence and ensure continued colonial hegemony remained precarious.

In both cases, however, European colonialism radically disrupted old ways of being. Colonial politics bent preexisting forms of knowledge toward particular and strategic ends. Treaty negotiations between Native Americans and European Americans changed the focus of knowledge from kin and lineage to tribe. Indirect Rule in Africa inspired the codification of indigenous knowledges and generally strengthened the notion that indigenous knowledges belonged to tribes controlled by powerful men termed “chiefs.”<sup>48</sup> The reorganization of power and transformation of livelihoods, disrupting old historical patterns, inspired new understandings of the world. This occurred at the same time as Christian missionary evangelism, which explained the world according to a new set of supernatural forces.

Even given its Christian influences, European colonialism claimed to be the harbinger of a progressive secularism rooted in a scientific understanding of the world (even though many would argue it did not live up to these claims). In contrast, indigenous knowledges justified and legitimized themselves as alternate ways of understanding the world. They questioned the modernist scientific thrust of human interventions in the natural world characteristic of colonial thought and practice. Weisiger, for example, demonstrates how Navajo concepts of order and disorder engaged with New Deal scientific regulations.<sup>49</sup> The mobilization of tradition was also evident in parts of Africa most affected by European settlers. In the Eastern Cape, an area that witnessed similar frontier violence to North America, Tropp describes African resistance to colonial environmental intrusions through ostensibly traditional practices that joined bodily health to environmental health. Africans and Native Americans developed indigenous knowledges to preserve access to resources and to defend cultural and religious identities when faced with colonial violence.

### Part Three: Environmental Religion

Western assumptions have it that scientific thought was freed from its religious (often imagined to be “closed”) moorings during the Enlightenment; in contrast, non-Western thought is still imagined to be mired in such religious understanding of the world. Such representations of the West’s “other” pervade writings on the Middle East—and have been criticized there.<sup>50</sup> Globally modern forms of representation, such as museums, tend to construct differences between a scientific modernity and closed traditional indigenous knowledges.<sup>51</sup> They often elide that the secular has its own dogmas (often based in Christian belief) and power relations.<sup>52</sup> The flip side of this “Orientalist” discourse is an “Occidentalism,” a criticism of Western science and rationalism and a celebration of its religious or spiritual “other.”<sup>53</sup>

Such Occidentalist critiques of Western science have become a standard feature of indigenous knowledges. In the Native American context, activists and even scholars are prone to defend a sort of cultural difference between Western science and native religion. The reasons for the saliency of this romantic opposition in the Native American case probably lies in the experience of traumatic episodes of conquest and colonialism, which have left little option for a corporate sovereignty except through claims of an absolute cultural difference expressed in religious idioms. In North America, the position of the Native American in the American imagination further contributed to an emphasis on environmental religion. It also coincided with activist agendas. Some Western scientists and conservationists seem to be born-again into this spiritual way of appreciating and understanding the natural environment.<sup>54</sup>

The nature of environmental religion proved to be a controversial discussion among contributors to this volume, with lines often (but not exclusively) drawn between scholars of Africa and of Native America. This section on environmental religions represents some of these multiple perspectives. Andrew Fisher argues that Washat ideas of a spiritual figure, a “Creator” of people and nature, was a guiding principle in their negotiations over environmental regulations (similar to the argument presented by Weisiger in part 2 of this volume that Navajo metaphysical concepts contrasted with the scientific worldview of the New Dealers). In parallel fashion, David M. Gordon points to the spiritual dimensions of indigeneity in central Africa and Parker Shipton to prophetic movements in East Africa and Native America. In contrast to the claim of a consistent environmental religion, however, Gordon emphasizes that central African

environmental religion reflected local political struggles over agricultural prosperity and human fertility. During European colonialism, administrators and anthropologists codified hegemonic claims by certain clan elites who had become colonial chiefs, making past conflicts appear to be timeless traditions. Shipton points out that many indigenous religious ideas were innovations in the face of colonial trauma and Christian dogma. Prophetic movements oriented around totemic animals emerged from a “shaken sense of position in the world.” As with many other issues examined in this volume, historical and strategic interpretations contrast with cultural interpretations.

#### Part Four: Resource Rights

Debates over indigenous knowledge ramify into the present because they continue to provide ways of making claims to environmental resources. In the final section of the book, the implications of indigenous knowledge for recent and present-day resource claims are considered in three important arenas: Joshua Reid considers rights over marine resources; Karen Flint over medicinal plant products; and Derick Fay over land. Each of these resources presents distinctive challenges for those who wish to claim rights by employing indigenous knowledge. But several issues weigh heavily on all of these cases: claims for scientific conservation measures (or standardized testing in the case of medicine); the relative power of the individual, the lineage, ethnicity, and nation; and the general imperatives of a neoliberal modernity in which private property rights trump communal rights.

Part of the problem is that indigenous knowledges only rarely conform to modern legal arrangements that stress precedent, consistency, and individual or corporate patents and rights in resources. The dynamism and hybridity of indigenous knowledge makes it difficult to attribute legal ownership over indigenous knowledge and resources. To whom would such resources and knowledge belong? The tribe, lineage, family, or individual? Indeed, indigenous knowledges may emerge out of conflict within the group, rather than between the group and outsiders. In controversies over authorship, the language of communal knowledge confronts that of individual or subgroup agency, the consensus of the group versus conflict within the group, the right of individuals versus that of their communities. The challenge becomes even more vexing with the appreciation that the names and the boundaries of tribal groupings have also been dynamic—and were artificially fixed largely during the colonial encounter. Unlike modern corporations, it is often difficult to determine their membership.

In this section, Flint points to the ongoing contestation over who benefits from the bioprospecting of indigenous remedies, with pharmaceutical companies and national and even international states engaging with the most devastated and marginalized of South African indigenous communities, the San. Given that indigenous knowledges confound corporate unity and mire any intellectual rights in controversy, the ability of these communities to gain effectively from their ancient remedies by employing indigenous knowledge claims seems slight. Indigenous knowledge claims may be a weak substitute for other development agendas.<sup>55</sup>

These issues are not only limited to intellectual knowledge, but are manifest in land rights directly. In postcolonial contexts, indigenous knowledges continue to be deployed in the contestation of older claims to resources by those dispossessed during colonialism. Sometimes this process can be counterintuitive, especially when colonialism buttressed the power of certain traditional leaders. For example, Fay demonstrates how traditional leaders in South Africa had to redefine claims to communal land in postapartheid South Africa, as individuals dispossessed of their land in favor of chiefs during apartheid have sought legal redress by appealing to their private property rights.

By contrast, in the Native American cases in this volume, such inner-group contestations seem less evident and the unity of the corporate groups taken for granted—although there are exceptions, such as Reid’s contribution to this section, which demonstrates contestation between individual, lineage, and tribe over fishing and whaling rights.<sup>56</sup> Here, cutting across inner-group contestations is the challenge of national and international fishing regulations that claim that the sustenance of fish stocks should be regulated by scientific principles for universal benefit instead of indigenous knowledge traditions for local communal benefit.

All of these cases demonstrate that indigenous knowledges provide marginalized communities with alternative ways of claiming rights in resources. Thereby, such communities resist the onset of neoliberal modernity, even as their indigenous knowledges become entwined in the neoliberal power relations. There is much in this paradoxical relationship to power that resembles mobilizations of indigenous knowledges during the colonial period.

## Conclusions

This volume problematizes historical narratives of timeless, insular, and ecologically harmonious indigenous knowledges and practices that always

challenged the imposition of environmentally deleterious colonial and scientific knowledges. The history of indigenous knowledge appears to contrast with that of scientific knowledges. If we accept, however, the multifaceted and global histories of indigenous knowledges in a fashion similar to the histories of scientific discourses, the oppositional relationship between indigenous knowledges and Western science no longer seems as clear. Nonetheless, the hybrid nature of knowledge, scientific and indigenous, remains disguised, inadvertently or deliberately, in either case with a resultant increase in its political salience. Modern indigenous and scientific knowledges were located in a contested landscape of environmental struggle and change during early modern colonialism and in its aftermath. Their identification as indigenous (or scientific) was essential to the engagement of knowledge with power in diverse encounters between peoples and environments.

The environmental historian remains with the many predicaments of indigenous knowledges. Because indigenous knowledges mean so much to so many, they escape definition. They represent unique challenges and opportunities for the scholar. Rather than ignoring indigenous knowledges, claiming that they do not exist, or replacing them with arguably less-contested labels, more neutral or historically “accurate,” contributors to this volume explore the conceptual slipperiness and political manipulations of indigenous knowledges, illuminating the many similar struggles against marginalization undertaken by modernity’s others.

## Notes

1. Michael R. Dove, “The Life-Cycle of Indigenous Knowledge, and the Case of Natural Rubber Production,” in *Indigenous Environmental Knowledge and Its Transformations: Critical Anthropological Perspectives*, ed. Roy Ellen, Peter Parkes, and Alan Bicker (Amsterdam: Harwood Academic Publishers, 2000), 241.

2. Arun Agrawal, “Dismantling the Divide Between Indigenous and Scientific Knowledge,” *Development and Change* 26 (1995): 413–39. For a thoughtful case study of these issues, see Paul Nadasdy, *Hunters and Bureaucrats: Power, Knowledge, and Aboriginal-State Relations in the Southwest Yukon* (Vancouver: University of British Columbia Press, 2003).

3. Ellen, Parkes, and Bicker, *Indigenous Environmental Knowledge*; Michael R. Dove, “Indigenous People and Environmental Politics,” *Annual Review of Anthropology* 35 (2006): 191–208; Paul Sillitoe, ed., *Local Science vs Global Science: Approaches to Indigenous Knowledge in International Development* (New York: Berghahn Books, 2007).

4. Earlier comparative efforts include William Beinart and Peter Coates, *Environment and History: The Taming of Nature in the USA and South Africa* (London: Routledge, 1995); Howard Lamar and Leonard Thompson, *The Frontier in History: North America and Southern Africa Compared* (New Haven, CT: Yale University Press, 1981).

5. See, for example, Glauco Sanga and Gherardo Ortalli, eds., *Nature Knowledge: Ethnoscience, Cognition, and Utility* (New York: Berghahn Books, 2004); Sillitoe, *Local Science vs Global Science*; Ellen, Parkes, and Bicker, *Indigenous Environmental Knowledge*. See also Dorothy L. Hodgson, "Introduction: Comparative Perspectives on the Indigenous Rights Movement in Africa and the Americas," *American Anthropologist* 104 (2002): 1037–49.

6. For a brief exception, see Andrys Onsman, *Defining Indigeneity in the Twenty-First Century: A Case Study of the Free Frisians* (Lewiston, NY: Mellen Press, 2004).

7. For an example of such controversies in biology, see the long-running debate over the "invasive" periwinkle, *Littorina littorea*, most recently in C. W. Cunningham, "How to Use Genetic Data to Distinguish Between Natural and Human-Mediated Introduction of *Littorina littorea* to North America," *Biological Invasions* 10, no. 1 (2008): 1–6.

8. See, for example, in central Africa, the development of notions of original inhabitants and newcomers in relationships between Bantu and Batwa in Kairn A. Klieman, "*The Pygmies Were Our Compass*": *Bantu and Batwa in the History of West Central Africa, Early Times to c. 1900 C.E.* (Portsmouth, NH: Heinemann, 2003).

9. *Oxford English Dictionary Online*, s.v. "indigeneity," "indigenous." Accessed October 4, 2011.

10. Roy Ellen and Holly Harris, introduction to *Indigenous Environmental Knowledge*, ed. Ellen, Parkes, and Bicker, 3.

11. *Ibid.*

12. *Ibid.*; see also Agrawal, "Dismantling the Divide"; and Dove, "Indigenous People and Environmental Politics."

13. Dorothy L. Hodgson, "Becoming Indigenous in Africa," *African Studies Review* 52, no. 3 (2009): 1–32. An instructive example is South African Coloured campaigns for indigenous status, manifest especially in the struggle to repatriate Sara Baartman's remains, in Clifton Crais and Pamela Scully, *Sara Baartman and the Hottentot Venus* (Princeton, NJ: Princeton University Press, 2009), 156–57.

14. Adam Kuper, "The Return of the Native," *Current Anthropology* 44 (2003): 389–402; Francesca Merlan, "Indigeneity: Global and Local," *Current Anthropology* 50 (2009): 303–33; Brian Donahoe et al., "Size and Place in the

Construction of Indigeneity in the Russian Federation,” *Current Anthropology* 49 (2008): 993–1020.

15. Hodgson, “Becoming Indigenous,” 8.

16. André Béteille, “The Idea of Indigenous People,” *Current Anthropology* 39, no. 2 (1998): 187–91, esp. 190, 191.

17. In this volume, and in her book, Karen E. Flint, *Healing Traditions: African Medicine, Cultural Exchange, and Competition in South Africa, 1820–1948* (Athens: Ohio University Press, 2008).

18. John Knight, “‘Indigenous Regionalism in Japan,’” in *Indigenous Environmental Knowledge*, ed. Ellen, Parkes, and Bicker, 167.

19. Béteille, “The Idea of Indigenous People,” 191.

20. Eric J. Hobsbawm and Terence O. Ranger, eds., *The Invention of Tradition* (Cambridge: Cambridge University Press, 1983).

21. The seminal work is by Jan Vansina, published most recently as *Oral Tradition as History* (Madison: University of Wisconsin Press, 1985), an elaboration of his first book, *De la Tradition Oral: Essai de Methode Historique* (Tervuren: Annales du Musée Royal de l’Afrique Central, 1961). A starting point for the extensive comparative anthropology of orality was Jack R. Goody, *The Domestication of the Savage Mind* (Cambridge: Cambridge University Press, 1977).

22. For the best and most nuanced example, see the list of qualities of indigenous knowledge in Ellen and Harris, introduction to *Indigenous Environmental Knowledge*, ed. Ellen, Parkes, and Bicker, 4–5. For a discussion of these oppositions, see Agrawal, “Dismantling the Divide.”

23. Arne Kalland, “Indigenous Knowledge: Prospects and Limitations,” in *Indigenous Environmental Knowledge*, ed. Ellen, Parkes, and Bicker, 319–35.

24. Alix Cooper, *Inventing the Indigenous: Local Knowledge and Natural History in Early Modern Europe* (Cambridge: Cambridge University Press, 2007).

25. Judith A. Carney, *Black Rice: The African Origins of Rice Cultivation in the Americas* (Cambridge, MA: Harvard University Press, 2001). For debate over Carney’s argument, but acknowledgment of the influence of African rice culture, see “AHR Exchange: The Question of ‘Black Rice,’” *American Historical Review* 115, no. 1 (2010): 123–71.

26. James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, CT: Yale University Press, 1998).

27. *Ibid.*, 323.

28. For the conventional academic wisdom on the colonial marginalization of indigenous knowledges, see Ellen and Harris, introduction to *Indigenous Environmental Knowledge*, ed. Ellen, Parkes, and Bicker, 11–12.

29. A seminal article in this regard is Madhav Gadgil, Fikret Berkes, and Carl Folke, “Indigenous Knowledge for Biodiversity Conservation,” *Ambio* 22, nos.

2–3 (May 1993): 151–56. See also Kristiina A. Vogt et al., “Indigenous Knowledge Informing Management of Tropical Forests: The Link Between Rhythms in Plant Secondary Chemistry and Lunar Cycles,” *Ambio* 31 (2002): 485–90.

30. Robert E. Johannes, ed., *Traditional Ecological Knowledge: A Collection of Essays* (Gland, Switzerland: International Union for Conservation of Nature, 1989).

31. An unexceptional but widely cited and influential example is Gadgil, Berkes, and Folke, “Indigenous Knowledge.”

32. Scott, *Seeing Like a State*.

33. Paul Sillitoe, “The Development of Indigenous Knowledge: A New Applied Anthropology,” *Current Anthropology* 39, no. 2 (1998): 223–52.

34. Arun Agrawal, “Indigenous Knowledge and Power” (keynote address at “Indigenous Environments” conference, Bowdoin College, Brunswick, Maine, April 3, 2008). Also see Nadasdy, *Hunters and Bureaucrats*.

35. John L. Comaroff and Jean Comaroff, *Ethnicity, Inc.* (Chicago: University of Chicago Press, 2009).

36. For a recent example, see Diana K. Davis, *Resurrecting the Granary of Rome: Environmental History and French Colonial Expansion in North Africa* (Athens: Ohio University Press, 2007).

37. There is an extensive literature that includes Roderick P. Neumann, *Imposing Wilderness: Struggles over Livelihood and Nature Preservation in Africa* (Berkeley: University of California press, 1998); William Beinart, “Soil Erosion, Conservationism and Ideas About Development: A Southern African Exploration, 1900–1960,” *Journal of Southern African Studies* 11 (1984): 52–83.

38. William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York: Hill and Wang, 1983); Robert W. Harms, *Games Against Nature: An Eco-Cultural History of the Nunu of Equatorial Africa* (Cambridge: Cambridge University Press, 1987).

39. Tamara Giles-Vernick, *Cutting the Vines of the Past: Environmental Histories of the Central African Rain Forest* (Charlottesville: University of Virginia Press, 2002), 4.

40. Raymond Hames, “The Ecologically Noble Savage Debate,” *Annual Review of Anthropology* 36 (2007): 178; Dove, “Indigenous People and Environmental Politics,” 197; Shepard Krech III, *The Ecological Indian: Myth and History* (New York: Norton, 1999); Michael E. Harkin and David R. Lewis, eds., *Native Americans and the Environment: Perspectives on the Ecological Indian* (Lincoln: University of Nebraska Press, 2007); Shepard Krech III, “Beyond the Ecological Indian,” in *Native Americans and the Environment*, ed. Harkin and Lewis, 3–31.

41. Giles-Vernick, *Cutting the Vines of the Past*, 7.

42. David M. Gordon, *Nachituti's Gift: Economy, Society, and Environment in Central Africa* (Madison: University of Wisconsin Press, 2006), 141–69.

43. Michael J. Sheridan, “Sacred Groves in Africa: The Opposite of Witchcraft” (paper presented at “Indigenous Environments” conference, Bowdoin College, New Brunswick, Maine, April 3–5, 2008). Also see Michael J. Sheridan, “The Environmental and Social History of African Sacred Groves: A Tanzanian Case Study,” *African Studies Review* 52, no. 1 (2009): 73–98; and Michael J. Sheridan and Celia Nyamweru, *African Sacred Groves: Ecological Dynamics and Social Change* (Oxford: James Currey, 2008).

44. Mary Louise Pratt, *Imperial Eyes: Travel Writing and Transculturation* (London: Routledge, 1992); Richard White, *The Middle Ground: Indians, Empires, and Republics in the Great Lakes Region, 1650–1815* (Cambridge: Cambridge University Press, 1991). For Africanist literature on colonial origins of scientific disciplines, see, among others, Richard H. Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600–1860* (Cambridge: Cambridge University Press, 1995); Patrick Harries, *Butterflies and Barbarians: Swiss Missionaries and Systems of Knowledge in South-East Africa* (Athens: Ohio University Press, 2007); Saul Dubow, *A Commonwealth of Knowledge: Science, Sensibility, and White South Africa, 1820–2000* (New York: Oxford University Press, 2006); and many studies by Elizabeth Green Musselman, most recently, “Indigenous Knowledge and Contact Zones: The Case of the Cold Bokkeveld Meteorite, Cape Colony, 1838,” *Itinerario* 33 (2009): 31–44.

45. William H. McNeill, *Plagues and Peoples* (New York: Anchor Books, 1976); Alfred W. Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Westport, CT: Greenwood, 1972); James L. A. Webb, Jr., *Humanity's Burden: A Global History of Malaria* (New York: Cambridge University Press, 2008).

46. Concerning the example of corn in Africa, see James C. McCann, *Maize and Grace: Africa's Encounter with a New World Crop, 1500–2000* (Cambridge, MA: Harvard University Press, 2007).

47. Cooper, *Inventing the Indigenous*.

48. For the codification of custom into colonial law in Africa, see Martin Chanock, *Law, Custom and Social Order: The Colonial Experience in Malawi and Zambia* (Cambridge: Cambridge University Press, 1985). Much has been written on the rise of colonial chieftaincy, including Mahmood Mamdani, *Citizen and Subject: Contemporary Africa and the Legacy of Late Colonialism* (Princeton, NJ: Princeton University Press, 1996).

49. Marsha Weisiger's contribution to this volume is based on her book *Dreaming of Sheep in Navajo Country* (Seattle: University of Washington Press, 2009).

50. See, for example, Edward Said's criticism of Bernard Lewis in *Orientalism* (New York: Vintage Books, 1979), repeated in many other reviews and publications. More recently, see Ussama Makdisi's contributions in "AHR Conversation: Religious Identities and Violence," *American Historical Review*, 112 (2007): 1432–481.

51. See, for example, Susan Sleeper-Smith, ed., *Contesting Knowledge: Museums and Indigenous Perspectives* (Lincoln: University of Nebraska Press, 2009).

52. As illustrated by Talal Asad, *Formations of the Secular: Christianity, Islam, Modernity* (Stanford, CA: Stanford University Press, 2003).

53. For the romantic and often spiritual opposition to Western thought, see Ian Buruma and Avishai Margalit, *Occidentalism: A Short History of Anti-Westernism* (New York: Penguin, 2004).

54. See, for example, Fikret Berkes, *Sacred Ecology*, 2nd ed. (New York: Routledge, 2008), xvi–xvii. The background to this is also explored in Krech, *The Ecological Indian*.

55. As pointed out in another context in Agrawal, "Dismantling the Divide."

56. Or elsewhere on Chumash tradition: Brian D. Haley and Larry R. Wilcoxon, "Anthropology and the Making of Chumash Tradition," *Current Anthropology* 38 (1997): 761–94; and Jon M. Erlandson, "The Making of Chumash Tradition: Replies to Haley and Wilcoxon," *Current Anthropology* 39 (1998): 477–510.