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The Edges of Environmental History

Honouring Jane Carruthers

Edited by
CHRISTOF MAUCH
LIBBY ROBIN

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Christof Mauch and Libby Robin

Jane Carruthers and International Environmental History

This volume, developed through an international workshop entitled “The Edges of Environmental History,” is a tribute to the wonderful career of Jane Carruthers. It is also an exploration of South Africa’s contributions to world environmental history and the sister disciplines along its edges. A pioneer of environmental history in South Africa, Jane Carruthers is also a leader in global and transnational environmental history and a distinguished biographer. This volume explores some of the partnerships between environmental history and other intellectual endeavours, particularly those where Jane Carruthers’ work has been inspirational: animal studies, natural resource management, the history of biology, and the broader environmental humanities. These themes structure the chapters of this volume. The environmental art that infuses its design, which is explored in the second interlude, reflects another of Jane’s important scholarly passions.

Jane Carruthers has been a great influence on the discipline of environmental history in South Africa and beyond. Her African “edge” has transformed international ideas about national parks and their relations with nationalism in many different places. Her influential book, *The Kruger National Park*, was published in 1995, the year after the abolition of apartheid in South Africa. As the idea of the Rainbow Nation confronted the world, *The Kruger National Park* provided a stunning counterpoint to the American nationalism associated with dominant formulations of the national parks idea. Her approach is sensitive and forward-looking as she alerts her readers to the significance of categories such as local history and ecology, while also paying attention to potential conflicts between individual communities and national land regimes.

Environmental history came of age in the United States on the back of the national parks idea. The 1970s were a time when, as Roderick Nash described, “along with Coca Cola, Mickey Mouse, basketball and rock ‘n’ roll,” Americans could add national parks to their list of contributions to world civilization.¹ All history is social and political, but sometimes environmental history is less so. Jane’s edge in South Africa has forced the discipline to think beyond “environmentalism” or advocacy for the environment to embrace social and political history (as the subtitle of *The Kruger National*

1 Roderick Nash, “The Confusing Birth of National Parks,” *Michigan Quarterly Review* 19 (1980): 216.

Park suggests). The human face of parks and environmental justice is also part of a national parks idea for the new millennium, at a time when parks themselves have reached “Beyond the Boundaries.”² Finding ways for people and nature to live together is a big part of life in Africa and in the rest of the world as well. The stories Jane brought us from Dongola Wild Life Sanctuary and other places where people were brutally removed from their places in the service of nature—or, perhaps more accurately, in the service of wealthy foreign hunters—were salutary. Emily Wakild and Bron Taylor, in this collection, both comment on the power of the Kruger National Park story to change their perceptions of the possibilities for national parks right across the western hemisphere. Jane Carruthers has also challenged the national parks idea in places like Australia, where she has undertaken important comparative work within parks and in conservation initiatives beyond parks.³

Transnational stories are a particular hallmark of Jane’s work. Two important biographies she has written dissect the transnational lives of people and environments in the nineteenth and twentieth century. Thomas Baines, the English artist-explorer, painted both South Africa and northern Australia in the nineteenth century. James Stevenson-Hamilton, the wildlife reserve warden, had a foot in both South Africa and Scotland. Stevenson-Hamilton, an English-speaking man, appealed to rising Afrikaner nationalism in the 1920s when he suggested calling the new South African wildlife reserve Kruger National Park. Jane’s South African stories, rich with the cultural complexities of her home country, have transformed and at times unsettled environmental understandings of science, national parks, and wildlife management.

Jane is no ivory tower historian. She is an active public intellectual, at home and abroad. She has been a critical policy adviser to South African National Parks (SAN-Parks) over many years. Her newest project is a history of the science fostered within South Africa’s parks, supported by the Andrew W. Mellon Foundation. Jane’s keen analysis of contemporary problems has had a major impact on social, economic, and political debates. Specifically, the advice she has given in expert reports, presentations, scholarly articles, and books on the displacement of local people from national

2 This was the theme of the World Congress of National Parks in Durban, where Anthony Hall-Martin and Jane Carruthers’ book, *South African National Parks: A Celebration* (Johannesburg: SANParks, 2003) was launched and presented to delegates.

3 Between 1999 and 2005 Jane Carruthers won four major fellowships in Australia, and spent a total of 12 months living in Canberra and Perth, travelling all over Australia.

parks and other protected areas has raised awareness among scientists, sociologists, and activists about the human side of conservation actions. Her interdisciplinary work with scientists at the Centre for Invasion Biology at Stellenbosch University, in the Royal Society of South Africa, and in the history of science engages directly with technical policy making, infusing it with her expertise in environmental history. She is a wonderful listener as well as an exemplary speaker, always finding the right tone both for criticism and for constructive advice. She has the rare honour of being both a Member of the Academy of Science of South Africa and a Fellow of the Royal Society of South Africa. Questions about protecting wildlife in a country where the poor get very little say in conservation, and where their livelihoods and medicine depend on wild animals and common lands, are all integrated seamlessly in her histories, and in the sage advice she offers practitioners.

In the period since South Africa opened up to the rest of the world, Jane Carruthers has done so too, establishing herself as a dedicated professional and global leader in environmental history and wildlife conservation. Under the old apartheid regime, Jane shouldered a gruelling teaching load with about ten thousand history students enrolled at the University of South Africa. She was marking four thousand essays a year. The 1994 reforms brought changes to the university curriculum that saw a turn to international research goals and to more manageable class sizes. Even though the changed politics meant fewer students enrolling in history, South African history began, under Jane's leadership, to develop a sense of itself in the wider world. One of her earliest international interventions was with an important presentation at the "Ecology and Empire" conference of the Sir Robert Menzies Centre for Australian Studies at the University of London in 1996.⁴ She has nurtured many of the contacts made there in the ensuing years, including William Beinart, Saul Dubow, Tom Dunlap, Tom Griffiths, and Libby Robin, all represented in this book.

As part of her global leadership, Jane Carruthers has served on a record-breaking 18 national and international editorial boards, and was an important leading section editor in the *Palgrave Dictionary of Transnational History*⁵, not only contributing three major entries but also inviting many of the other authors, not just for Africa but for

4 Jane Carruthers, "Nationhood and National Parks: Comparative Examples from the Post-imperial Experience," in *Ecology and Empire: Environmental History of Settler Societies*, eds. Tom Griffiths and Libby Robin (Edinburgh: Keele University Press, 1997), 125–38.

5 Akira Iriye and Pierre Yves Saugnier, eds. (New York: Palgrave Macmillan, 2008).

the rest of the world. Jane Carruthers has given thought-provoking keynote speeches at important international events, for example in 2013 in Villa de Leyva, Colombia, at the Conference of the Sociedad Latinoamericana y Caribeña de Historia Ambiental (SOLCHA), in the presence of politicians, conservationists, and hundreds of scholars from multiple continents. She also gave a speech at the official opening of the Rachel Carson Center (RCC) in Munich in 2010, where she was one of three prominent keynote speakers, the other two being Alternative Nobel Laureate Vandana Shiva from India and the World Wide Fund for Nature (WWF) President, and former President of the International Union for the Conservation of Nature (IUCN) and former Minister of the Environment in Ecuador, Yolanda Kakabadse.

It is thus not surprising that Jane Carruthers finds herself the inaugural president of the International Consortium for Environmental History Organizations (ICEHO). Her career as a global and comparative environmental historian has made her a wonderful choice for this new organisation born out of the first World Congress of Environmental History in Copenhagen in 2009, and now celebrating its second World Congress in Guimarães, Portugal in July 2014. At a time when we are facing some of the most pressing global environmental, social, and political challenges in human history, including the exploitation and conservation of resources, issues of environmental justice, and the effects of climate and geography on society and politics, Jane Carruthers' steady hand on the leadership tiller of a fledgling global organization for environmental history has been very important. She effortlessly bridges the gap between an academic elite and the broader public with which we environmental historians all aspire to connect.

Jane Carruthers

Environmental History with an African Edge

Naming the workshop on which this volume is based “The Edges of Environmental History” was an inspired move by Libby Robin. “Edge” is a word that can be used in many contexts, has a wide variety of meanings as both noun and verb, and suggests opportunities and adventures. In addition, edges can serve as an enabling metaphor for environmental history as a discipline, as well as for its growth points, interstices, and adventures. Thinking in this way is appropriate, relevant—and fun.

Two people I admire have been edgy: their voices had urgent edges, they edged thinking in new directions, and they gave an edge to the way in which we conceptualise our world. One was Greg Denning, whom I met through Tom Griffiths at a graduate student workshop entitled “Challenges to Perform” at the Centre for Cross-Cultural Studies at the Australian National University in Canberra in 2000—a truly memorable occasion. Greg was a remarkable man, whose quotation about “othering” strangers appeared in huge lettering on a banner above the South African National Gallery in Cape Town in 1996 during Pippa Skotnes’s exhibition “Miscast.” Greg’s life-defining moment came when he realised that he wanted to write the history of “the other side of the beach.”¹ Like Henry David Thoreau, Greg had long been interested in islands—particularly Oceania in his case—but far from regarding islands as self-contained small continents, Greg wanted to conceptualise what had happened, and indeed what continued to happen, on the beaches—the point at which islands met the incoming and outgoing ocean and what, and who, it brought with it. In his book *Beach Crossings: Voyaging across Times, Cultures and Self*, he explains how he came to appreciate that “beaches are limen, thresholds to some other place, some other time, some other condition. Writing a beach will always be a reflection on that edginess, a reflection of that edginess.”² There is in fact, Greg Denning realised, no “other side of the beach . . . each side can only tell its own story by also telling the other’s,”³ a comment relevant also to terrestrial frontiers. The edge, whether cultural, political, ideological, geographical, or natural, is not a hard line but is permeable and, indeed, sometimes illusory.

1 Greg Denning, *Beach Crossings: Voyaging across Times, Cultures and Self* (Melbourne: The Meigunyah Press, 2004), 12.

2 *Ibid.*, 31.

3 *Ibid.*, 13.

The other person I greatly admire—a biologist rather than a historian—who investigated edges but who also created them and flourished in them was, of course, Rachel Carson. I am privileged to have been invited by the directors, Christof Mauch and Helmuth Trischler, to chair the academic advisory board of the centre named after Rachel Carson here in Munich, a relationship that has been a highlight of my academic career and the centre an international scholarly development that has breathed life and excitement into the edges between environment and society. I cannot thank them (and the centre) enough for according me the very great honour of hosting and sponsoring the workshop.

Carson's 1955 book, the second in her marine trilogy, was entitled *The Edge of the Sea*. This liminal and ever-changing space, she maintained, was "a strange and beautiful place . . . always the edge of the sea remains an elusive and indefinable boundary."⁴ Carson wrote this work on the cusp of the environmental revolution which she herself did so much to create.

Environmentalism of the kind that Carson stimulated had little effect in South Africa until the 1970s. Then, in 1974, the Council for Scientific and Industrial Research in Pretoria took the opportunity afforded by the international Scientific Committee on Problems of the Environment (SCOPE, founded in 1969) to initiate what it called the Cooperative Scientific Programmes. This was a series of ecological and environmental investigations that galvanised scientists in many biological fields to analyse and research issues caused by, or that impact on, humans and the environment. It also interested members of the public, including my husband, Vincent, and me, and it was our concern with exposing and bridging the division between the hard sciences and the humanities that these programmes illuminated so clearly that led me into environmental history.

At the time, southern African environmental history could have been described as a field "virtually totally neglected,"⁵ but there was a rich thread of social history that

4 Rachel Carson, *The Edge of the Sea* (New York: Houghton Mifflin, 1955), 1.

5 Jane Carruthers, *Game Protection in the Transvaal 1846 to 1926* (Pretoria: Archives Yearbook for South African History, 1995), 1.

had begun in the 1970s with a new generation of scholars who employed a Marxist paradigm of class relations to explain African dispossession, capitalist industrialization, and the disruption of indigenous lifestyles. Social history was politically activist, and around its edges, although not an overt priority, were environmental themes.⁶ William Beinart has argued that thinking of an “African” environmental historiography within this genealogy has distanced it from the historiography elsewhere by situating it within African social history.⁷

The environmental revolution played out in Africa somewhat differently from elsewhere. In South Africa it was directly shaped by apartheid and by the differing worldviews of black and white citizens. Roderick Nash—who was a great influence on my work and who has become a good friend—could write of the emergence of national parks within the national framework of the history of the United States and record the pride with which the majority of citizens viewed their national parks.⁸ I was keen to contribute to this literature by providing a South African perspective and found it quite the opposite from the North American experience. Nature protection exposed the gulf between an ideology of a white elite, for whom national parks and other protected areas were morally worthwhile, accessible, and important, and impoverished black people, the majority of whom were forced to eke out a precarious living as a migrant proletariat or face rural poverty on marginal or unproductive land. It was highly political and highly divisive. Cast either as “police boys or poachers,” there was little space for black South Africans in national parks,⁹ while a growing population was crowded into homelands, some of which bordered on protected areas where a tourist industry thrived, predicated on the welfare of wild animals and their careful management.¹⁰ Small wonder, then, that as negotiations towards a “new” South Africa took shape in the early 1990s, there were calls to abolish national parks—the Kruger National Park in particular. As expressed in *The Baltimore Sun* in May 1995:

6 William Beinart, “African History and Environmental History,” *African Affairs* 99 (2000): 269–302.

7 Gregory Maddox, “‘Degradation Narratives’ and ‘Population Time Bombs’: Myths and Realities About African Environments,” in *South Africa’s Environmental History: Cases and Comparisons*, eds. Stephen Dovers, Ruth Edgecombe, and Bill Guest (Athens: Ohio University Press, 2003).

8 Roderick Nash, *Wilderness and the American Mind*. 4th edition. (New Haven: Yale University Press, 2001).

9 Jane Carruthers, “‘Police Boys’ and Poachers: Africans, Wildlife Protection and National Parks, the Transvaal 1902–1950,” *Koedoe* 36, no. 2 (1993): 11–22.

10 Jane Carruthers, *The Kruger National Park: A Social and Political History* (Pietermaritzburg: Natal University Press, 1995).

To the tens of thousands of people who enter it each year, Kruger National Park offers the chance to mingle with lions, elephants and the other wild beasts of Africa. But for the impoverished millions of black people who live on the park's border, it represents an anachronistic bastion of white privilege. For generations, the people on the outside of the park's electrified fence have been like street urchins with their noses pressed up against the window of a showplace. In South Africa's new democracy, those people are now demanding to be allowed inside, to benefit from the potential riches there . . .¹¹

Two unexpected edges developed around national parks and African exclusion from them. The first was successful land restitution claims after 1994 on the Kruger National Park (by the Makuleke and others) and the Kalahari Gemsbok National Park (by the Khomani San), the negotiated contract park of the Richtersveld, and others still under review.¹² The second relates to the reluctance of the National Parks Board authorities in the 1970s and 1980s to employ English-speaking South Africans and Rhodesians, despite excellent academic and professional qualifications and expertise. These people found spaces for their skills. Freed from the bureaucratic constraints of the National Parks Board and thus at liberty to hire qualified black African staff and to experiment with community conservation, restoration ecology, and wildlife reintroductions, a park such as the Pilanesberg National Park, situated in Bophuthatswana, one of the "independent" homelands, became an international leader in these fields, and in later years even came to influence the philosophy of South African National Parks (SANParks).¹³

Remaining with the theme of protected areas and their edges, in recent years there has been considerable emphasis on transfrontier national parks, some of which are controversial but which are designed to improve relations between neighbouring governments by straddling edges that had been demarcated in the colonial era.¹⁴ These parks go

11 Michael Hill, "Fenced-Out Villagers Await South African Park Reforms," *The Baltimore Sun*, 24 May 1995.

12 Jane Carruthers, "Mapungubwe: An Historical and Contemporary Analysis of a World Heritage Cultural Landscape," *Koedoe* 49, no. 1 (2006): 1–14; "South Africa: A World in One Country': Land Restitution in National Parks and Protected Areas," *Conservation and Society* 5, no. 3 (2007): 292–306.

13 Jane Carruthers, "Pilanesberg National Park, North West Province, South Africa: Uniting Economic Development with Ecological Design—A History, 1960s to 198," *Koedoe* 53, no. 1 (2011).

14 Martin Pabst, *Transfrontier Peace Parks in Southern Africa* (Stuttgart: SAFRI, 2002). See also www.peace-parks.org.

under a number of names, including Transboundary Protected Areas, “Peace Parks,” and Transfrontier Conservation Areas. The first, in 2000, was the 38,000 square kilometre Kgalagadi Transfrontier Park, an amalgamation of South Africa’s Kalahari Gemsbok National Park and Botswana’s Gemsbok National Park that straddles the dry Nossob River (the international boundary). This venture encouraged others in the region, including the Great Limpopo Transfrontier Park (comprising the Kruger National Park, Mozambique’s Coutada 16, and Zimbabwe’s Gonarezhou), the Greater Mapungubwe Transfrontier Conservation Area, and the Maloti-Drakensberg Transfrontier Initiative that straddles Lesotho. There are others throughout Africa. These enterprises highlight the transnational history of the region—a historiography that aims directly to blur edges. The year 1994 brought South Africa back into the international community, forcing us, in addition, to focus on “contacts, coalitions, and interactions across state boundaries that are not controlled by the central foreign policy organs of government.”¹⁵ I was pleased to have been one of the commissioning editors of the *Palgrave Dictionary of Transnational History*, edited by Akira Iriye and Pierre-Yves Saunier.¹⁶ Movements and flows of people, ideas, goods, finance, and services are at the heart of transnational analysis. How productive this kind of thinking may be was shown many decades ago by the “Annales” historians of the 1930s to whom we environmental historians owe so much. A transnational framework identifies new and blurred spaces and with these new edges come fresh insights and fresh histories.

Natural resources exist in disregard of national boundaries. The transnational dimension of environmental history has generated debates that have influenced South Africa’s environmental history conceptually, including the question of just how relevant the environmental history of the United States has been to other parts of the world. Extremely influential in this regard was the work of Richard Grove, author of *Green Imperialism* and for some years the editor of *Environment and History*. He and some other historians of British imperialism and colonialism were adamant that environmentalism was a consequence of past imperial and colonial eras and not of the modern environmental movement in the United States. Both Grove and the very eminent John McKenzie have promoted environmental history outside of the United States as being more “interesting

15 Pierre-Yves Saunier, “Transnational History;” in *The Palgrave Dictionary of Transnational History, From the mid-19th Century to the Present Day*, eds. Akira Iriye and Pierre-Yves Saunier (Basingstoke: Macmillan, 2009), 1047–55.

16 Akira Iriye and Pierre-Yves Saunier, eds., *The Palgrave Dictionary of Transnational History* (New York: Palgrave Macmillan, 2008).

and innovative,” “more integrated, outward-looking and comparative . . . in uncovering the processes and discourses of colonial expansion and cultural encounter” than the “ultra-nationalist” perspective characteristic of North America.¹⁷

It is also true that historiography from the emerging world—of which South Africa is part—has its own edge. As Paul Sutter expounded upon so well in his article on what environmental historians in the United States could learn from non-US environmental history, we have specific research questions and priorities that are related to our environmental, political, economic, and social situations.¹⁸ Contributing to volatility and endemic violence in many emerging countries is the enormous gap between rich and poor that has direct environmental consequences. As measured on the Gini index, South Africa is tenth among the 30 countries with the greatest inequality. The effect of this is that the majority of citizens have a poor quality of life while those who are wealthy are extremely rich. This is exacerbated by the fact that land is unequally distributed and equitable service provision problematic for many reasons. Just one of the consequences of the inequities is that politicians and society prioritise employment, economic growth, and development, and this is predicated on the use of the country’s bountiful natural resources. In South Africa this has led to the construction of coal-fired power stations, mineral extraction from environmentally sensitive areas, and similarly inappropriate developmental projects.

During the 1980s and early 1990s, environmentalism was an international political movement. In the South African situation of that time, this translated into robust debates around environmental justice.¹⁹ These focussed on “brown” rather than “green” issues: demands for clean water and less industrial pollution, worker safety, and land for housing and subsistence farming. Using slogans like “apartheid divides, ecology

17 Richard Grove, “North American Innovation or Imperial Legacy? Contesting and Re-Assessing the Roots and Agendas of Environmental History 1860–1996,” unpublished paper presented at the Colloquium on the Environment, Research School of Social Sciences, Australian National University, Canberra, February 1996; Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism* (Cambridge: Cambridge University Press, 1995); Grove, “Editorial,” *Environment and History* 6, no. 2 (2000): 127–29; Grove, “Editorial,” *Environment and History* 1, no. 1 (1995): 1–2.

18 Paul Sutter, “Reflections: What Can US Environmental Historians Learn From Non-US Environmental History?” *Environmental History* 8, no. 1 (2003): 109–29.

19 Jane Carruthers, “Dainfern and Diepsloot: Environmental Justice and Environmental History in Johannesburg, South Africa,” *Environmental Justice* 1, no. 3 (2008): 121–25.

unites” and “the greening of our country is basic to its healing,” environmentalism rode a wave of euphoria. The expectation was that after a divided political past, all South Africans regardless of race, class, or age cohort, would care for the physical environment because—unlike authoritarian apartheid—environmentalism was grass-roots mobilisation for “our future and for our children” within a united democratic nation.²⁰ However, this kind of environmentalism has waned for many reasons, although the issues around environmental injustice remain evident and demand attention.

The colonial experience was, without doubt, the defining historical experience of the continent, at least south of the Sahara. The African environment was certainly the site of the struggle for power over people and resources, and the environment is integral to examining other axes of power and injustice.²¹ The colonial experience is too diverse to be encapsulated in a single postcolonial theory that merely dichotomises “colonisers” and “colonised.” As Sachs argues, this is a circular argument that prevents any possibility of an advance in thinking. It locks history into a stereotype of an unchanging bi-fissured exploitative relationship between monolithic groups, recognising neither change over time nor specific historical context. It is only through careful and sophisticated historical scholarship that the postcolonial trap of simple divides that Sachs believes has crippled environmental history will be avoided and fresh perspectives on colonial and other power structures unearthed.²² In southern Africa both colonised and colonisers were highly diversified and the imposition of an overarching “settler mentality” was uneven, specific, and always challenged strongly by ongoing resistance. The region exhibited great “hybridity” and was (and is) replete with sub-nationalisms and competing subaltern discourses and cultures. In short, there were, and are, many edges. Beinart refers to a “struggle to free historiography and social studies from narratives of dependence, victimhood and romanticism.”²³ In this regard the research of environmental historians

20 Jacklyn Cock and Eddie Koch, eds., *Going Green: People, Politics and the Environment in South Africa* (Cape Town: Oxford University Press, 1991), 15; Eddie Koch, Dave Cooper, and Henk Coetzee, *Water, Waste and Wildlife: The Politics of Ecology in South Africa* (London: Penguin, 1990); Brian Huntley, Roy Siegfried, and Clem Sunter, *South African Environments Into the 21st Century* (Cape Town: Human and Rousseau Tafelberg, 1989).

21 E. Stroud, “Does Nature Always Matter? Following Dirt Through History,” *History and Theory* 42 (2003), 75–81.

22 Aaron Sachs, “The Ultimate ‘Other’: Post-Colonialism and Alexander von Humboldt’s Ecological Relationship with Nature,” *History and Theory* 42 (2003): 111–35.

23 Beinart, “African History and Environmental History,” 302.

has gone a long way to changing historical and current thinking about African issues, yet little is known about indigenous or authentic regional natural resource strategies or biocultural knowledges that might have been, or how they might be revived or integrated into modern conservation biology and management. At stake are environmental and social resilience and sustainability. These challenges become all the more urgent with fears that global climate change will have inequitable effects and with the realisation that economic growth and development will not take place without improving the environmental health of the poor.²⁴


Environmental history is *the* humanities field that lies at heart of the interface between people and their physical environments. Tom Griffiths thoughtfully calls it “a distinctive endeavour [that] moves audaciously across time and space and species,” that “challenges some of the conventions of history,” and “questions the anthropocentric, nationalistic and documentary bases of the discipline.”²⁵ Within environmental history, particularly with an African edge, we have an arena in which to broaden the horizons and boundaries of historical study. It could become one of the most important and relevant fields, particularly in the emerging world. Not only can environmental history “allow a more complex reading of the past [and] also challenge and revitalise the subject of history itself,”²⁶ but it can also relieve the historical narrative from becoming bogged down in “tragic tales” as Mark Carey calls them, and provide a reinterpretation of our understanding of historical processes.²⁷

24 Joan Martinez-Alier, “Reflections,” *Development and Change* 43, no. 1 (2012): 341–59.

25 Tom Griffiths, “How Many Trees Make a Forest? Cultural Debates about Vegetation Change in Australia,” *Australian Journal of Botany* 50 (2002): 375–89, 377.

26 John MacKenzie, “Introduction,” *Environment and History* 10, no. 4 (2004): 371, 377.

27 Mark Carey, “Latin American Environmental History: Current Trends, Interdisciplinary Insights and Future Directions,” *Environmental History* 14 (2009): 221.

The image is a complex, abstract painting with a highly textured surface. The color palette is dominated by earthy tones: various shades of grey, black, and brown, set against a light beige or tan background. The composition is layered and somewhat chaotic, with dark, almost black, areas that look like ink or charcoal being applied over lighter, more painterly sections. In the lower right quadrant, there is a small, dark, somewhat indistinct shape that could be interpreted as a stylized animal or a creature. The overall effect is one of depth and tactile quality, as if the viewer can feel the brushstrokes and the different materials used in the work.

Part I:
Thinking with Animals

Harriet Ritvo

How Wild is Wild?

Potter Stewart, a former Justice of the US Supreme Court, famously said of hard-core pornography that it was hard to define but he knew it when he saw it. His process of discrimination was far from unique: with regard to pornography, many people feel similar confidence in their own reactions. But this gut consensus has not led to shared definitions or universally accepted policies. That is to say, when they see any particular “it,” some people know it and some do not. A parallel juxtaposition of convergent method and divergent results exists with regard to wild animals. Even people accustomed to thinking critically about the more general notion of “wilderness” often rely on less consciously formulated criteria to categorise a particular animal or group of animals as wild. And, as is the case with pornography, there are some good reasons for this inconsistency. Both pornography and wild animals inspire strong and diverse emotions. And both are genuinely difficult to define and delimit.

Leaving pornography aside, there is no obvious line or boundary that separates wild animals from those that are not wild. Instead, there are expansive grey areas, of which the most conspicuous encompass the domesticated animals that have reverted to a life outside human control, and the undomesticated animals that thrive within human environments. And these definitional difficulties have been compounded by a protracted shift in historical valence. To put it in a nutshell, in the course of the eighteenth century (and at least in the view of some fortunate people in some contexts), wild nature began to seem less terrifying and more exhilarating. As has been frequently recognised by scholars, Romantic art and literature provide profuse evidence of this major transition in Western sensibility. It is the reason that nineteenth-century travellers, like their twenty-first-century successors, admired stark mountain landscapes and stormy seas. This shift also affected activities and institutions whose professed focus was more pragmatic. It can, for example, be traced in the practices of the nineteenth-century zoos and, especially, in the acclimatisation societies with which they were often associated. In these settings, the exotic and wild was converted into the domestic or domesticable, at least in theory or aspiration.

When the zoological garden at Regent's Park opened its gates to the public in 1828, a small area was reserved for what were termed breeding experiments.¹ (These quarters soon proved inadequate and unsuitable, and they were exchanged for a farm outside the city.) It accommodated various species of deer, sheep, goats, zebras, kangaroos, zebu cattle, rabbits, ostriches, emus, gallinaceous fowls (wild relatives of chickens and turkeys), ducks, and geese. These animals had been selected to accommodate a much narrower human constituency than the one that was drawn to the main menagerie. Many of the zoo's most eminent patrons were also elite agriculturalists with a lively interest in the breeding of domestic animals. In its 1829 report the Council of the Zoological Society defined the primary objective of the farm as "effecting improvements in the quality or properties of [domesticated quadrupeds and birds] used for the table; and likewise in domesticating subjects from our own or foreign countries, which have not hitherto been inmates of our poultry or farm yards."² This formulation both privileges wildness and conflates it with domestication; at the peak of early enthusiasm for pedigreed breeding it implies that a hybrid infusion of wildness might be as desirable as the inbred purity documented in breed books.

As it turned out, the farm's first years were its only years. Maintaining live animals was and is expensive, and the young Zoological Society's finances were in any case fragile. Decades later, in the 1860s, the Society for the Acclimatisation of Animals, Birds, Fishes, Insects and Vegetables within the United Kingdom, whose sole purpose was to encourage such introductions and crossings, also fizzled. But its French model, the Société d'Acclimatation, which benefitted from both official support and an extensive colonial network, enjoyed much greater success. Founded in 1854, it encouraged the introduction of wild and domesticated exotic animals with equal enthusiasm. Hybridization was a persistent preoccupation of the members, and longhaired goats were special objects of desire. At the Society's annual prize giving in 1911, the president praised the recipients for having "created the most beautiful and productive races, the best adapted to our needs, which have become for us a source of profound joy."³

1 Peter Chalmers Mitchell, *Centenary History of the Zoological Society of London* (London: Zoological Society of London, 1929), 93.

2 Quoted in Henry Scherren, *The Zoological Society of London: A Sketch of Its Foundation and Development, and the Story of Its Farm, Museum, Gardens, Menagerie and Library* (London: Cassell, 1905), 43.

3 Edmond Perrier, "Societe d'Acclimatation. Distribution des Recompenses." Manuscript, 12 Feb 1911. MS 2227, Natural History Museum, Paris.

Before the Society was a decade old, its “Jardin Zoologique d’Acclimatation” opened its gates in the Bois de Boulogne. As its name suggests, it was conceived as a hybrid institution. It included the attractions that had become standard for a zoological garden and that were consequently required by the general public—big cats, elephants, and other iconic animals. But these constituted only a part of its collection, and not the most important part, at least in theory or in principle. Its core mission was much more pragmatic, distilled in the term “applied zoology.” The zoo was intended as a laboratory for the study of acclimatisation, and its priorities were distinctively pragmatic. Thus, its initial displays emphasised the economic potential of animals from French colonies (Algeria turned out to be a permanent preoccupation, both as a source and a target of acclimatisable animals), and it housed the largest collection of exotic agricultural animals in Europe.⁴

The most robust and effective acclimatisation societies, however, were established on the other side of the world, in the British colonies of Australia and New Zealand. In 1861, the Acclimatisation Society of Victoria described its objects in much the same language as that used in Britain: “the introduction, acclimatisation, and domestication of all innocuous animals, whether useful or ornamental; the perfection, propagation, and hybridisation of races newly introduced or already domesticated, etc.”; and this language was subsequently borrowed by similar societies elsewhere in Australia and New Zealand.⁵ As with the European societies, it would be difficult to extrapolate a clear sense of what was wild and what was domesticated from the species that they acquired and nurtured. The range of mooted targets was as ambitious and fanciful as it was in Britain—including babirusas and giraffes, as well as the more plausible antelope, deer, sheep, and goats. Within a few years of its foundation, the Acclimatisation Society of Victoria owned camels, llamas, alpacas, hares, several species of goat, sheep, and deer, and various kinds of birds and fish. The focus on consumption (that is, ingestion) was equally strong. As in Europe, it was hoped that antelopes would offer a change from the monotony of beef and mutton, and that the appealingly large South American curassow could supplement more pedestrian fowl. Even the Australian fauna, which were routinely derogated by acclimatisers on both utilitarian and aesthetic grounds, could be drafted to serve in this campaign. Adventurous eaters

4 Michael A. Osborne, *Nature, the Exotic, and the Science of French Colonialism* (Bloomington: Indiana University Press, 1994), ch. 4.

5 *The Rules and Objects of the Acclimatisation Society of Victoria* (Melbourne: William Goodhugh, 1861), 3.

claimed that “the flesh [of the wombat] is always . . . a great treat”; “the opossum is good . . . especially when curried or stewed”; and “the monitor lizard . . . if one could overcome the repugnance of its appearance, is delicate and excellent food.”⁶ A celebratory dinner, held in a Melbourne hotel in 1864, was described as a “fitting tribute to the cause of acclimatisation . . . [and] also a complete triumph of gastronomy. . . . Among the entrees were curries, pates and salmis in which wombat, bandicoot, and parroquet figured conspicuously.”⁷

Despite the eccentric tone of much acclimatisation-related discourse (and behaviour, for that matter), in both Australia and New Zealand, acclimatisation societies received public support, albeit inspired by varying degrees of official enthusiasm and inspiring varying degrees of taxpayer outrage. At least in some places, they were endorsed by God as well as by Caesar; thus parish clergymen in Victoria attempted to persuade their flocks that “a society which multiplies . . . the gifts of an All Bountiful Creator . . . is worthy of the support not only of the Philosopher but also of the Christian.”⁸ In both places the acclimatisers also had to deal with mounting suspicion that some of their introductions were doing more harm than good: the Australian societies, for example, repeatedly swore that they were not to blame for what had quickly become a plague of rabbits. Even the journal *Nature* chimed in from 12,000 miles away, stating that “the English Acclimatisation Society fortunately came to an end before it could do any harm here; but its example has been mischievous in our dependencies.”⁹

Thus enthusiastic acclimatisers could seem irresponsible as well as eccentric. But the often radical disjunction between their ostensible goals and the species that they suggested as the means of realizing those goals can also be seen as a concrete expression of an ambiguity that similarly bedevilled sober naturalists. Identifying species—that is, the limits of species—had always been both necessary and problematic. The conventional definition of the boundary between similar organisms—the ability to produce fertile offspring—was clearly disregarded by many animals (and even more plants). Nineteenth-century zookeepers enjoyed experimenting with interspecies and

6 George Bennett, *Acclimatisation: Its Eminent Adaptation to Australia* (Melbourne: William Goodhugh, 1862), 19.

7 “Acclimatisation Society’s Dinner held at Scott’s Hotel, Collins Street West, on Wednesday, July 6th, 1864,” *The Yeoman*.

8 Circular letter from E. Wilson to parish priests, March 1864. Victoria State Library SLT 285.2945.M24.

9 *Nature* (1872), quoted in *Hawkes’s Bay Acclimatisation Society Centenary 1868-1968*, ed. Joyce M. Wellwood (Hastings, NZ: H. B. Acclimatisation Society, 1968), 24.

intergenus crosses, and zoo goers admired the resulting hybrids between donkeys and zebras, domestic cattle and bison, and dogs and wolves.

This ambiguity has been distilled in the classification of domesticated animals—that is, none of them has become sufficiently different from its wild ancestor to preclude the production of fertile offspring, and some mate happily (or at least effectively) with more distant relatives. Despite these persuasive demonstrations of kinship, however, from the eighteenth-century emergence of modern taxonomy, classifiers have ordinarily allotted most types of domestic animal their own species name (rabbits and pigs are exceptions). Domestic sheep are still classified as *Ovis aries* while the mouflon is *Ovis orientalis*, and dogs are *Canis familiaris* while the wolf is *Canis lupus*. This practice has much to recommend it in terms of convenience, but it also constitutes an acknowledgment both of the difficulty of distinguishing between wild animals and their domesticated kin, and, nevertheless, of the felt importance of doing so.

The implications of making or not making such distinctions extend beyond the intellectual realm. As the activities of nineteenth-century acclimatisers show, they construct the physical world at the same time as they describe it. And, of course, they still do so. The advent of DNA analysis in recent decades has made it both easier to distinguish between domesticated animals and wild ones, and more difficult. For example, the Scottish Wildcat Association was established in 2007 to protect the small remaining British sub-population of the very widely distributed species ancestral to domestic cats. (Of course, the fact that such creatures are considered worthy of protection signals a distinctively modern valuation of wild animals; Victorian gamekeepers hunted down the ancestors of these animals and nailed their skins to barn doors.) The targeted felines strongly resemble domesticated tabbies, although they tend to be larger and more irascible. Perhaps for this reason, the distinction between pure wild animals and those contaminated by miscegenation featured prominently on the Association's website: "In 2004 a team of scientists . . . estimated that 400 wildcats remained, the other 5000 or so being feral domestic cats or hybrid mixes of domestic and wildcat." It further advocated "improving legal protection, launching a public awareness campaign, supporting the captive breeding program and creating special reserves for wildcats which would in turn benefit many other species."¹⁰ As a result of

10 Scottish Wildcat Association, <http://www.scottishwildcats.co.uk/wildcat.html>.

these efforts, the Scottish wild cat has been declared a “priority species” (at least in Scotland). In an ironic gloss on the efforts of nineteenth-century acclimatisers, it has therefore become eligible to benefit from the establishment of a studbook, a captive breeding program, and other measures that blur the cultural boundary between the wild and the domesticated, even as they attempt to reinforce the genetic boundary that separates them.

Thomas R. Dunlap

Thinking with Birds

For as long as people have had thought, they have thought with animals, partly because they wore their skins, made tools from their bones, ate them—and were eaten by them—but mainly because they saw animals as both like and unlike themselves. Animals served as bridges to the world outside and keys to doors within. They still do. Their appeal is in part timeless—we still stand in awe before Neolithic cave art—but also shaped by culture. In ours we understand animals with science and come to them from our homes in industrial society. Darwin put our bodies fully into the animal world, ethologists like Konrad Lorenz our minds, and several generations of ecologists and biologists laid out in detail our species' impact on the world. We do not use animal totems, except for sports, but we see animals as indicators of ecosystem health, test our medicines on them, and read about chimpanzee behaviour for hints about the roots of human nature. The generation that rushed to the cities in the late nineteenth century also began the search for a way back to nature from within that life. They relied mainly on birds, and birds are still the creatures that most often draw us to nature and hold our interest through life. How we think with them and how those ways of thinking have changed opens a window on our understanding of the world beyond the sidewalk. Three approaches, all from the late nineteenth century, all strong today, stand out: birding, a mix of science, sentiment, self-education, and competition; birds around the home, mixing nature and our daily lives; and bird conservation, society's organised reaction to our effect on the wild.

Birding, the apparently simple act of identifying and listing species, intricately mixed nature and culture. Birds' biological characteristics made it a plausible hobby: they do not hide, come in a comparatively few shapes, and many have diagnostic feather patterns. North American birds, for instance, belonged to about four dozen families, and most people knew hawks and herons, woodpeckers and thrushes, before they began. That helped them find the right section of the guide, and from there plumage often led them to a species name. Early success encouraged them to take up the hobby, but challenges remained for even the most expert. Sparrows look much alike and immature gulls have a confusing array of plumages; picking out soaring raptors required knowing details of form and behaviour; and identifying birds by their songs called on an entirely different body of knowledge. Listing, like any good game, was easy to start and impossible to master.

While biology made listing a plausible hobby, culture defined the list. Birders set bounds in space by property lines and in time by the calendar, ordinarily making lists for what they saw at home, in the state, and in the nation (and more recently the world) during a day, a year, or a lifetime. Science had a key role; birding may usefully be seen as an individual, cut-down version of natural history's great project of cataloguing, classifying, and mapping on the land the varied productions of life (to use a period description). Subordinating aesthetics and emotion to science, birders counted species rather than forms, even when these could be easily picked out in the field. On the list the drably coloured female warbler departing on fall migration was the same as her distinctly, brightly coloured, and easily identified mate arriving in the spring, and the Ferruginous Hawk soaring over the prairie counted no more than the pigeon on the windowsill. Birders changed their lists as the ornithologists changed their minds, deleted a checkmark when the Committee on Nomenclature of the American Ornithologists' Union "lumped" the Oregon Junco and the Slate-coloured Junco as subspecies of the Northern Junco, added one when the committee "split" the Boat-tailed Grackle and the Great-tailed Grackle into distinct species. Science even changed what people called the birds. Before birding people used whatever names they liked, with the result that, depending on where in the United States you lived, "redbird" meant the Northern Cardinal, the Scarlet Tanager, or the Summer Tanager. Common species might have dozens of different names: an ornithologist compiled a list of 103 for the Northern Flicker. Confronted with this lexical chaos, early guide writers turned to the AOU's standard English-language names. Here, at least, was an authoritative set. They often added a selection of local names to help their readers, but as more people learned birds from books instead of neighbours, said "Osprey" instead of "fish hawk" and "Yellow-rumped Warbler" and not "butter butt," guides dropped the old names.

American birding's roots in Progressive-era women's reform made listing and competition central. Bird study seemed an ideal way to get educated, genteel women outdoors for healthy exercise and self-education in science—while encouraging support for bird conservation—but advocates could hardly recommend the established method. Shooting birds and preparing their skins for a collection offended equally humane sentiment, genteel sensibilities, and conservation. Instead they urged women to put a name to what they saw, and Florence Merriam told them how to do it in *Birds through an Opera Glass* (1889), the first true field guide. The list gave the novice a starting place, pleasure at the end of the day, and a measure of competence, while the competition it encouraged

sharpened field skills. The American guide, serving this audience, evolved into a book stripped of all information except what led to a name. In other countries, where birding grew out of natural history, field identification was seen as only a first step in bird study, and guides included much information on life history. The more general adoption of the American guide and of competitive listing after World War II forms an important and as yet little-studied chapter in the history of amateur nature study.

Like birding, popular interest in birds around the home had its base in biology and its practice in the culture. Because birds nested in their trees and sang in their bushes, Victorian women easily brought them into their own kingdom, the domestic sphere; they looked to birds for, as Mabel Osgood Wright had it, *The Friendship of Nature*, or, to use Neltje Blanchan's title, an acquaintance with their *Bird Neighbors*. Birds in the yard remain a common enthusiasm, as demonstrated by the modern magazine *Birds and Blooms* and the robust demand for (allegedly) squirrel-proof bird feeders, specialised feeds, and bird houses, but ecology and the environmental movement transformed birds in the backyard from an extension of the home into the place where home and the world met. People saw their work as an individual contribution to environmental preservation, chose plantings to provide food, nesting sites, and cover for the birds as well as for beauty for themselves, and welcomed all species, not just the brightly coloured songsters the Victorians loved. Mabel Wright, despite her deep commitment to humane ideals, thought the Cooper's Hawk, which preyed on other birds, suitable only for target practice, but a nesting pair now makes a neighbourhood attraction, and some birders have two-stage feeders: they put out bread for the starlings to attract the hawks.

Conservation, like other aspects of our interaction with birds, changed with our understanding. The first generation, in campaigns marked by humane ideals and domestic sentiment, worked to end market hunting, egg collecting, and the casual slaughter of songbirds. Their successors, who were more conscious of birds as part of natural systems and who were seeing homes and factories marching out into wild areas, pressed for bird preserves on every level, from the local park to the National Wildlife Refuge System. In the 1950s birders pointed out the dangers of pesticide residues, and the environmental movement that grew in the wake of that controversy—and in part because of it—changed conservation from the protection of nature and wildlife to the defence of the biotic systems on which all species, including our own, depended. People saw the flocks of wild parakeets that bred in some American cities not as colourful addi-

tions to bird life but as potentially invasive species and as an unintended consequence of the pet trade. They viewed the deaths of albatrosses in the Southern Ocean from eating floating plastic and bits of Styrofoam as eloquent and alarming testimony to the extraordinary reach of our ordinary artefacts.

Environmental research drew birders into conservation, further blurring the (never quite clear) lines between scientists and citizens. From the 1920s ornithologists used amateur labour to band birds, and from the 1940s records like the annual Audubon Christmas Bird Count to assess populations, but faced with the need for fine-grained current data on many species, they mobilised the masses. In 1986 the US Fish and Wildlife Service began a National Breeding Bird Survey, directed by Chandler Robbins—ornithologist, birder, and field guide writer—to measure the relative abundance of songbirds by reports of what expert birders heard each spring. In the next generation computers and the internet allowed data gathering on a far larger scale and analytical tools that could make use of even novices' observations. Now, every year, 200,000 people send reports to the Cornell Laboratory of Ornithology's programs, which range from protecting endangered species to tracking bird diseases across the continent—this last with reports from backyard feeders.

Common everywhere, visible even in the heart of our cities, birds brought the wild to everyone, and birding encouraged an attention to the world, which, coupled with education, raised awareness of nature and our ties to it. Birders knew that some of the warblers they saw in the park on spring mornings came from the tropics and would go on to the boreal forests. They related the appearance of some new species and the dwindling of others to changes in a neighbourhood wetland or meadow. In addition, birds' easy movement from city to wilderness called into question our categories of wild and tame, humans' place and the realm of nature, making them the ideal form to think with, in a world so dominated by humans that some have proposed a new geological age, the Anthropocene, and so threatened by rising seas, global climate change, and emerging diseases that our civilization, if not our species, seemed in peril.

Our methods and approaches have changed since early humans scratched lines on bone and spread pigments on cave walls, but we go to birds for the same reasons they did—to better understand those other tribes with whom we share the world and the journey from deep time.

For Further Reading and Thought

Humans' relations with birds extend far beyond what I could cram into my book on North American field guides to the birds, *In the Field, Among the Feathered* (Oxford University Press, 2011), and even field guides deserve more attention. On the scientific end, Mark V. Barrow, Jr., *A Passion for Birds: American Ornithology after Audubon* (Princeton: Princeton University Press, 1998) gives an introduction to the American scene, and Paul Lawrence Farber's old but still useful *Discovering Birds: The Emergence of Ornithology as a Scientific Discipline, 1760–1850* (1982; reprint Baltimore: Johns Hopkins University Press, 1997) introduces the discipline as a whole. Two of Harriet Ritvo's works, *The Animal Estate* and *The Platypus and the Mermaid and Other Figments of the Classifying Imagination* (Cambridge: Harvard University Press, 1987 and 1997), introduce the larger cultural dimensions. Beyond lies a vast and disorganised literature on people and birds from antiquity to the present. For a start, dip into Jeremy Mynott's *Birdscapes: Birds in Our Imagination and Experience* (Princeton: Princeton University Press, 2009), an individual and somewhat quirky but almost encyclopaedic personal study of what birds mean to humans. It, like Ritvo's work, should stimulate the imagination. Also, put a field guide from your country alongside one from another continent. Because the books had to appeal to ordinary people, make a profit, and be scientifically respectable, every aspect, from the paper to the arrangement of the illustrations, carried a message from the culture, some as immediate and local as the technology of printing available then, others as universal as the urge to put in order all the things we see around us.

Mahesh Rangarajan

Animal Pasts, Humanised Futures: Living with Big Wild Animals in an Emerging Economy

India's environmental pasts today provide contrasts not only with Japan, North America, and Europe but also with societies until recently under colonial domination or rule. India is among the BRICS countries (Brazil, Russia, China, and South Africa are also included) that are widely seen as emerging economies in the new century. Yet there is a second feature that distinguishes India, namely that since 1950, it has been a constitutional democracy. It has in this respect had a less troubled past than Brazil (with its spells of military rule) or South Africa (where apartheid crumbled only in the wake of the Cold War). The twin features of economic expansion and political democracy complicate the story of human relations with the wider environment.

Nowhere is this more sharply in evidence than with respect to the large animals that share living space with over a billion humans in the country. Here, historic legacies are critical: there are tigers in 13 Asian countries, but the largest numbers with the widest genetic diversity are in India. Lions, now extinct in all of West Asia, not only subsist in the Gir Forest in western India but have expanded their range more than five-fold in the last decade. The strains of cohabitation are enormous, and most large wild vertebrates have experienced major shrinkage of living space and numbers in the last two centuries. Elephant raids on crops afflict half a million cultivators, most with plots smaller than two hectares. In a mostly rural country with a large number of domestic ungulates for milk and meat, wool and hides, it is notable that one third of all large carnivore diets consist of such tame stock. Even the high Himalayas, with their wolves and snow leopards, have high levels of conflict between shepherds and predators.

It is common today to speak of the end of nature or to offer requiems for the wild. India has had a human presence for millennia, and the Ganga valley, the demographic centre for 2,000 years, has known rice cultivation for four times as long. It is difficult to think of any patch of land or water body that is pristine in any serious sense. Past ages often saw a seesaw movement, with land being cleared but subsequently overgrown with thicket and jungle when farming was abandoned as rivers shifted course, or as the rains failed repeatedly, or as revenue demands forced peasants from the area.

In an ideational sense, too, nature and culture were rarely seen as separable. The hierarchies of humans in the caste-based social order were often mapped onto the natural world. Similarly, royal or warrior domination of the forest in the hunt was a surrogate for war. People and animals criss-crossed boundaries, clashing over as well as cohabiting the same spaces. Nature-culture boundaries were and are permeable.

The *Arthashastra*, a manual of statecraft possibly from the third century BCE, laid down different road widths for the city, the village, and the elephant forests, the latter being places where the great beasts were trapped to be tamed for armies. Mughal rulers had an empire that spanned much of South Asia and beyond for 150 years, ending in the early 1700s. They kept cheetahs for hunting antelope, a custom so well known in India that in China the trainers were mostly Muslims from the subcontinent.

While there was no sense of harmony or peace with nature, there is still little doubt that recent centuries saw a break with the past. British rule, first under John Company and then the Crown, came to an end in 1947. One of the hallmarks of British rule, especially after the revolt of 1857 was crushed, was a more complete domination of the countryside. Princes and the landed aristocracy swore loyalty to the Crown and turned their martial energies on animals of the forest. Their hunting parks and the forest reserves, carved out to meet industrial demand by the British, were protected from agricultural expansion. Often, harsh labour levies and limits on grazing, burning, hunting, and fishing were used as means to reorder these spaces to supply trophies and timber.

In 1947, India's new rulers were confronted with this legacy, as the jewel slipped away from the Crown. How could politicians enable the pursuit of equality in a society of deep hierarchies? It was inevitable that social and economic inequities would collide with the promise of equality. Ensuring change via the ballot box and courts, via peaceable protest and dialogue rather than the bomb or the gun, would be a challenge. History can decide whether this objective has or has not been met.

For our purposes, what matters is that there was an attempt to assimilate the best of the old with the promise of the new. In the 1940s, Premier Jawaharlal Nehru intervened to save the lions of the Gir from trophy hunters. Similarly, the first Indian Governor General, Rajaji, gave up hunting rights in the Shivalik hills, and the tract is now a national park in his name. To be sure, the creation of a democratic edifice was seen as stable only

if it was accompanied by the artifices of modern industrial growth. In the case of the great Nagarajunasagar dam in south India, where an ancient Buddhist stupa was imperilled by reservoir waters for fishing, there was a successful transplantation to a new site overlooking the lake. Nature, like culture, seemed essential to give the new state deeper roots in the past.

As in many newly independent nations, and drawing on both American and Soviet experience, industrial expansion was seen as critical for making the country economically self-reliant. Projects included large dams and steel mills, land clearance to settle the refugees of Partition, and the founding of new cities as state capitals—Chandigarh in the north and Gandhinagar in the west. The destruction of forest and marsh land was considerable, and in many cases, like the killing of crocodiles for rewards in reservoirs, nature was seen as inimical to the creation of national wealth. Peoples and settlements relying on forests lost out considerably as imperial strictures on access were tightened, this time to help national development.

Yet the correctives to these trends were not absent. The larger debates and discussions, not merely in the Congress party but in the wider movements for freedom, social reform, and economic change, generated not one but many views of nature. Nehru reflected on this in a letter written exactly a decade after independence. On 15 August 1957, he asked the chief ministers of India's states to ask how large projects would impact "the economy of nature, established through the ages." "Evil consequences" of schemes had to be assessed as well as their gains. He wrote:

We have many large scale river valley projects that are worked out by engineers. I wonder, however, how much thought is given before the project is launched to have an ecological survey of the area and to find out what effect it would have on drainage system and the flora and fauna of that area.¹

Such concerns demonstrate the limits of power in independent India. The country did not experience wholesale uprooting and destruction of land, pasture, and forest-based

1 Jawaharlal Nehru, "No. 67. Letter to Chief Ministers, Independence Day, 15 August 1957," in *Letters to Chief Ministers, Volume 4, 1954–1957*, ed. Sarvepalli Gopal (Delhi: OUP, 1988), 543–44. Such doubts as Nehru expressed need to be set in the context of his wider record of promoting such projects. See Rohan D'Souza, "Damming the Mahanadi River: The Emergence of Multi-purpose River Valley Development in India," *Indian Economic and Social History Review* 40 (2003): 81–105.

production regimes, as was the case in post revolution China after 1949. Nor did it have the kind of relentless agricultural extension of the kind promoted in other parts of the Asian mainland. Nehru's letter was written in 1957. The previous year, Secretary Nikita Sergeyevich Khrushchev, in the USSR, had launched the Virgin Lands Campaign to expand agriculture to marginal lands. In 1958, Chairman Mao's Great Leap Forward in China sought to "grow grain on the top of mountains and the bottom of lakes." Both these huge campaigns failed. The conquest and subjugation of nature, so central to the vision of change, was humbled in part by nature's elements, though at immense human cost.²

In common with many other parts of the world, India experienced political and social upheaval at the end of the sixties, with ecological concerns being one key component. Many of today's parks and sanctuaries were delineated in this and succeeding decades. These parks account for six percent of the landscape—not so small an area in a land with 350 people per square kilometre. It was no coincidence that many of these sites incorporated parks that had been created by princes and imperial-era forest reserves. In many case, there remain serious conflicts of access and rights, except that the struggle now is for legal recognition of usufruct.

Economic expansion generally brings opportunity—life spans in India have doubled to 68 years since independence—but it can also deepen inequities or even reduce opportunity, depending on the model of development. What is critical in the Indian context is the sheer scale of resource-related conflicts. These are matched in scale only perhaps by continent-sized states like Brazil and China. But unlike Brazil and China, India is a largely rural society and, despite huge changes, is still home to the largest number of poor people on earth.

The challenge is not to freeze growth but to plan its unfolding. Here, the legal enactment of entitlement rights has been a key recent development. The Forest Rights Act 2006 is one example, giving a measure of tenurial security to smallholders who have been present for decades. More importantly, community rights were given legal recognition; diversion of forest land now requires local council (Gram Sabha) permission. In

2 Judith Schapiro, *Mao's War against Nature: Politics and the Environment in Revolutionary China* (Berkeley: University of California Press, 2004); William Taubman, *Nikita Khrushchev: The Man and His Era* (New York: W.W. Norton, 2004), 262–63 and 266–67.

the now well-known Niyamgiri hills case of 2010, the proposal for a major bauxite mine was rejected due to local disapproval. A major consequence was to secure an elephant corridor. Such a step of course pales against larger defeats but it gives ground for hope. Democracy secures liberty, but it is still grappling with the challenge of equality.

India—like South Africa and other former colonies—struggles on not one but many fronts. Yet, even as the apartheid regime was crystalizing in the late 1940s, India was embarking on the experiment of democracy on vast scale. Concomitant with this (and this is not exclusive to India) has been the dilemma of how to make spaces for nature even as the human footprint expands and often disrupts the webs of life. Contrary to doomsday predictions, the broader picture has room for cautious optimism. If larger wild animals survive in stable populations in even a fraction of the landscape, part of the credit must go to those who share their spaces.³ This is not to romanticise human-nature relations, for the future of these relations rests on the wider ability not only to make spaces for nature but also to provide security to those who pay the costs. The future also hinges on the ability of democracy to regulate powerful economic interests. As with much else, nature's fate rests on the potential of human institutions and practices to rise to the challenge. Peace with nature requires peace among people.

3 Vivek Deshpande, "Vidarbha Tiger Walks Hundred Kilometers, Braves NH in Search of a Mate," *Indian Express*, 6 October 2013.

Interlude

Tom Griffiths

The Beast of the Forest

“Puzzling are the ways of wild animals,” wrote James Stevenson-Hamilton. And even more puzzling, surely, are the ways of humans, especially in their encounters, real or imagined, with threatening nature. This account of a recent European walk draws deeply on Jane Carruthers’ brilliant and elegant scholarship on how people negotiate the wild.

Last year I walked with my grown-up children in the footsteps of the Scottish writer Robert Louis Stevenson who, in 1878, travelled with a donkey in the French mountains of the Velay, the Gévaudan, and the Cévennes. Stevenson, fondly known as RLS, wrote his second book about that twelve-day journey, called *Travels with a Donkey in the Cévennes* (1879), and it became his first celebrated literary achievement. In our rucksacks we carried his book and read a chapter each day, in step with our guide.

Our walk began near Le Puy on the Velay plateau, an extensive volcanic upland of gentle *puys*, wooded hills that form undulating chains of cones and domes amidst grazing cattle and fields of wheat. Soon you cross the young Loire River, and then suddenly plunge off the southern edge of the plateau into a rougher region, the Gévaudan. It feels wild, harsh, and forbidding, and seems steeped in melancholy.

On the morning we were to walk into the forests of the Gévaudan, our host in the medieval town of Pradelles handed me the local newspaper with a photo and headline that declared *Le loup est arrivé!* (The wolf is here!) It announced evidence that the wolf, which had verged on local extinction since the 1930s and then returned to France via the Italian Alps in the 1990s, was now back in the Gévaudan, one of its most notorious former realms. Our host was stirring us by eagerly brandishing this news, for he knew we had a tent and were, like Stevenson, determined to camp. As the owner of a *chambres d’hôtes*, it was not in his interest to encourage anyone to pitch a tent. *Le loup* has always had its human uses.

That morning a cold north wind was confirming our arrival in a new, harsher region. We were entering the territory of *la bête du Gévaudan*, a wolf or wolves that terrorised

the populace in the mid-eighteenth century, killing about one hundred people between 1764 and 1767, mostly children and young women tending sheep and cattle.

“The beast” did not just attack, it devoured. It lunged for the neck, gored and mauled victims, and wrenched heads from bodies. Twenty thousand peasants from one hundred parishes were drafted to comb the countryside and run it to ground in February 1765, and they failed. It teased and eluded a succession of royal hunters and kept on killing. La bête became a national sensation, securing the attention of the King and attracting commentaries from Voltaire, Immanuel Kant, Frederick the Great of Prussia, and the English writer Horace Walpole.

Stevenson carried a revolver perhaps as much out of wariness of wolves as of bandits, for if wolves survived anywhere in Europe in the late nineteenth century, he reasoned, it would be here: “For this,” he wrote “was the land of the ever-memorable BEAST, the Napoleon Bonaparte of wolves . . . he ate women and children and ‘shepherdesses celebrated for their beauty’; he pursued armed horsemen . . .” Stevenson rather hoped he might meet a descendant of the creature, for he was after an adventure. He even began to consider the beast as an ally. Following an encounter with a pair of girls near Fouzilhic who giggled and teased him (one stuck out her tongue), refusing him directions and bidding him to follow the cows, Stevenson exploded in his journal: “The Beast of Gévaudan ate about a hundred children of this district; I began to think of him with sympathy.”

But Stevenson also observed that the terror it had inspired remained active even a hundred years later, for he encountered a man who would not venture out of his door at night, even though Stevenson was lost and begged him for assistance on the road. The man stubbornly repeated the local logic: “It is night . . . I will not cross the door.” Stevenson—the nomadic representative of worldly modernity—seemed to stare impatiently over the cottage threshold into a rural past of superstition and fear. He reflected that “if all the wolves had been as this wolf, they would have changed the history of man.”

But what if all the wolves *had* been as this wolf? Almost all the histories and stories of la bête du Gévaudan rely on the belief that this was a singular wolf. It was extraordinarily large; it was deviantly fierce; it had a corrupted lust for blood; it was a werewolf. It was an unknown species; it was a hybrid; it was a hyena; it was a savage survival from the prehistoric world. Its eyes had a satanic glow; it leaped gorges in a single bound; it was

supernatural; it was an instrument of divine retribution. It was bred with malice; it was trained with purpose; it was manipulated by a psychotic human; it was a man in a wolf skin. All of these theories have been generated across the centuries, and most of them made their appearance within months of the first attacks.

But what if the attacks were simply an intense but normal outbreak of predation by wolves moving through the district? The key question then becomes: Why did this particular outbreak become a national sensation and whose interests did such a legend serve? This is the argument of a convincing new history of *Monsters of the Gévaudan* (2011) by the American scholar Jay M. Smith, whose work contributes to an exciting tradition of European micro-history in which historians like Carlo Ginzburg, Emmanuel le Roy Ladurie, Natalie Zemon Davis, and Alain Corbin make a single life or village or event historically luminous.

Before pursuing this line of reasoning, though, we have to ask ourselves whether we are able to accept that normal wolves attack, lunge, gore, and decapitate. This is an important question for a walker with a tent at dusk in the Gévaudan. Was the rough, untutored peasant who irked Stevenson by not venturing beyond his threshold at night a superstitious coward, as Stevenson thought, or was he actually a rational man steeped in remembered local experience?

Fatal wolf attacks were reasonably common in eighteenth-century France. Historian Jean-Marc Moriceau has documented about three thousand fatal wolf attacks in France from the late sixteenth century to the early nineteenth century, and he estimates that the true number may have been three times that. Intense and gruesome outbreaks of killing similar to that in the Gévaudan had occurred before: Moriceau estimates that in mid-eighteenth-century France there was an average of one hundred fatal wolf attacks each year.

It was illegal for peasant tenants to possess firearms. The women and children of the remote, wild, and sparsely populated Gévaudan had only their batons with which to defend themselves and their herds and flocks. They were vulnerable, but had little choice but to play their roles in the desperate family economy. They were out there on the edge of the forests protecting one of their few assets—the stock they owned or controlled—while their husbands and fathers worked in the fields, gathered wood, or walked the

roads looking for work. Sheep and cattle were precious resources: they fertilised the fields, provided milk, cheese, and cloth, and shared living quarters with the people, keeping them warm in the harsh winters of the Massif Central. These peasant families were exploited by their feudal-style landlords and benefitted least from the small grain harvests of an agriculturally marginal district. In the late spring and summer, when the fall harvest was still some months away, the migration of stock to the mountain pastures took their carers into more remote country. The women and children would have been isolated, scared, and undernourished. They were hungry—and so were the wolves.

As we walked the melancholy forest paths of the Gévaudan and contemplated our evening camp, we discussed la bête and what might be real and what might be imagined. If wolf predation was so much a part of remote rural life, then why did the attacks of the Gévaudan become a national sensation? The first attacks in the summer of 1764, however shocking, were probably accepted locally as a natural hazard. But they continued, and several factors then worked towards presenting the killings as the work of one extraordinary beast. Local superstitions about werewolves, witches, and demons were probably the least of the exacerbations. More influential, argues Smith, were the opinions and purposes of urban, educated elites: scientists, journalists, noblemen, the Bishop, and the King. Scientists were beginning to take a strong interest in natural exotica, in analysing hybrid species, and in separating real from imagined monsters. Journalists were creating a national audience for sensational stories, and printed newspapers were winning a new and broader audience. The beast went viral because of a new kind of media. And the Seven Years War had finished just the year before its appearance, leaving empty newspaper columns looking for local tales of blood and battle. Returned French veterans of that war, having tasted humiliating defeat abroad, were desperate to redeem their honour at home, and eagerly led hunting parties for an enemy they might hope to vanquish (and whose singular and legendary qualities they were keen to exaggerate).

The Bishop and the King also saw an opportunity to manipulate their pawns. The Bishop of Mende, the cathedral city of the region, called for public prayers and issued an official circular—“a masterpiece of provocation,” says Smith—invoking the beast as the wrath of God and blaming “this extraordinary *scourge*” on the spiritual waywardness of the people themselves. “A ferocious beast, unknown in our latitudes, appears all of a sudden as if miraculously, without anyone knowing from whence it came . . . it is because you have offended GOD . . . !” And King Louis XV, suffering political difficulties, saw

an opportunity to foster both fear and loyalty with his personal interest in the peasants' sufferings and his offer of a reward for the killing of "the beast." Identifying and vilifying an enemy and waging a phoney war have long been the strategies of politicians in domestic trouble.

Thus there was a *mentalité* in the 1760s where, as Smith puts it, "many could accept, and even expect, the presence of a monster." A single beast had to be found and killed; a single, extraordinary beast had to be presented to the King. But the creature proved strangely elusive, especially for the royal hunters, and so its legend grew. And when a wolf was trophied, stuffed, embalmed and taken to the royal court in Versailles, it was disappointingly normal in size . . . and soon the killings in the Gévaudan continued. It was now that the very elites who had whipped up the sense of crisis began to feel some embarrassment at inciting popular belief in a monster, and thus they began to attribute the legend to rural superstition. Meanwhile, the beleaguered peasants of the Gévaudan continued to shelter anxiously behind their portals at night.

What is intriguing about the legend of la bête is the way it emanates from a moment in Western history when we are on the brink of modernity. The *ancien régime* is tottering, the French Revolution is brewing, and the birth of the modern world is imminent. It is exactly this kind of knowing hindsight that has shaped the legend of the beast. In post-revolutionary France, the beast of the Gévaudan came to represent the traditional, rural, superstitious world from which rational modernity freed itself. The beast was the creation of ignorant peasants and credulous women, explained nineteenth and twentieth-century urban males. It was part of the world we had to leave behind to become who we are, a world where such a monster might be believed to exist. It was thus both fantastical and necessary. It was a childhood nightmare, a *rite de passage* from which adult consciousness emerged. In this way, the singularity of the beast and its legendary qualities were strengthened in storytelling even by rational moderns, and the real historical context further suppressed. There is an archaeology of forgetfulness at the heart of modernity.

That threshold over which Stevenson gazed—that defended doorway in Fouzilhac beyond which the local farmer would not step—was not, after all, a clear boundary be-

tween archaic and modern, between superstition and reason. To our post-modern sensibilities, the traditional world looks more rational than we thought and our own times more superstitious. The rural farmer at that door was unkind but rational, and the urban traveller who confronted him was dreamy and lost. In Australia in the 1980s, intelligent citizens disdained the testimony of Aboriginal people and refused to accept that a dingo could take a baby from a tent in a national park. They preferred to believe that Azaria, the name of the baby, meant “Sacrifice in the Wilderness” and that spray paint and milk under a car dashboard was infant blood. They found a monster in a Seventh Day Adventist woman who refused to cry for the television cameras. Monsters, like Stevenson’s Mr Hyde, often erupt uncontrollably from inside ourselves, and are projections of our anxieties whipped up by opinion-makers, politicians, bishops, and radio shock-jocks.

Contemporary champions of the wolf are among the latest to fuel the legend of the beast of the Gévaudan, arguing that a normal wolf could not have killed like that. Gérard Ménatory, promoter of a wolf park in the region and keen to rehabilitate the reputation of the wolf, argues from his knowledge of wolves today that the beast of the 1760s was a hyena, probably trained by a human. Another wolf advocate favours the theory of a wolf-dog hybrid also led by a sinister trainer, and another in 2004 identified the beast as a “hemicyon,” a species of dog-bear thought to have become extinct over five million years ago, but one individual of which remarkably survived until the eighteenth century in the remote Gévaudan.

A few weeks after our walk, in October 2012, the newspapers *Midi-Libre* and *La Lozère Nouvelle* reported from the town of Pont-de-Montvert the first convincing evidence that the wolf had returned, finally, to the slopes of Mont Lozère. Some footprints had been photographed, several attacks of stock had been reported, and a blurred night-time silhouette of the creature was published. It was pronounced a *scourge*—that word again! People also argued that the wolf does not just threaten lives, it threatens livelihoods, for the economy and heritage of the Cevennes depends on a history of transhumance pastoralism, on a humanised landscape and not on wild nature. But is there not a place for wild species in our lives, ask the naturalists of the Lozère?

In July, in a little village in the Velay, a horse was killed and found partly devoured. Its head and neck were especially attacked, its eyes and ears eaten. “I grew up with horses but I’ve never seen anything so horrible,” confessed a villager to *Paris-Match*. Locals

wondered: “What kind of beast could attack with such savagery? What are the thickening forests of the mountains hiding?” Last year the local mayor saw a big cat with a long tawny tail. Some think it is a puma from South America, never before seen on the European continent.

I think it is a curious and disabling dimension of our humanity that we are often simply unable to accept the power of nature. We constantly underestimate nature, and think we can control, tame, and master it, whether it be wolf or dingo, and when it takes us unawares we strive to find an extraordinary explanation rather than an ordinary one. And rather than be humble and respectful in the face of wild nature, we look to implicate humanity or circumstance in a singular explanation.

It is the same with the wild beast of the Australian forests—fire—which regularly roars out of the bush and consumes people. Our research focuses on “the beast,” on fire itself—on its physical attributes, the way it moves and consumes, and its effect on victims—but less often on the social, ecological, and historical context of its making. Rather than accepting its certain return as part of the ecological cycle of the forest, we look instead to blame an errant human—a distracted leader, a negligent power company, a sinister arsonist—for its exceptional appearance. Thus we are unprepared when, inevitably, the beast returns.

Acknowledgements: My thanks to Jay M. Smith for *Monsters of the Gévaudan* (Cambridge, MA: Harvard University Press, 2011), Jean-Marc Moriceau for *Histoire du Méchant Loup* (Paris: Fayard, 2007), Jane Carruthers for *Wildlife and Warfare* (Pietermaritzburg: University of Natal Press, 2001), and to RLS himself.



Part II:
Inside and Out Wildlife Reserves

Bernhard Gissibl

National Parks as Cosmopolitics

Like few other topics, the study of national parks and equivalent protected areas has the potential to open the writing of environmental history towards ongoing discussions over transnational and global history, the history of development and foreign aid, and the recently burgeoning studies of cosmopolitanisms in the humanities and social sciences.¹ This latter interest in actually practised and existing forms of cosmopolitanism has, however, not made much inroad into the writing of environmental history. Yet, if anything, environmentalism, conservation, and park making have been cosmopolitan projects, transnational in their constituency and composition, planetary in their commitment and consciousness, universal in their claim and ambition, and certainly convinced about the legitimacy and urgency of their mission. “Everybody,” IUCN President Martin Holdgate demanded in the context of the 1992 World Parks Congress, “should be a ‘parks person.’”²

From their origins in nationally compartmentalised movements in Europe and North America in the late nineteenth century, conservationists have self-identified as environmental citizens of the world and acted in ways that Sidney Tarrow has characterised as rooted cosmopolitanism: oriented towards the future wellbeing of planet and humankind, engaged in transnational relations and mobilities, at the same time as they drew upon the domestic resources of nation and nation-state, especially when it came to funding or political support.³ The foremost global environmental organization of the World Conservation Union (IUCN) is a case in point: it consists of a cosmopolitan institutional core composed of the council, secretariats, and a number of scientific expert commissions. At the same time, it rests upon a membership of well over a thousand organizations and governmental bodies “rooted” at the national level.

- 1 Comprehensive surveys of this field are provided by Gerard Delanty, ed., *The Routledge Handbook of Cosmopolitanism Studies* (Abingdon: Routledge, 2012), and Maria Rovisco and Magdalena Nowicka, eds., *The Ashgate Research Companion to Cosmopolitanism* (Farnham: Ashgate Publishing, 2011).
- 2 Martin W. Holdgate, “Foreword,” in *Parks for Life: Report of the IVth World Congress on National Parks and Protected Areas, 10–21 February 1992*, ed. Jeffrey A. McNeely (Gland: The World Conservation Union, 1993), v.
- 3 Sidney Tarrow, *Strangers at the Gates: Movements and States in Contentious Politics* (New York: CUP, 2012), ch. 11.

A renewed emphasis of the cosmopolitan aspects of conservationist park making could help to acknowledge the genuine moral commitment of activists to the future wellbeing of humankind and planet. These cosmopolitan intentions sometimes receive rather short shrift in political ecology studies that highlight the degree to which the self-styled David of conservation, in its engagement with the Goliath of a global capitalist economy, has itself attained hegemonic and oppressive tendencies, particularly in the Global South. Top-down infrastructural projects that they have often been, parks had and have the potential to open up rural backwaters to the world, particularly the worlds of tourism and science. Compared to other cosmopolitan projects emanating from Western societies, conservation stands out as peculiar in its enthusiastic embrace of the otherness and diversity of the non-human, its advocacy of the rights of Nature, and its insistence that species, habitats, and places far away from one's own home do actually matter. This multispecies orientation is probably the most distinctive sensitivity that conservation can import into the study of cosmopolitanisms. Vice versa, the unquestioned anthropocentrism of cosmopolitanism, its concern with human rights, and its sympathy for cultural difference and multiple identities brings out more starkly the often anti-human flipside of conservation's integration of the non-human. Indeed, conservationists always had difficulties grappling with the otherness of those humans who, for a variety of reasons, refrained from joining the community of "parks persons," who had doubts about the universal wisdom of a non-human ecology, and who perceived differently the peculiar piece of planet that the "parks people" had singled out for eternal protection.

Such tensions are inadequately captured by the terminology of "global versus local," "environmental globalization," or "global governance" that we currently employ to describe the history of park making across continents. Rather, we are confronted with the frictions arising from mainstream conservationist cosmopolitanism and the cosmopolitics of conservation or national parks. Both globalization, with its overtones of an irresistible one-directionality, and governance, as a benevolent rule-making assemblage of all involved "stakeholders," are close to the self-perception of conservationists as pursuing a progressive and essentially apolitical concern. Cosmopolitics already encapsulates the agonistic nature and the conflicting processes behind conservation governance in the term itself. As Bruno Latour and Isabelle Stengers have emphasised, the composite of cosmopolitics forges together "the strongest meaning of *cosmos* and the strongest meaning of *politics*," where the *cosmos* "protects against the

premature closure of *politics*, and *politics* against the premature closure of cosmos.”⁴ While cosmopolitanism is about attitudes and the peaceful handling of difference, cosmopolitics alerts us to the conflicts and contestations arising from the rival perceptions of the world that have been involved in the making of a “protected planet.” This common planet is not a given, but remains to be built out of the pluriverse of worlds that meet in the project of conservation.

There are many aspects of the global history of national parks that could benefit from a cosmopolitical (re-)reading. The explicit reframing of selected parks as a “heritage of mankind” and their inclusion under the governance architecture of the UNESCO World Heritage since 1972 would be one example;⁵ the series of World Parks Congresses held once a decade since 1962 another. Surely, these conferences were instances where the community of parks people developed a sense of “global” unity and mission across borders and continents. The voluminous proceedings of these meetings convey how the self-identifying group of “parks people” worldwide grew in numbers, professionalism, and cultural diversity. But the World Parks Congresses were cosmopolitical as much as they were cosmopolitan. The centenary rededication of Yellowstone National Park “to the people of the world”⁶ in the context of the 1972 World Parks Congress, for example, and the generous offer of funding and expertise for park making worldwide made particularly by the United States at their “home” congresses in 1962 and 1972 must be seen as part and parcel of the broader attempts at US Cold War environmental diplomacy. These involved the worldwide activities of the National Park Service and the Peace Corps as well as the conservationist engagement of US philanthropic foundations and USAID.⁷ Yellowstone may have served as a reference point for conservation worldwide before,⁸ but it was not until these joint efforts in the 1960s that the active and systematic export of Yellowstone as a “model” really began.

4 Bruno Latour, “Whose Cosmos, Which Cosmopolitics? Comments on the Peace Terms of Ulrich Beck,” *Common Knowledge* 10, no. 3 (2004): 450–62, 454; Isabelle Stengers, “The Cosmopolitical Proposal,” in *Making Things Public: Atmospheres of Democracy*, eds. Bruno Latour and Peter Weibel (Cambridge, MA: MIT Press, 2005), 994–1003.

5 Andrea Rehling, “Universalismen und Partikularismen im Widerstreit: Zur Genese des UNESCO-Welterbes,” in *Zeithistorische Forschungen/Studies in Contemporary History* 8, no. 3 (2011), <http://www.zeithistorische-forschungen.de/16126041-Rehling-3-2011>.

6 Hugh Elliott, “The Work Continues,” in *Second World Conference on National Parks, Yellowstone and Grand Teton National Parks, USA, September 18–27, 1972*, ed. Hugh Elliott (Lausanne: Arts Graphiques Heliographia SA, 1974), 12; “Centennial Celebration at Yellowstone,” in *ibid.*, 17.

7 See Tom Robertson, “‘This is the American Earth’: American Empire, the Cold War, and American Environmentalism,” *Diplomatic History* 32, no. 4 (2008): 561–84.

8 See the contributions in Bernhard Gissibl, Sabine Höhler, and Patrick Kupper, eds., *Civilizing Nature: National Parks in Global Historical Perspective* (Oxford, New York: Berghahn Books, 2012).

There is a third example of conservationist cosmopolitics that deserves more critical attention from environmental historians: the rooted cosmopolitanism of transnational conservation NGOs and their mediation between their social constituencies “at home” and conservation projects far away. Organizations like the WWF, Fauna & Flora International, The Nature Conservancy, or the Frankfurt Zoological Society all draw upon constituencies of members and donors in their countries of origin to support their conservationist projects overseas. Usually, they have registered charity status and they are acknowledged as do-gooders and the institutionalised green global conscience of Western societies. In order to elicit the funds supporting their work, these organizations allow their supporters to “inhabit the world from afar”⁹ by means of a highly professionalised system of fundraising, public relations, marketing communication, and handling of the mainstream media. Take the example of the Frankfurt Zoological Society (ZGF), one of the leading NGOs in international conservation and renowned for its long-term engagement in the Serengeti and the Galapagos Islands. Probably no one has done more to stimulate the emergence of a cosmopolitan environmental consciousness in West German society than the ZGF’s celebrity director Bernhard Grzimek. His media campaigns since the late 1950s have made the wildebeest and zebra of the Serengeti National Park the concern of conservationists worldwide. Still, Germany’s commitment to the Serengeti is special because it is the ZGF’s home fundraising market. Here, Serengeti shall not only not die because it is a unique savannah ecosystem but because Grzimek’s heritage and the continuation of half a century of German emotional and financial investment are equally worthy of preservation. Over the decades, the ZGF has more or less monopolised access to the Serengeti for journalists and filmmakers. For the majority of these travelling journalists it has been enough to start at the ZGF’s headquarters at Seronera and to continue by visiting carefully selected villages and speaking to an equally selected cast of sources, like the Maasai Joe Ole Kuwai. This was usually enough to make their home audiences believe that Western-style conservation was beneficial for Maasai and rural Africans at large. The recently deceased Kuwai was, however, one of the very few Maasai who was educated in Western conservation science to work for the Frankfurt Zoological Society. It hardly comes as a surprise that alternative voices, the whole world of pastoralist mobilization, and the politicization of conservationism have hardly featured in mainstream German media coverage of the Serengeti in the last decades.

9 Bronislaw Szerszynski and John Urry, “Visuality, Mobility, and the Cosmopolitan: Inhabiting the World From Afar,” *British Journal of Sociology* 57, no. 1 (2006): 113–31.

Everyone knows that public relations and marketing are not about a plurality of perspectives or the unbiased representation of the phenomena in question. Their imperative is to create consent, foster attachment, elicit donations, and present conservation as a technical problem to be fixed by management and the application of scientific expertise. The cosmopolitan concern of conservation is domesticated to appeal to specific national audiences and their experiences. NGO marketing actually shields Western publics from the complexities and paradoxes of conservation, rather than confronting them with the cosmopolitics of parks abroad and the market mechanisms of nature charity at home.

Therefore, the public relations machinery, the films, posters, journals, brochures, and press releases of transnational NGOs that feed and sustain the emotional attachment to far-distant environments should be subjected to the critical investigation of environmental historians.¹⁰ Increasing worldwide tourist mobilities notwithstanding, the familiarity of most individual donors in Western societies with national parks in the Global South remains virtual and is manufactured largely by the images and imaginaries conjured up by wildlife films, the tourist industry, and conservation NGOs. But when and how did these NGOs actually discover the need to market conservation and professionalise their PR, what strategies did they pursue, and why? What imaginaries do they mobilise, how are their representations tailored to different audiences, what virtualisms do they act upon, what attitudes do they evoke, and how did all these change over time? Which cosmopolitan mobilities did they generate, not only on the part of tourists and conservation experts, but also on the part of tour-guides and locals?¹¹

What I am suggesting is a kind of commodity chain analysis of cosmopolitan conservation, one that includes donors and their motivations, the rationales, media, and representations of transnational NGOs, the political ecology of the conservation project and the local population affected by the protected area. The Dresden-based family raising funds for the Frankfurt Zoological Society—by circulating self-made calendars with photographs from their Serengeti safari among their friends—act upon a different Serengeti than the

10 See, however, Dan Brockington, *Celebrity and the Environment: Fame, Wealth and Power in Conservation* (London: Zed Books, 2009), and William Beinart and Katie McKeown, "Wildlife Media and Representations of Africa, 1950s to the 1970s," *Environmental History* 14 (2009): 429–52.

11 On the latter, see Noel B. Salazar, "Tourism and Cosmopolitanism: A View from Below," *International Journal of Tourism Anthropology* 1, no. 1 (2010): 55–69.

Maasai pastoralist seeking to assert his rights in an ancestral landscape.¹² Attention to the commodity chain of NGO-mediated conservation could reveal that the seemingly universal project of a “protected planet” is fragmented into a pluriverse of protected areas, each of which crystallises a multiplicity of worlds that are connected, yet remain apart. By confronting the cosmopolitanism of conservationist NGOs with the cosmopolitics of conservation, environmental historians could provide the transparency to which conservationist NGOs subscribe in theory but which they often deny in practice.

So why cosmopolitics? Seen from the Serengeti, conservation in the last half century has been marked less by the ever increasing connectedness (let alone progressive teleology) suggested by globalization than by changing conservationist paradigms and legitimations and their ongoing contestation by various actors on a local level. Talking of the cosmopolitics of park making rather than the globalization or governance of protected areas could serve to inject a healthy “passing fright that scares [the] self-assurance”¹³ of practiced cosmopolitanisms. Our discipline is particularly well suited to mobilizing the cosmos against globalization, because environmental historians, unlike the social sciences of cosmopolitanism so far, have always known that the cosmos contains non-human agents who must be enlisted in the project of a common world. Above all, cosmopolitics reveals that there is no abstract globe that awaits its ever-increasing protection. Rather, we are confronted with a multiplicity of worlds whose diverse articulations need to be taken serious if conservation is to succeed in practice in the long term.

12 See *ZGF-Gorilla 2* (2013): 25.

13 Stengers, “Cosmopolitical Proposal,” 996.

Clapperton Chakanetsa Mavhunga

Seeing the National Park from Outside It: On an African Epistemology of Nature

This paper explores the concept of “nature” from the perspective of African meanings and practices that national parks or game reserves found in existence, displaced to “the other side of the fence,” and criminalised as poaching during and after the colonial moment.¹ They readily manifest themselves in the form of villagers entering the forests now designated national parks in search of firewood, mushrooms, and other wild vegetables, grasses for thatching roofs, fishing, edible *mopani* worms, and meat. These meanings are deemed poaching and anathema to biodiversity conservation. Part of the problem lies in the interpretation of these activities at face value (poaching), as a legal issue rather than one of environmental knowledge.

The aim of this paper is therefore to locate these practices within a broader spiritually grounded relationship between people, animals, forests, mountains, and the natural environment. Through a cross-reading of oral traditions, praise poems, tales, and practices handed down across generations, I propose to see “poaching” as a range of criminalised innovative practices, beliefs, and knowledge handed down and evolving from generation to generation through performance, memory, and oral transmission.² These practices govern the human-nature relations outside the park, while Western biodiversity thinking is sovereign inside the conservancy. The park and the village became neighbours under circumstances of conflict. The former was created out of the forced removal of the latter from preferred to arbitrary settlements under colonial rule in the late nineteenth and through the twentieth centuries. People might have been physically removed and resettled outside, but their hearts, spiritualities, and material yearnings never left the land that became the national park. They remained inside it, and interpreted its landscapes according to their own meanings and practices.

1 Jane Carruthers, *The Kruger National Park: A Social and Political History* (Pietermaritzburg: University of Natal Press, 1995), 89.

2 Fikret Berkes, *Sacred Ecology: Traditional Ecological Knowledge and Resource Management* (Philadelphia: Taylor and Francis, 1999), 8; Chuck Striplen and Sarah DeWeerd, “Old Science New Science: Incorporating Traditional Knowledge into Contemporary Management,” *Conservation in Practice* 3, no. 3 (2002): 20; Iain J. Davidson-Hunt and Fikret Berkes, “Changing Resource Management Paradigms, Traditional Ecological Knowledge, and Non-Timber Forest Products,” in *Forest Communities in the Third Millennium*, ed. I. Davidson-Hunt et al., 78–92 (St. Paul: USDA Forest Service, 2000).

Since colonial times, the problem with biodiversity conservation and game parks has been that it drags neighbouring African communities into the protection of the animals that were the very reason for their forced removals. Token “incentives” or “benefits,” such as a piece of meat for every elephant or buffalo bull killed by rich trophy hunters and gun rights advocates from overseas, and “participation” in conservation projects (seldom at conception, sometimes at implementation), were dangled in front of the villagers. Neither of these wholeheartedly addresses the villagers’ interests but merely extend token “incentives” to them, in order to save the animals and make a profit from those who enjoy killing a whole elephant or buffalo for its horns.

There has been much discussion globally about integrating indigenous knowledge into Western scientific methods used in environmental impact assessments, sustainable agriculture, biodiversity conservation, and medical practice.³ However, governments, NGOs, and corporate players often integrate the knowledge itself without real empowerment of its originators, or simply use it to hoodwink them into exploitative relationships. The partnership might end up being one between a rider and a horse.⁴ That is why, besides exploring the politics and sociology of the park itself from within, as Jane Carruthers, Terence Ranger, and others did, it is equally if not even more important to explore these “forests” from outside, through the lens of a villager, so that we see what these trees, animals, rocks, rivers, and being in them means.

The discussion that follows considers the meanings of nature in the traditions and trajectories of thought and practices as imagined from the village. My suggestion is that sometimes it is difficult to locate Africans in environmental history because of a lack of appreciation for the philosophies undergirding their practices. Here, the focus shall therefore be exclusively on connections, philosophy, and practice, taking the example of vaShona, the predominant cultural-linguistic group in Zimbabwe.

3 John Salleneave, “Giving TEK its Rightful Place in Environmental Impact Assessment,” *Northern Perspectives* 22, <http://www.carc.orgipubs/v22no1/know.htm>.

4 Clapperton Mavhunga, “Even a Rider and a Horse are a Partnership,” *Otyx* 41, no. 4 (2007): 441–42; C. Mavhunga and Wolfram Dressler, “On the Local Community: The Language of Disengagement?” *Conservation and Society* 5, no. 1 (2007): 44–59; Barbara Tapela, Lamson Maluleke, and Clapperton Mavhunga, “New Architecture, Old Agendas: Perspectives on Social Research in Rural Communities Neighbouring the Kruger National Park,” *Conservation and Society* 5, no. 1 (2007): 60–67.

Until the advent of Christianity in the late-nineteenth century, ancestral spirituality was the sole bedrock of life among vaShona. In their cosmovision, there were moments when the human and animal realms were divisible and rigidly enforced, and others in which humanity and animality were indivisible. The kingdom of humanity and animals had one sovereign, the *mhondoro*, who was at once a real lion, king of the forest, and the most senior ancestral spirit (*mudzimu*), a deceased chief or clan founder who after death returned in spirit to look after the living. It was the *mhondoro* and the *mhondoro* alone who could intercede between *Mwari* (god) and the living. This senior spirit manifested itself and spoke to the living via its human medium, the *svikiro* (port of arrival), growling like a lion before and between words.⁵ To see a real lion was, therefore, to see the clan spirit.

Inevitably, the human domain (the village) and the animal domain (the forest) converged upon the *mhondoro*. The most revelatory site of this convergence is the burial of a chief, which was no mere disposal of flesh but the first stage in the birth of an ancestral spirit. That process involved the convergence of lion and actual human matter. That is why among the vaUngwe, a Shona people living in the eastern Zimbabwe area of Rusape, the liquid drained from the deceased chief's mummifying body was collected and buried separately from the corpse. Out of this liquid was believed to rise a lion or *mhondoro*, hence people were forbidden from killing a lion lest it be the reincarnation of the chief. Another Shona people called the Saunyama, also in the eastern Zimbabwe area of Nyanga, believed that a lion cub "takes up its abode in the grave and there it is fed by guardians of the tomb."⁶ When sacrificing a black bull or ox to the *mhondoro*, some Shona societies left it in the open overnight. If they found the carcass gone, the spirits had accepted the sacrifice; if not even any footprints were found, they had rejected it and were not happy about something.⁷

VaShona generally believed that *mhondoro* sent certain animals to communicate with them, especially in times of danger. *Chapungu* (the bateleur eagle) was the sentinel and messenger-in-chief of the ancestral spirits. The *mhondoro* sent this bird especially when a relative was walking on the road or camping in the forest, or in wartime, to warn of impending danger or to reassure people that all was well.⁸ *Chapungu* communicated through

5 Friedrich Wilhelm Traugott Possett, *Fact and Fiction: A Short Account of the Natives of Southern Rhodesia* (Bulawayo: Government of Southern Rhodesia, 1935), 82.

6 *Ibid.*, 82.

7 *Ibid.*, 82–83.

8 Martinus Daneel, *Guerilla Snuff* (Harare: Baobab Books, 1995), 84–120.

its wing flaps, somersaults, a distinct *Kovo-o-o shriek*, or a silent, peaceful flight. The ancestors might send *kamba* the tortoise (or turtle) and *kovo* the squirrel as well. If *kamba* kept walking across the footpath or the squirrel crossed the traveller's path tail-down, the way ahead was good; if *kamba* stopped or *kovo* crossed with its tail up, danger lurked ahead and the journey was to be terminated forthwith.⁹

Witches were believed to be particularly adept at "arming mother nature,"¹⁰ even more so against enviable or hated social figures like chiefs. Among the Shona, *zvimbwanana*, or goblins, "with the shape of a human being covered sparsely with tufts of hair," were believed to imitate the voice of any human being, and whoever it struck would die.¹¹ The nocturnal witching ensemble was composed of the witch herself (for in Shona society the witch was usually a woman) with a hyena, baboon, or otter for a horse, an owl for a crown, and the plover as a sentinel leading the way ahead. There was such a thing as being armed to the teeth with nature after all.

The limbs or innards of animals wild and domestic were believed to make very potent weaponry. The bile of a crocodile was the most potent of poisons; it killed instantly. The muShangwe chief Chihunduro's political powers were owed to "the war medicine and magic tail he possessed." Chihunduro was known to use "fierce bees in a calabash" to attack his enemies.¹² Every time he was embarking on a military expedition, he "consulted the tail, which stood erect if success were in store" and lay prostrate if the campaign might result in defeat. Both powers of the tail and the bees were disarmed when his wife, given to him by his Rozvi rivals, returned to her people and disclosed her husband's secrets.¹³ This weaponization of deadly insects has resonances in African history with respect to mosquitoes and tsetse flies.¹⁴

9 Ibid., 15.

10 Jacob Darwin Hamblin, *Arming Mother Nature: The Birth of Catastrophic Environmentalism* (Oxford: Oxford University Press, 2013); Posselt, *Fact and Fiction*, 82.

11 C. Togarepi, "Kudeketera Kwomuroyi," in *Nehanda Nyakasikana: Nhorido Dzokunyikadzimu*, ed. T. Jongwe (Gweru: Mambo Press, 1983), 246

12 Posselt, *Fact and Fiction*, 141.

13 Ibid.

14 John McNeill, *Ecology and War in the Greater Caribbean, 1620–1914* (Cambridge: Cambridge University Press, 2010); Timothy Mitchell, *Rule of Experts: Egypt, Techno-Politics, Modernity* (Berkeley, CA: The University of California Press, 2002); Lansiné Kaba, "Archers, Musketeers, and Mosquitoes: The Moroccan Invasion of the Sudan and the Songhay Resistance (1591–1612)," *Journal of African History* 22 (1981): 457–75.

VaShona learned their risk management strategy from a number of animals. The skunk defended itself by covering its enemies in scent, producing a gas-dazed flight. If people ever encountered one, they had to keep it to themselves, hence the adage: *adenha chidembo ndechake* (if one angers the skunk it is his). And another: *chidembo hachivhiy-irwe pane vanhu* (a skunk is not skinned among people). The Shona knew that “what has entered once and never returned cannot be followed.” That is something that everybody who has encountered a *mhungu* (Egyptian cobra) knows all too well. Upon entering a hole, the extremely venomous snake immediately turns its head outward, ready to cover itself as the rest of its long body slithers down into the hole through sheer muscular contraction and expansion. For snakes, holes in the ground (normally abandoned clay caverns created by termites, openings between rocks, and hollows in thick tree trunks) were fortresses offering cover when fighting an enemy.

So too with lizards (*matsvinyu*, singular *dzvinyu*), as in the adage “When a lizard basks in the sun [it is because] it sees [that] a hole [is nearby].” It was this tendency of the reptile to always forage within the proximity of its refuge that left it open to interpretation along two gendered lines. First, with regards to married women, the lizard was the source of a powerful charm to pacify philandering or violent husbands. The reptile was appropriately called *chipotanemadziro* (the one that never strays far from the walls of the house); its tail was cut off while the poor thing was alive, dried, and ground into a potent *mupfuhwira* (charm) to tame a troublesome husband.¹⁵ For men, the custodians of community security against enemy attack, the lizard was a good teacher of defensive strategy; its lesson to them was never to fight the aggressor outside their stockades and pre-prepared defensive positions.

Mountains were equally weaponised. Passes, caves, and highest points were known, with ambush positions being carefully prepared in the camouflaged cliff overhangs overlooking the passes below. The caves were turned into bunkers, stashed with provisions to sustain the occupants for days. The high points were turned into sentinel positions to spot the enemy from afar. It was a common Shona practice for chiefs or kings to settle their most trusted vassals—or cowards—on strategic hilltop settlements and likely enemy approach routes to act as sentinels.¹⁶

15 Aaron C. Hodza, *Denhe Renduri neNhorimbo* (Harare: Mercury, 1980), 19.

16 Posselt, *Fact and Fiction*, 36.

The Duma and Manyika people of southeastern Zimbabwe relied not just on intervisible (mutually visible) hills and the use of smoke (by day) and bonfire (by night) but also sound. At the sighting of an enemy the sentinel immediately blew his *hwamanda* (trumpet made out of kudu horn), alerting the next one who blew his to alert the one beyond until the entire community got the message. Whereupon all men armed themselves and reported at their chief's court (if time allowed) or went straight into combat if the enemy was already nigh.¹⁷

As the able-bodied men jostled into combat positions among the hill stockades, the women, children, and elderly drove the cattle, goats, and other stock into the mountain passes or even caves. These stockades would have been prepared in peacetime with granaries of food and large pots of water in the caves to accommodate people and livestock for considerably long periods of siege. Shona security was collective security, the division of labour paramount.

The wood mouse or *mbeva* (edible in Shona societies, as opposed to the *gonzo*, the house rat) inspired this defence system. People caught mice by digging up their burrows (*mwena*), which were very circuitous, in the process educating themselves about a potential defensive system. When digging, they were taken first to the *garingiro* (sleeping area) or the bedroom of the mice where they saw the *mambuze-mbuze* (bedding) composed of fir, feathers, and other soft materials, and then the granary (*marishe*), where mice stash pilferings from the fields and forests above. From this underground store, one or more *mbudo* (escape routes) lead to the surface, showing that if Plan A (getting out through the main entrance) failed, mice always had Plan B. So the mice proceeded to *diziro*, another hole more impregnable to diggers than mice dig and close (*kutsindira*).¹⁸ Shona proverbs say that “a mouse does not dig its underground tunnels without an exit [on the other side].”¹⁹ It always seemed to have an “exit strategy.” Mice were also known for preparing well in advance of the lean months ahead, hence “a cane rat [*muduhwa*] rests only after all reeds are cut down.”²⁰

17 Richard Mahambayedwa Gwabuya Mtetwa, “A Political and Economic History of the Duma of South-Eastern Rhodesia from the Early 19th Century to 1945” (PhD thesis: University of Rhodesia, 1976); H. H. K. Bhila, “Firearms as a Factor in Manyika Politics from the Sixteenth to the Twentieth Century,” *Rhodesian History* ix (1978): 91.

18 Gerald Chikozho Mazarire, “Defence Consciousness as Way of Life: ‘The Refuge Period’ and Karanga Defence Strategies in the 19th Century,” *Zimbabwean Prehistory* 25 (2005): 10.

19 *Mbeva haicheri mwena usine mbudo*.

20 *Tsenzi inogara yatema/yadziya*.

Other animals “trained” vaShona in the art of vigilance. Having watched baboons post a sentinel on the tree-top and hill while the entire troop devoured crops in people’s fields, and having had their careful stalking of game spoiled by a warning bark from such *nharirire* (sentinel), the Shona coined a proverb: “That which has barked has said something.”²¹ Animals did not just make noise or sound—they communicated; they spoke a language to each other. They managed risk to themselves through posting sentinels and calling out warnings. The ostrich, for example, used its height to warn unsuspecting springbucks of an approaching hunter, the buck passing on the message to other animals with its snorts and dartings-about.²²

Animals also “taught” vaShona to evade their enemies through camouflage. Deception was the essence of the adage: “to laugh with the upper tooth while hiding the lower one.”²³ Indeed, “the tooth is a fool; it smiles even at its enemy.”²⁴ This camouflage was one of the chameleon’s two potent weapons, and it was immortalised in the adage: *kungwara kwervavhi kukusandura mavara* (the cleverness of chameleon to change colours [and blend in with its environment]). Thus blended in, the chameleon became invisible to its prey, got behind the fly, remained motionless, then slowly advanced, and when within reach, darted out its tongue with astonishing speed. The fly just vanished. There was no other teacher in the execution of speed and surprise in war, except perhaps the python.

Conclusions

Jane Carruthers pointed out in 1995 that the moral justification for wildlife protection ignores the exclusion of Africans, especially those at whose expense the park exists, from the parks and their uses. There, “on the other side of the fence [away] from the relatively intact protected ecosystem with its lush grassland and abundant wildlife, live impoverished communities, desperate for land and for access to natural resources.”²⁵ The approach I take here is to see innovation and not just misery on the other side of the fence, knowledge that is being criminalised when it could form a highly original and culturally embedded biodiversity. I do not mean that all vaShona philosophies and practices of

21 *Chati homu chareva*.

22 John Guille Millais, *A Breath from the Veldt* (London: Henry Sotheran, 1895), 24, 81.

23 *Kusekerera nezino repamusoro wakaruma repasi*.

24 *Zino irema, rinosekerera nemuvengi waro*.

25 Carruthers, *The Kruger National Park*, 89.

nature are consistent within the contemporary and future realities, just as I do not mean that biodiversity conservation is completely alien to Africans. On the contrary, the idea of game reserves was in place before European colonization: The chief designated when, where, and how much could be harvested from the forests. There were strict divisions between *masango* (forests), *minda* (fields), *mapani* (pastures), and *misha* (villages), each for its specific purposes. The risks of breaking such taboos were known; people seldom dared and were severely punished. These codes of conduct were designed to ensure sustainability and to provide security against catastrophe. Nature was not outside culture; as mhondoro shows, in the spiritual scheme of things, the creatures of the forest and the creatures of the village were all *Mwari's zvisikwa* (creations). The village did not end on its edges; nor did the forests.

Emily Wakild

On Being Edgy: The Potential of Parklands and Justice in the Global South

In July of 2013, Maryland Congresswoman Donna Edwards introduced legislation in the United States Congress proposing a new national park—*on the moon*. The proposal called for the protection of artefacts from the Apollo voyages in anticipation of future commercial lunar visits. Perhaps in 1995 this proposal would have been hailed as a democratic innovation, a forward-looking reflection of the “American Mind” or other conservation tropes. But in the past 20 years, the study of national parks has evolved from a conventional and institutional, perhaps even heroic enterprise to a wide-ranging set of debates over the contestations among humans in areas designated parks.¹ Certainly, modern debates over the conservation of natural resources and the allocation of the benefits of such conservation are hardly new, yet fresh critiques over the social consequences of parks have emerged among both social scientists and natural scientists.² Historians, for their part, increasingly came to question not only what was *natural* about national parks, but what was *national* about them as they arose in countries from Afghanistan to Zimbabwe. In response to this questioning a new view of parks developed, one that showed they were mired in colonial relationships, complicit in conflicts among users and dwellers, and shaped by the whims of society, markets, and science in peculiar ways. In other words, parks became places to unpack politics rather than paradises of pristine nature. Some of this critique was a product of the larger context of the cultural turn in history during the 1990s and its penetrating view that the modern world is a socially and culturally constructed place. But more emphatically, this critical approximation came from the vulnerable edges of the world in a ferocious little pink book about South Africa’s Kruger National Park.

Jane Carruthers’ *The Kruger National Park* introduced a Global South perspective to the study of conservation with a case study of a park in the southern hemisphere. This geo-

- 1 Roderick Frazier Nash, *Wilderness and the American Mind* (New Haven: Yale University Press, 1967); Ambrosio González and Víctor Manuel Sánchez L., *Los Parques Nacionales de México: Situación Actual y Problemas* (México: Instituto Mexicano de Recursos Naturales Renovables, 1961); J. Baird Callicott and Michael P. Nelson, eds., *The Great New Wilderness Debate* (Athens: University of Georgia Press, 1998); Bernhard Gissibl, Sabine Höhler, and Patrick Kupper, *Civilizing Nature: National Parks in Global Historical Perspective* (New York: Berghahn Books, 2012).
- 2 For recent provocative examples with responses, see Peter Kareiva and Michelle Marvier, “What is Conservation Science?” *BioScience* 62, no. 11 (2012): 962–69; and Michael Soule, “The ‘New Conservation’,” *Conservation Biology* 27, no. 5 (2013): 895–97.

graphical corrective broke traditional barriers by illuminating the entwining of people and a particular place over time. Shifting the centre of park history from the United States, the book introduced the idea that parks are cultural, political, and historical artefacts, not “sui generis” natural places.³ It focused attention on parks as places worthy of study themselves but also as rich “mirrors” of society. And what a place Kruger was. With characteristic clarity and sharpness, Carruthers took the reader on an expedition through San hunting and gathering, Afrikaner Nationalism, game hunting, and scientific study. Kruger National Park in particular and South Africa in general had long attracted international attention for the spectacular mammals, reptiles, and birds that supplied zoos and museums worldwide. But it was another leap altogether to historicise those species in the context of their setting within the park where they occurred endemically. This endeavour ensured that the people, landscapes, and animals of the Global South were part of the conversation about the history of conservation. It brought parks on the periphery to the centre of historical study as places of global significance.

Carruthers showed that Kruger National Park was the product of networks and interchanges that transcended national boundaries. The colonial state was prominent in these systemic forces, but Kruger National Park was also contested by people concerned with scientific investigation, sport hunting, and international tourism. These webs of knowledge that interlaced conservation policies “have not been homogenous and do not derive from a single cause.”⁴ The desire to protect certain aspects of nature came from a layering of experiences in a particular place, plus the global context and the timing of national politics.

Nationalist, colonial, and internationalist forces created mutually reinforcing experiences in this first and most famous of South Africa’s National Parks. Today we would casually call these forces “transnational” but in 1995, Carruthers revealed how collaboration among sportsmen, scientists and settlers, practical and scientific insights about wildlife and rangelands, and various degrees of public engagement from a range of political groups all shaped the history of Kruger. While *The Kruger National Park* was not an explicitly comparative history, Carruthers was clearly drawn to the question of difference. Yellowstone looms in the background, and her writings on Australia added

3 For other critiques in a similar vein, see Antonio Carlos Diegues, *O Mito Moderno da Natureza Intocada* (São Paulo, Brazil: NUPAUB-USP, 1994) and Arturo Gomez-Pompa, “La Conservación de la Biodiversidad en México: Mitos y Realidades,” *Boletín de la Sociedad Botánica de México* 63 (1999): 33–41.

4 Jane Carruthers, *The Kruger National Park* (Pietermaritzburg: Natal University Press, 1995), 6.

another comparative dimension later. But others in the international scholarly community could now use South Africa and the story of Kruger National Park to shift the norm from the Yellowstone model.

The book revealed a park deeply embedded in the society that created it, with all of society's burdensome and penetrating aspects. Kruger was a symbol, but an ambiguous one as it had different meanings for different social groups, meanings that incubated along racialised lines. Resisting the compensatory tradition of repeating heroic narratives and anecdotes, Carruthers' text sought to explain the philosophical and political milieu that created an exclusive form of nature conservation, one in which "game reserves are white inventions which elevate wildlife above humanity and which have served as instruments of dispossession and subjugation."⁵ Rather than offering a narrative of gradually democratising spaces or prescient scientists, this lesson from the Global South revealed how the inequalities of colonial experiences, including imbalances of power and public participation, shaped conservation laws that exaggerated the differences among human populations. It became impossible to see parks as neutral; too many had been used to reinforce systems of exclusion and domination (whether white over black, outsiders over locals, scientists over traditional managers, or others).⁶ This critique continues to unsettle the conservation world.

Carruthers' insight that parks affect different populations differently opened the door to understanding claims of justice and injustice as they relate to parks and the nonhuman world. Instead of judging the morality of the case, she shifted the conversation to a historical one about resource allocation and benefits. She pointed to the curious idea, found in white settlers' published accounts, that Africans were intruders and ravagers of the environment despite the abundant wildlife and stable environment supported by their lifestyles. Another contradiction—that the agricultural transformation and introduction of markets and firearms contributed rapidly to the depletion of wildlife more so than the native stewardship—further revealed the inequality embedded in the conservation idea. And yet, this domination did not always take the same form. A

5 Ibid., 101.

6 A trilogy of books in the early 2000s influenced by such a critique used this insight to revisit US parks and look at these tensions: Louis Warren, *Hunter's Game: Poachers and Conservationists in Twentieth-Century America* (New Haven: Yale University Press, 1999); Mark David Spence, *Dispossessing Wilderness: Indian Removal and the Making of the National Parks* (New York: Oxford University Press, 2000); Karl Jacoby, *Crimes against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservation* (Berkeley: University of California Press, 2003).

policy of removing African populations was amended in 1905 when reserve managers sought ways to transform settlers into rent-paying tenants and labourers.⁷ This notion that parks served many functions, among them the perpetuation of unequal power, belied the injustices committed in the name of conservation.

It must be noted that from this careful, direct, and fierce analysis emerged a critical appraisal of Kruger National Park that articulated the fluctuations of creation and management in a way that began to expand the possibilities for understanding precisely who benefited from parks and how this allocation might be adjusted. Carruthers resisted framing the problem as a choice between conservation or development, between poverty alleviation or wildlife populations. Hers was not an indictment to abandon conservation, to rework parks only to manage humans, or to evict scientists or privileged whites altogether. Unfortunately, other scholars have not been as careful.

When is the last time you read something from a social scientist that painted parks or nature conservation in positive and uncomplicated terms? Wilderness has now become “troubled,” scientists create “refugees,” and conservation is described as a brutal capitalist tool usurping sovereignty.⁸ Cumulatively, these studies distort through fragmentation and generalisation the ways conservation has changed over time, developed in culturally distinct circumstances, and influenced or mitigated larger environmental challenges. Applying social, economic, and political perspectives sharpens the polarities of the story. But there is often a sly arrogance in the implicit assumption that “real” conservation can only originate in certain places. And the bloodline trumps the achievements. Absent in such critiques is acknowledgement that the very same forces that threaten the conservation of natural spaces also threaten the conservation of indigenous cultures. By pitting the two at odds, we take our eyes off the larger picture: the forces of insatiable consumer desire without accountability, economic systems that disregard social and ecological services, and a rapaciously hungry energy regime that has no regard for either nature or culture. An overwrought pessimism has now embroiled the scholarship in a polarised debate that Carruthers’ original text eschewed.

7 Carruthers, *The Kruger National Park*, 92. The example of the Sabi Game Reserve is elaborated here.

8 William Cronon, “The Trouble with Wilderness; or, Getting Back to the Wrong Nature,” in *Uncommon Ground: Rethinking the Human Place in Nature*, ed. William Cronon (New York: W. W. Norton, 1996), 69–90; Mark Dowie, *Conservation Refugees: The Hundred-Year Conflict between Global Conservation and Native Peoples* (Cambridge, Mass: MIT Press, 2009); Dan Brockington, Rosaleen Duffy, and Jim Igoe, *Nature Unbound: Conservation, Capitalism, and the Future of Protected Areas* (London: Routledge, 2008); Emma Marris, *Rambunctious Garden* (New York: Bloomsbury, 2011).

What would we get if we reinvigorated the history of conservation with attention to other parks in other places? In South America, we would include parks like Argentina's Nahuel Huapi (first named National Park of the South), which began with a private land grant returned to the state by a nationalist explorer-naturalist in 1903. Unsure how to set up such places, the Argentine government invited US park expert Bailey Willis to consult on developing the park and then proceeded to ignore his recommendation to model the area on industrialisation occurring near Lake Michigan. The Argentines preferred the Swiss model and made choices accordingly.⁹

We would also find the coalescence of scientists from Peru, Germany, Kenya, Poland, and the US in the early 1970s forging new ways to talk about species diversity and abundance in Manu National Park. Manu exemplifies conservation in the Neotropics: it was neither the first nor the last park in the Amazon but it was Peruvian designed, recently created, and extremely remote. As the almost comical park boundary on the map shows, most of the park's limits are actually imagined: they have never been traversed by a person from Lima, Germany, or the US. Over 90 percent of the park is inaccessible because of regulation and practicality. A complicated set of historical circumstances frames the isolation of the region, including Spanish diseases five hundred years ago, nineteenth-century rubber booms and busts, and even the recent, incomprehensible violence of the Shining Path political movement that resulted in the massacre of nearly 70,000 Peruvians in the 1990s. Despite and perhaps because of this context the park and its adjacent protected areas today form a place the size of Switzerland, with fewer than 500 visitors a year and fewer than 3,000 permanent inhabitants. It is no coincidence that this remote, road-less area simultaneously retains the highest biodiversity on the planet and also the largest populations of "peoples in voluntary isolation."¹⁰

As a whole, the insertion of the Global South into environmental history, the consideration of transnational knowledge networks, and the attention to questions of injustice and inequality among humans has given Carruthers' work its edge. It has greatly contributed to the expansive possibilities of conservation history and reworked the core of what environmental historians can do. It is now almost impossible to write about conservation without caveats. *The Kruger National Park* ensures that conservation

9 Bailey Willis, "El Parque Nacional del Sud," *Boletín Dirección General de Agricultura y Defensa Agrícola*, no. 2 (1913); "La Argentina Pintoresca," *El Diario*, San Martín de los Andes, 23 December 1917.

10 Eleana Llosa Isenrich and Luis Nieto Degregori, *El Manu a través de la Historia* (Lima: Proyecto Pro Manu, 2003).

history includes local social and political history. Historians must continue to ensure conservation debates do not degenerate into false binaries. Carruthers' work provides a model for questions: it pushes historians to ask expansively not just *what* happened but *why* it happened. National Parks all have political and social histories, as Carruthers' subtitle suggests. Histories are needed to unpack not only the ways conservation has shaped local populations, but also to question why native peoples and wild animals are forced to compete for the last remaining wild spaces. Conservation should not be the sole culprit here: a sequence of overlaid changes and a range of actors must be understood. Justice is not served by erasing conservation from the landscape or conflating conservation and colonialism (or capitalism) as co-equal forces. In the Global South, the effects of transnational science and the particularities of conservation continue to merit a closer look.

And perhaps we should think about the moon, too.

Interlude

Jane Carruthers

Mandy Martin's Artistic Explorations

Environmental art engages with landscape and its biota (flora and fauna) to capture human attention through aesthetics. Adding a different perspective on the environment and providing another vital way of engaging with it, art is a powerful ally of environmental history and marks an important edge to the discipline. Environmental history aims to bring understanding to nature and culture and to probe the interstices between them. The artist can partner the historian in this enterprise.

As its name implies, environmental history focuses on geography and topography, climate, water resources, and biota, and links these to particular human histories (social, economic, cultural, or political) in terms of how they have changed over time. Environmental art can do this too. Mandy Martin, a renowned and talented Australian artist, is a leader of environmental projects that explore the benefits of interdisciplinary collaboration between the written and visual. Another artist and observer of environments who has recently been brought to scholarly attention is the nineteenth century artist-explorer Thomas Baines, who travelled extensively in Africa, and also in North Australia (1855–1857)¹. Martin's artistic philosophy echoes that of Thomas Baines:

I often adapt the model of a 19th century artist explorer working as part of a scientific exploration team, to suit modern environmental interdisciplinary projects. The artist-explorer mode informs both the subject and style of my paintings.²

Mandy Martin's art is an alliance between the aesthetic, the human, the scientific, the historical, the universal, and the specific. She probes the boundaries in environmental matters that may divide human groups such as Aboriginal and settler Australians, local and global concerns, place and space, and science and the humanities. Travelling extensively in areas of Australia that are not the usual habitat of artists, she translates abstract ideas into visually real works. In addition, she empowers others to think visually, and to appreciate and understand many different environments, and even to produce art.

1 Jane Carruthers' publications on Thomas Baines include Jane Carruthers and Lindy Stiebel, eds., *Thomas Baines: Exploring Tropical Australia, 1855 to 1857* (Canberra: National Museum of Australia Press, 2012); *The Life and Work of Thomas Baines*, with Marion Arnold (Cape Town: Fernwood Press, 1995).

2 Mandy Martin, "Interlude I: Landscape Studies 2007," in *Desert Channels: The Impulse to Conserve*, eds. Libby Robin, Chris Dickman, and Mandy Martin (Melbourne: CSIRO Publishing, 2010), 81.

Bringing an aesthetic element to environmental thinking, as Martin does, builds on strong intellectual foundations. History infuses the work, encourages the viewer to become more viscerally aware of environmental damage while encouraging an appreciation of what is special, or worth recording, about places. This concern is not with the dramatic (although it may sometimes be so, in the flooding Channel Country for instance), but with the typical and the recognizable, and the places treasured by local people. The talent in this environmental art is to transform the “ordinary” into the universal through a strong symbolic element. Such art contributes to discussions around the care and maintenance of land, incorporates imaginative metaphors, and opens avenues to understanding in a way that other disciplines cannot. The paintings convey an understanding but also a passion for ecological processes and the production of knowledge about them. It has been said that for Martin the real environment and the depicted environment are in a constant state of dialogue.³ Through her art she is able to explain the power of nature and to translate it into an accessible pictorial language that is, at once, both universal and specific.⁴

The specificity of Martin’s work includes the use of pigments and sand from the places she paints, brief journal-like descriptions written on the work relating to the time of day, the weather and the season, the name of the place or the river, and perhaps the name of a tree. Although a thoroughly modern artist who speaks to the concerns of the twenty-first century, Martin’s genealogy as a visual commentator on environments harks back to artist-explorers of the imperial era who interpreted colonial landscapes for a European audience. Often using the symbolism of the Romantic sublime that characterises Australian second-settler views, she regards herself as an artist-explorer. She has said consistently that she has painted the Australian natural, industrial, and agricultural landscapes through that lens and that it informs both the subject and the style of her paintings. However, she adapts this model of a nineteenth-century artist-explorer working as part of a scientific exploration team to suit modern environmental interdisciplinary projects.⁵ In doing so, she references Ludwig Becker, the artist who accompanied the Australian explorers Burke and Wills in their 1860 effort to reach the Gulf of Carpentaria overland from Melbourne and who died with Becker in the attempt.

3 Peter Haynes in Mandy Martin and Tom Griffiths, *Watersheds: The Paroo to the Warrego* (Mandurama, 1999), 36.

4 Peter Haynes in Mandy Martin, Jane Carruthers, Guy Fitzhardinge, Tom Griffiths, and Peter Haynes, *Inflows: The Channel Country Warrego* (Canberra, 2001), 47.

5 Mandy Martin in Robin, Dickman, and Martin, *Desert Channels*, 81.

Many artists display their work in august urban galleries. Martin's work certainly hangs in such surroundings—including even Parliament House in Canberra⁶—but she has an overt activist and social objective. One characteristic of her work is to be socially and locally inclusive. She exhibits in small local and regional galleries, frequently with her collaborating artists—often Aboriginal Australians—and she produces books that record the projects she leads and directs. Her techniques for inclusion range from art workshops that draw out the resonances between art, science, and story, to collaborations with sculpture, mapping, film, photography, and sound. While empowering her partners, she herself remains open to the meaning of all these dimensions, including the written word of the humanities and the data-collecting and conclusions of the natural sciences. As she explains, “Artistic observation may be haphazard, or just intuitive, but maybe it is not so far removed from the concerns of science itself. That slippage in human perception, the tension between *what* we see and *how* we see it, is at the heart of both art and science.”⁷ For environmental historians the challenges are very similar—how we interpret and explain our understanding of what we see or what has been recorded lies at the heart of the discipline.

6 At the time it was commissioned for the New Parliament House Committee Room in 1988, this was the largest commissioned painting in Australia.

7 Mandy Martin in Steve Morton, Mandy Martin, Kim Mahood, and John Carty, eds., *Desert Lake: Art, Science and Stories from Paruku* (Canberra: CSIRO Publishing, 2013), 183.



Part 3:
Knowing Nature

William Beinart

Bio-invasions, Biodiversity, and Biocultural Diversity: Some Problems with These Concepts for Historians

This essay grows from a book on the history of prickly pear, an American cactus, in South Africa, and it touches on Jane Carruthers' interests in the exchange of acacias between Australia and South Africa.¹ My aim is to generalise out from this case and address what is for me a central issue in contemporary environmental history and conservation debates. How do we balance biodiversity conservation on the one hand with, on the other, a recognition that species transfers have been part of dynamic production systems that have historically underpinned human civilisations and created incalculable value? Plant transfers, including some plants that are semi-invasive, are at the heart of many hybrid botanical and cultural landscapes, sometimes treasured, that are never going to be entirely reversed. A linked set of problems concerns the language and concepts we use to understand such changes. The term "plant transfers" potentially provides a different perspective from that of bio-invasion, aliens, and ecological imperialism. Our language perhaps shapes our analyses, whether we are protectionists and restorationists or happy hybridists. This debate also raises questions about the meaning of biodiversity, a concept that generally excludes human agency and influence. Can biocultural diversity be developed as a more totalising idea that is useful for historians?

I am also trying tentatively to explore different bodies of literature, which are not adequately integrated. Africanists, those concerned with subaltern groups in other continents, and those producing new work on biocultural diversity tend to privilege the interests of people, especially colonised and poorer people. Bio-invasions literature and discussions of biodiversity—as well as ecological economics, which has pioneered the increasingly powerful idea of ecosystem services and their quantification—tend to emphasise the environmental and economic costs of plant transfers. For example, maize, prickly pear, and black wattle have all been environmentally destructive of indigenous biodiversity in South Africa, but all have been particularly important plants for poor people. In the case of prickly pear and black wattle, their value has been

1 William Beinart and Luvuyo Wotshela, *Prickly Pear: The Social History of a Plant in the Eastern Cape* (Johannesburg: Wits University Press, 2011); Jane Carruthers and Libby Robin, "Taxonomic Imperialism in the Battles for *Acacia*: Identity and Science in South Africa and Australia," *Transactions of the Royal Society of South Africa* 65, no. 1 (2010): 48–64.

enhanced by their propensity to invade. Black wattle, which is now subject to the most energetic eradication campaign, has also attracted the most detailed analyses by scientists and economists. They argue that its costs in relation to water consumption far outweigh its value as a plantation crop and as a source of firewood and building materials for poor people.² But there is a counter-argument, and the calculations can be questioned.³ We also need to analyse who benefits from the water, and who from the plant. That said, black wattle may have been more valuable a few decades ago than it is now. Rural electrification and new styles of building may be reducing demand and even facilitating invasion.

One of the problems in this debate is the tendency in the ecosystems services literature to conjure very high values for indigenous biodiversity. One can see the importance of this for scholars making quantitative arguments for environmental protection in the face of global forces that prioritise exploitation. The potential of such high values is exciting in rethinking the history of natural environments and indigenous species. Was *Acacia karoo* (also worth a book) or the prized grass *Themeda triandra* more important economically as well as environmentally over the long term than diamonds in South Africa? The same question could be applied to exotics such as maize, black wattle, and prickly pear. But we should be cautious about the deployment of such large figures (for example in valuing water) in ways that might undermine livelihoods for poor people.

Few protagonists of ecosystem services consider that exotics may also play valuable roles. My limited acquaintance with this literature, in which the concept of biodiversity protection is central, suggests that it focuses on the wealth of undisturbed environments. 2010 was the International Year of Biodiversity, and in his article in *Nature*, lead author Pavan Sukhdev makes a renewed argument that ecosystem services are most beneficial to poor people—especially in relation to their access to public or common goods.⁴ He also puts bio-invasions at the heart of his discussion of degradation and environmental costs. He seems to work with a rather purist or nativist concept of biodiversity. The UNEP report, *Dead Planet Living Planet*, also focused largely on

2 M. P. de Wit, D. J. Crookes, B.W. van Wilgen, "Conflicts of Interest in Environmental Management: Estimating the Costs and Benefits of a Tree Invasion," *Biological Invasions* 3 (2001): 167–78.

3 Andreas de Neergaard et al., "Australian Wattle Species in the Drakensberg Region of South Africa – An Invasive Alien or a Natural Resource?" *Agricultural Systems* 85, no. 3 (2005): 216–33.

4 Pavan Sukhdev, "Costing the Earth," *Nature* 462, no. 7271 (2009): 277.

relatively undisturbed systems.⁵ Such concepts of biodiversity have limited spatial applicability, often lack a historical dimension, and fail to cater for the actual diversity of plant species in most inhabited regions of the world—which is most of the world. Moreover, we cannot assume that, historically-speaking, poor people favoured indigenous plants, or derived more value from them. This is almost certainly not the case for most African communities.

Michael Soule argued that “a policy of blanket opposition to exotics will become more expensive, more irrational, and finally counterproductive as the trickle becomes a flood. Only the most offensive exotics will be eliminated in the future.”⁶ We will have, he suggested, to study hybrid or recombinant ecology with reference to much of the world. Terms such as cosmopolitan or novel ecosystems, or multihorticulturalist, have also been offered as conceptualisations of plural ecologies and ecologists. Much of Britain is irredeemably hybrid. The concept of biodiversity does not preclude such an approach, but my sense is that the study of biodiversity largely veers around areas of hybridity or judges them to be degraded.

I should qualify this typically Africanist or populist view that puts people, especially poor people, and their rights to resources first. I have argued in recent publications that we should be cautious about automatically falling back on these positions.⁷ We also need to keep in mind the big picture of massive destruction to indigenous nature on a global scale; scientists cite bio-invasions as an increasingly important cause. Introduced plants can offer economic advantages for periods of time but their value can diminish because of changes in usage and technology. Perceptions and aesthetic values also change.⁸ In South Africa the American jacaranda was widely planted along city streets and valued for its shade and flowers; Pretoria was called Jacaranda City. Now the tree is cited as an invader because it can spread down sensitive water courses. The unique Cape Floral Kingdom has increasingly been championed and Table Mountain declared a World Heritage site, giving new commercial as well as scientific

5 Christian Nellemann (ed.), *Dead Planet Living Planet: Biodiversity and Ecosystem Restoration for Sustainable Development* (UNEP, 2010), http://www.unep.org/pdf/RRAEcosystems_screen.pdf.

6 Michal E. Soule, “The Onslaught of Alien Species, and Other Challenges in the Coming Decades,” *Conservation Biology* 4, no. 3 (1990): 233–39.

7 William Beinart, “African History and Environmental History,” *African Affairs* 99, no. 395 (2000): 269–302; William Beinart, Karen Brown, and Dan Gilfoyle, “Experts and Expertise in Colonial Africa Reconsidered: Science and the Interpenetration of Knowledge,” *African Affairs* 108 (2009): 413–33.

8 Peter Coates, *American Perceptions of Immigrant and Invasive Species: Strangers on the Land* (Berkeley: University of California Press, 2007).

momentum to indigenous biodiversity conservation. In this area, eradication of invasive Australian wattles, which shoulder aside fynbos, seems entirely justified.

How do we claw our way out of these dilemmas? Following Guyer and Richards, I think it is essential to introduce a social and cultural dimension into debates about biodiversity.⁹ We should develop less emotive language as well as a more flexible approach that recognises plant transfers and the impact of human culture, particularly in densely settled and agrarian areas which cover so much of the world's land surface. The term "cultural landscape" is often used to talk about settled areas, but tends to refer to managed, even manicured, environments that include buildings, rather than the more ragged landscapes characteristic of many urban and agrarian contexts. Agro-ecological diversity is another major focus, which includes crops, although this tends to be applied largely to smallholdings in which multiple species are grown and native species permitted.

The concept of biocultural diversity may be useful to get at some of these complexities. It was possibly first used in the early 1990s by Darrel Posey in connection with Latin America.¹⁰ An ethno-entomologist and an activist for indigenous people, his intention was to capture the "inextricable link between biological and cultural diversity." His motive was to champion indigenous knowledge and to argue that in key parts of the world, such as the Amazon, biodiversity could only be conserved if indigenous people were protected because of their knowledge, their skills, and their long historical experience in living in some kind of balance with nature. Protecting cultural identity would be the surest way of conserving biodiversity.

The idea was further developed in attempts to map biocultural diversity on a global scale; language was used as the main proxy for culture.¹¹ Loh and Harmon tried to quantify zones of high indigenous natural and linguistic diversity.¹² These included the Amazon, central Africa from Nigeria to Tanzania, and Southeast Asia/Papua New

9 Jane Guyer and Paul Richards, "The Invention of Biodiversity: Social Perspectives on the Management of Biological Variety in Africa," *Africa* 66, no. 1 (1996): 1–13.

10 Darrell A. Posey (ed.), *Cultural and Spiritual Values of Biodiversity* (London: United Nations Environmental Programme, 1999); Kristina Plenderleith (ed.), *Indigenous Knowledge and Ethics: A Darryl Posey Reader* (New York: Routledge, 2004).

11 Luisa Maffi, *On Biocultural Diversity: Linking Language, Knowledge and the Environment* (Washington: Smithsonian, 2001).

12 Jonathan Loh and David Harmon, "A Global Index of Biocultural Diversity," *Ecological Indicators* 5 (2005): 231–41.

Guinea. They pointed to areas of highly diverse indigenous cultures as the heartlands of global biodiversity. This wave of scholarship attempted to demonstrate that biological and cultural diversity were strongly interlinked, even constitutive of each other, although it could find no clear causal connection. Protagonists see such indexes of biocultural diversity as having both theoretical and practical implications for guiding strategic investments in biocultural diversity conservation.

Reviewing the literature in 2006, Michelle Cocks suggested that the term has largely been applied to “indigenous, traditional” people.¹³ She argues that it should be adapted further to apply more generally, so that it can cater for rapid social change and a more fluid idea of culture. Her case studies in South Africa, however, still largely cover the changing use of indigenous plants in the Eastern Cape, showing both their centrality in cultural continuity and their significance in a more commodified context—for example as part of a commercial trade in medicinal plants. She is also an activist, celebrating African plant knowledge, concerned about its possible loss and working with schools and communities through a small NGO.

I think that for historians there are even deeper problems with the concept of biocultural diversity as it is generally deployed. For example, one study suggested that the Western Cape and Western Australia, though high in plant diversity, had low cultural diversity, with only a few languages.¹⁴ In these cases, tentative attempts at mapping were ahistorical and discounted the diversity of languages before colonization—and, for that matter, the diversity of languages and culture in the present; there are certainly more than three languages spoken in Cape Town. The concept is still essentially about preserving and protecting the indigenous, whether culture or nature. Indigeneity is a problematic concept in itself and again, rather like biodiversity, this version of biocultural diversity fails to deal with environmental as well as cultural change and hybridity.

For biocultural diversity to work as a more general concept, it would need to include a more fluid notion of culture and a capacity to cater for historical change. It would need

13 Michelle Cocks, *Wild Resources and Cultural Practices in Rural and Urban Households in South Africa: Implications for Bio-cultural Diversity Conservation* (Grahamstown: Institute of Social and Economic Research, Rhodes University, 2006).

14 Larry J. Gorenflo et al., “Co-occurrence of Linguistic and Biological Diversity in Biodiversity Hotspots and High Biodiversity Wilderness Areas,” *Proceedings of the National Academy of Sciences of the United States of America* 109, no. 21 (2012): 8032–37.

to include the whole range of plants that are valued, used, or tolerated by people, as well as those that intrude themselves, whether exotic or indigenous. We need a concept in which the “agency” of natural species such as invasive plants—or at least their reproductive and survival strategies—can also be recognised in interaction with human agency and culture. We also need a more flexible concept of biodiversity. Does prickly pear increase or suppress biodiversity? It could be argued that at a national scale, South Africa’s 7,000 or more introduced plant species enhance biodiversity. At a local scale, however, where particular exotics come to dominate, they can suppress other species.

Such an approach to biocultural diversity, which implicitly accepts—and, I expect, legitimises—hybrid ecologies, does not necessarily get us off the hook concerning the protection of indigenous biodiversity. It seems to me entirely sensible to recognise distinctive biomes, characteristic of different areas, many under threat. I don’t wish to jettison a concept of environmental degradation and biodiversity loss. My approach therefore implies a strong argument for spatial differentiation and managed protected spaces. Cultural landscapes should also be acknowledged for their beauty and value—as recognised in world heritage sites—but these often have exotic vegetation.

It is an ambitious agenda to analyse and map culture and nature together and through time. Loh and Harmon write: “Biocultural diversity may be thought of as the sum total of the world’s differences, no matter what their origin. It includes biological diversity at all its levels, from genes to populations to species to ecosystems; cultural diversity in all its manifestations (including linguistic diversity), ranging from individual ideas to entire cultures; and, importantly, the interactions among all of these.”¹⁵ This is an extraordinarily ambitious agenda and is not quite what they have tried to do so far. My suggestion is also essentially a totalising approach to environmental history. Perhaps a single concept such as biocultural diversity cannot carry all of this freight and will effectively lose any incisiveness if it becomes too all-embracing. The alternative, in a way, is a more descriptive environmental history that attempts to map the complexity of change and to evaluate it both in social and natural terms. It is an approach that is more comfortable for historians, who will also disagree about the balance between human priorities and those of environmental and biodiversity conservation.

15 Loh and Harmon, “A Global Index,” 231–32.

Etienne Benson

The Biopolitics of the Border

First a story about science. In the early decades of the twentieth century, the British ornithologist Henry Eliot Howard made a remarkable discovery. In a series of books culminating in his *Territory in Bird Life* of 1920, Howard described the instinct for the possession of “territory” that he had found in warblers and other birds. The drive to claim and defend a clearly bordered portion of the landscape, he argued, was the controlling factor in the birds’ social life. Among other things, it regulated which males could breed, kept the population in balance with its resources, determined how the birds were spaced across the landscape, and explained why they sang.¹

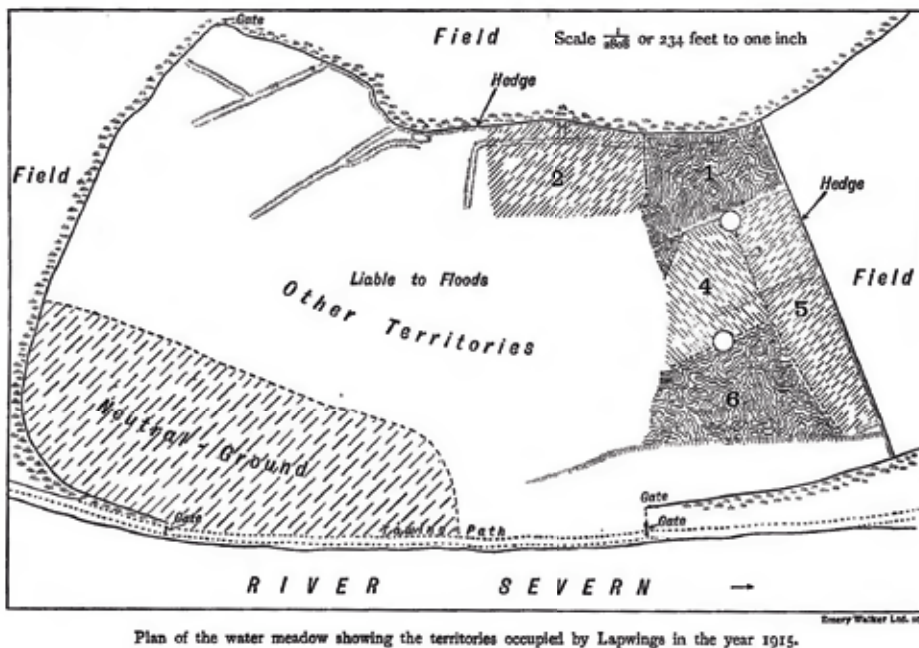


Figure 1:
A map of the territories of male lapwings near Howard's home in 1915 that hints at the importance of human territorial boundaries. H. Eliot Howard, *Territory in Bird Life* (London: John Murray, 1920), 58–59.

Howard was not the first to make such claims, but his work had an impact far beyond that of his predecessors. Beginning in the 1920s, many biologists followed his lead in

1 H. Eliot Howard, *Territory in Bird Life* (London: J. Murray, 1920).

making territoriality a central problem of ethology and animal behaviour studies. By the early 1930s, the American ornithologist Margaret Morse Nice was warning that her colleagues were “in danger of going territory-mad”; by the 1960s, the danger had spread to mammalogists, ichthyologists, entomologists, primatologists, and anthropologists. Some of the lustre of territory would fade in the 1970s as new models of evolution demoted it from a dominant factor in animal social life to just one among many strategies for maximising individual fitness, but territory and territoriality would remain critical parts of the ethologist’s conceptual toolbox.²

Now for a story about politics. According to diplomatic historian Charles Maier, a new phase in the history of the territorial nation-state began in the 1860s; indeed, it was the first major transition in the international system since the Peace of Westphalia had established the modern principle of state sovereignty in 1648. In the late nineteenth century, states dramatically intensified their control of the land within their borders with the aid of such technologies as the railroad, the telegraph, and the census. No longer satisfied merely with extracting taxes from the territories under their control, they concentrated power in national administrations and took charge of defining and defending borders, promoting economic growth, and managing populations.³

This “territorial rescaling,” as Maier calls it, reached its apogee in the 1960s with the disintegration of European empires and the rise of nationalist independence movements. From the 1970s onward, however, liberalization of trade, the emergence of powerful non-state actors, and the multiplication of mechanisms for international governance challenged the power of the sovereign state. Nonetheless, even as its dominance was called into question, the territorial nation-state remained a powerful force into the twenty-first century.⁴

The preceding narratives about science and politics have been presented as if there were no connection between them—no common border, one might say—but the coin-

2 Margaret Morse Nice, “The Theory of Territorialism and Its Development,” in *Fifty Years’ Progress of American Ornithology, 1833-1933*, eds. T.S. Palmer and Frank M. Chapman (Lancaster, PA: American Ornithological Union, 1933), 89–100, quoted in Richard W. Burkhardt, Jr., *Patterns of Behavior: Konrad Lorenz, Niko Tinbergen, and the Founding of Ethology* (Chicago: University of Chicago Press, 2005), 94.

3 Charles S. Maier, “Consigning the Twentieth Century to History: Alternative Narratives for the Modern Era,” *American Historical Review* 105, no. 3 (2000): 807–31. See also James Scott, *Seeing like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1998).

4 Saskia Sassen, *Territory, Authority, Rights: From Medieval to Global Assemblages* (Princeton, N.J.: Princeton University Press, 2006).

cidences in timing and in understandings of territory are difficult to ignore. Although biological research on animal territoriality began in earnest several decades after the beginning of the new geopolitical regime documented by Maier, both the study of biological territory and the growth of the territorial nation-state seem to have reached their peak in the 1960s and declined thereafter, or at least faced new and curiously similar challenges. They seem to be based, moreover, on a very similar model of territory. How are we to understand the resonances between such disparate fields?

Two common ways of answering this kind of question immediately suggest themselves. The first is to claim that biologists were simply projecting human concepts and biases onto the natural world. Maier relies on a version of this argument to explain the apparent resonances between ideas about force in politics and physics in the late nineteenth century; both politicians and scientists shared the “overarching spatial imagination” of their historical era. The causal arrow here runs from culture to nature. Biologists interpreted animal behaviour in terms of territories resembling those of modern nation-states because the concept was essential to the cultures of which they were a part. One can argue that Howard saw territory in bird life because he lived in a territorial nation-state, just as one can argue that Charles Darwin saw competition as natural because he was immersed in the competitive society of Victorian England.⁵

The second approach is to claim that similar concepts are used to explain human and animal behaviour because the two have common biological roots. This form of explanation has few adherents among historians, but it is popular in both academic and popular forms of evolutionary psychology and sociobiology. The causal arrow here runs from nature to culture. Proponents face the challenge of accounting for changes in territorial behaviour over historical timescales, but the challenge is not insurmountable. The concept of territoriality has been proven flexible enough to encompass the tribal hunting ground as well as the modern nation-state, the area patrolled by a troop of chimpanzees as well as the defended nest of the stickleback fish. Historical changes may occur in the expression of territoriality without calling into question the fundamental constancy of the instinct. One can therefore argue that territory was central to diplomacy and to ethology in the twentieth century because it is central to the lives of humans and many other

5 Maier, “Consigning the Twentieth Century to History,” 818; Robert M. Young, “Malthus and the Evolutionists: The Common Context of Biological and Social Theory,” *Past & Present* 43 (1969): 109–45.

kinds of animals. It simply took the flourishing of biological science in the twentieth century to make that fact clear.⁶

Different as these two forms of explanation are, they both emerge from the same matrix of modern critique; they are the flip-sides of the same critical coin. As Bruno Latour has argued, this form of critique begins by dividing the world into two parts, *nature* and *culture*. The drama of critical unmasking proceeds by showing how a phenomenon apparently belonging to one of these divisions of reality is in fact determined by the other. What appears to be the biological fact of territory in bird life is in fact the cultural interpretation of animal behaviour in terms of the human concept of territory, while what appears to be the uniquely human institution of the nation-state is in fact the result of an ecological and evolutionary process common to birds and humans. Either of these mechanisms of critique would grind to a halt without the possibility of escaping to the other side of the nature/culture divide.⁷

The debates over evolution and human nature that have gone on almost without pause since the sociobiology controversies of the 1970s—indeed, since Darwin’s time—have shown to what stalemates that dichotomy can lead. But if we refuse to base our critique on the division of reality into the natural and the cultural, what is left to say about the mysterious resonance between understandings of animal behaviour and the structure of human politics with which we started? We can no longer be satisfied with revealing that territoriality is “merely” cultural or “merely” natural, nor do I think that can we cut the Gordian knot by claiming that it is a hybrid of nature and culture or a “natureculture.” If this division is an illusion, like the visual illusions of Gestalt psychology, there is little to gain by saying that we see both a duck and a rabbit, or both a biological and a cultural component of territoriality. Such a response simply restates in the mode of ambivalence the division we are trying to do away with. To continue the visual metaphor, it fails to account for the emergence of the illusion itself or to explain why there are lines on the page in the first place.⁸

6 Robert Ardrey, *The Territorial Imperative: A Personal Inquiry into the Animal Origins of Property and Nations* (New York: Atheneum, 1966); Dale Peterson and Richard Wrangham, *Demonic Males: Apes and the Origins of Human Violence* (New York: Houghton Mifflin, 1996).

7 Bruno Latour, “Why Has Critique Run Out of Steam? From Matters of Fact to Matters of Concern,” *Critical Inquiry* 30, no. 2 (2004): 225–48.

8 Donna J. Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991).

I think a more promising approach would combine a cultural history of science with an account of biological and ecological change over time. It would show how knowledge emerges within particular socio-ecological situations, helps to transform those situations, and thereby changes the conditions for the production of further knowledge. In the case of territoriality, rather than starting with the ideas of scientists or the organization of states, such an approach might instead start with humans and animals inhabiting a landscape together, competing and sometimes cooperating over the things they need and desire. When the politicians and scientists entered the story, they would do so as actors attempting to understand and to reorder the landscape and the relationships within it according to new principles, with the politicians focusing largely on the humans in the scene and the scientists largely on the nonhumans.⁹

But it would soon become clear that even this division of labour between human and nonhuman was tenuous at best. The politicians would be constantly worrying about the productivity of cows, the contagiousness of insect-borne diseases, and other biological matters, while the biologists would be worrying about economic development programs, border controls, and other political matters. Politics would turn out to have a lot to do with nature, and biology would turn out to have a lot to do with society. Science and politics would both be contributing to a system of knowledge and power—a biopolitical system, in Michel Foucault's sense—that governed human and animal lives in space and time. In the twentieth century an especially clear example can be found in the history of national parks and other protected areas, where political and biological concepts of territory were explicitly articulated with each other, but the range of potential examples is much broader.¹⁰

Focusing on the situations in which scientists, politicians, and other animals of various kinds found themselves at particular historical moments might shed new light on Howard's work on territory and on the concept's twentieth-century trajectory through science and politics. Born in 1873 in Worcestershire in England's West Midlands region, not far from the industrial centres of Birmingham and Worcester, Howard spent much

9 Susan Pearson and Mary Weismantel, "Does the Animal Exist? Toward a Theory of Social Life with Animals," in *Beastly Natures: Animals, Humans, and the Study of History*, ed. Dorothee Brantz (Charlottesville: University of Virginia Press, 2010), 17–37.

10 Jane Carruthers, "National Parks, Civilization and Globalization," in *Civilizing Nature: National Parks in Global Historical Perspective*, eds. Bernhard Gissibl, Sabine Höhler, and Patrick Kupper (New York: Bergahn, 2012), 256–65; Michel Foucault, *Security, Territory, Population: Lectures at the Collège de France, 1977–1978* (New York: Palgrave MacMillan, 2009).

of his working life as the director of a major steelworks. As an amateur ornithologist, he carried out his observation of birds and their territories in his leisure time on the grounds around his house in the countryside near Stourport-on-Severn, while also making frequent visits to the birthplace of his wife in northwest Ireland.¹¹

Under these circumstances, it takes no stretch of the imagination to guess that Howard would have been familiar not only with birds and their habits but also with the way humans had partitioned the landscape. He would have known how legal and diplomatic borders separated towns, counties, and countries, how fences, hedges, markers, and lines on the map demarcated private property, and how customary rights sometimes bolstered and sometimes undermined legal arrangements. He would have had ideas about how these human borders affected bird life, determining what kinds of food and shelter were available as well as the number and kind of predators. He would also have had some ideas about how the presence or absence of certain kinds of animals influenced the way humans understood and used particular parts of the landscape. He would have encountered the subjects of his research within a landscape that had already been thoroughly territorialised.

That little of this situated knowledge made it into Howard's written work is a sign of the power of the disciplinary divides separating the human and natural sciences. If it had, it might have made it clear that the resonance between theories of territory in bird life and the structure of the nation-state in the twentieth century was due neither solely to biologists' projection of human traits onto animals nor solely to the common biological roots of human and nonhuman animal behaviour, though both of these certainly played a role. It was also the result of the shared situation—all at once biological, ecological, social, cultural, political, and economic—in which humans and other animals found themselves and which was the necessary precondition for the production of any kind of knowledge whatsoever.

11 Richard Burkhardt, Jr., "Howard, Henry Eliot," *Complete Dictionary of Scientific Biography*, <http://www.encyclopedia.com/doc/1G2-2830905767.html> (accessed 29 May 2013); Burkhardt, *Patterns of Behavior*, 92–98.

Saul Dubow

Adventures in Gondwana: Science in the South

Well before the modern vogue for global history, scientific thinkers and visionaries began to think in terms of vast temporal and geographical scale. The German meteorologist and geophysicist Alfred Wegener proposed the outlandish concept of continental drift around 1912, although the idea took half a century to win majority scientific support. One of Wegener's early supporters was the eminent South African geologist and archaeologist, Alex L. du Toit, whose pioneering work for the Geological Commission of the Cape Colony focused on the dry Karroo basin with its rich assemblage of geological strata and prehistoric fossils. In 1921, du Toit proposed that Gondwanaland was a unit land mass focused on the South Pole. This super-continent began to fracture around 160 million years ago to constitute the land masses of Africa, South America, India, and Australia.

In *Our Wandering Continents* (1937) du Toit sought to explain the “architecture of the globe.”¹ His book was dedicated to the memory of Alfred Wegener though in fact it modified Wegener's view of a single supercontinent, Pangea, by proposing the existence of two huge hemispheric landmasses, Laurasia in the north and Gondwana in the south. Until the early 1960s, when the theory of plate tectonics came to be widely accepted, the Wegener-du Toit theory of continental drift was “widely ridiculed at northern hemisphere major universities.”² On his death in 1948 he was hailed as perhaps “the greatest scientist that South Africa has produced.”³

The ideological as well as the scientific potential of du Toit's iconoclastic view of global geological history was immediately appreciated by the South African statesman Jan Smuts, who proved adept in harnessing science as a means to project South Africa's national ambitions on an international scale. Smuts's personal philosophy of holism proposed a cosmological view according to which all elements of knowledge (and faith) cohered. Holism helped him to conceive of South Africa, understood as a racially exclusive nation-state, and as a vital element of an expanded British commonwealth that was

- 1 Sidney H. Haughton, *Obituary Notices of Fellows of the Royal Society* 6, no. 18 (1949): 385–95.
- 2 Arthur B. Ford, “The Road to Gondwana via the SCAR Symposia,” in *Antarctica: Contributions to Global Earth Sciences*, ed. Dieter K. Fütterer et al. (Berlin: Springer, 2006), 3.
- 3 “Obituary: Alexander Logie du Toit,” *The South African Archaeological Bulletin* 3, no. 9 (1948): 14.

capacious enough to accommodate growing colonial nationalist sentiment within the developing white, Christian dominions.

In theory, the Smutsian whole was greater than the sum of its parts. But the reality of South Africa's racially divided society entailed that not all its human parts could or should be accorded equal status: Smuts's understanding of the higher unity presupposed underlying diversity. His theory of holism can therefore be seen as a conservative reading of evolutionary science that naturalised social and racial hierarchies. In its attention to the complex, adaptive interactions between organisms and their environments, holism served as an inspiration to what Peder Anker has called "imperial ecology."⁴

The Wegener hypothesis and the southern hemispheric spin brought to it by Alex du Toit fitted in well with Smuts's broad outlook. In a remarkable address delivered in 1925 on the topic of "South Africa in Science," Smuts sought to reorient scientific perspectives from north to south. Wegener's ideas provided the means to do so, while du Toit's illuminating emendations offered the key to understanding Gondwanaland. Smuts posited Africa as the southern hemisphere's "mother continent" from which South America, India, Australia, and Madagascar had subsequently split or "calved off." By placing South Africa at the centre of this "great divide" Smuts was making a case for the country's singularity as well as its universal significance. He drew deftly on evidence in fields ranging from botany, zoology, meteorology, astronomy, and paleontology to advance his case.

Smuts was particularly enamoured of the recent discovery by the Australian-born physical anatomist, Raymond Dart, of *Australopithecus africanus* (southern ape), which had just been recovered from a lime quarry at Taung in the Northern Cape. Much against prevailing scientific opinion (and mirroring northern hemisphere scepticism about Gondwanaland theories of continental drift) Dart argued that *Australopithecus africanus* was the crucial "missing link" in hominid evolution; its discovery validated Darwin's speculation that Africa was the cradle of mankind.⁵

Operating from entirely different premises to those of Smuts, but with some of the same themes in mind, Jane Carruthers has explored over the course of her distinguished

4 Peder Anker, *Imperial Ecology: Environmental Order in the British Empire, 1895-1945* (Cambridge, MA: Harvard University Press, 2001).

5 Saul Dubow, *A Commonwealth of Knowledge: Science, Sensibility and White South Africa 1820-2000* (Oxford: Oxford University Press, 2006).

academic career “what it means to be African in an increasingly transnational world.”⁶ Her approach to environmental history is ever alert to global interconnectedness. Yet, whereas some global historians tend to eschew national boundaries, Carruthers remains closely attuned to the particularities of the South African nation state as well as to the porosity of Southern Africa and its borderlands as a geopolitical region.

In her landmark study of the environmental politics of the Kruger National Park, Carruthers, like William Beinart, picked up on conservationist ideas emanating from the United States. Most her work, however, is focused on interconnections in the southern hemisphere, notably between South Africa and Australia. On account of their shared histories as white settler societies within the British empire, Australia and South Africa do indeed invite comparison. Their scientific heritages have much in common and there has been a long tradition of interchange. Intellectual influences have often moved laterally between the two countries, as well as proceeding indirectly through the mediation of the British metropole.

South-South political cooperation is today often invoked in warm terms, largely as a rejection of imperialist attitudes and northern hemisphere domination. A major new Australian-based research project on race and ethnicity in the Global South led by Warwick Anderson of Sydney University seeks to highlight intellectual complementarities and common networks. Similarities should not, however, obscure differences and tensions within the global south. The limits to cooperation are as important as the possibilities.

In their closely observed study of competing “botanical nationalisms” in South Africa and Australia, Libby Robin and Jane Carruthers have shown how the politics of botanical nomenclature divided South Africa (and Africa more generally) from Australia at successive International Botanical Congresses in Vienna (2005) and Melbourne (2011). At issue was a dispute as to whether the genus *Acacia* should be classified as an African or Australian “type.” The study by Robin and Carruthers of the institutional and intellectual politics at play provides an instructive example of the ways in which local nationalisms play out in a global context. It is amusing to discover that in 1911, on the occasion of the coronation of King George V, diplomatic and colonial nationalist sensitivities were

6 Jane Carruthers, “Tracking in Game Trails: Looking Afresh at the Politics of Eco-history in South Africa,” *Environmental History* 11, no. 4 (2006): 804–29.

aroused by the accusation that South Africa was stealing the Australian national floral emblem, namely, *its* treasured wattle (*Acacia*).⁷ The larger intellectual point made by Robin and Carruthers is that the complexities of local nationalisms, perspectives, and affinities always have to be taken account of in the comparative history of empire.

A similar point has recently been made by Bennett in his history of attempts to establish a school of forestry at Tokai, Cape Town, in 1905–6. This particular initiative was part of a number of efforts in the period leading up to and immediately following political unification in South Africa in 1910 to create viable national scientific and technical institutions. Forestry had long been a domain where inter-colonial expertise was shared. There were well established intra-imperial networks in existence. Botanical exchanges were an established feature of the British and Dutch empires. Kirstenbosch National Botanical Gardens, established in 1912, was the epitome of (Cape-inflected) South Africanism in action. Yet, whereas Kirstenbosch flourished, the attempt to create a national school of forestry at nearby Tokai foundered, largely as a consequence of intercolonial rivalries and sensitivities affecting the as yet un-unified South African state. The shared ideal of “empire forestry” as expressed in what was to be the first school of forestry in South Africa (as well as the southern hemisphere) was not fulfilled.⁸

South Africa’s relative ambivalence about Antarctic exploration offers another instance where South-South collaboration was pursued rather ineffectually. The heroic imperial age of polar exploration had already passed when Smuts, in the 1925 address mentioned above, strongly endorsed a call made by G. C. Simpson, director of the Meteorological Office, London, for international collaboration in respect of meteorological stations in the Antarctic.⁹ The Australian polar explorer, George Hubert Wilkins, also presented plans at this time for such a scheme. This would include South Africa, which had economic and strategic interests in the South Atlantic, including whaling and fisheries. There was existing support for a South African Antarctic expedition from an Austr-

7 Libby Robin and Jane Carruthers, “National Identity and International Science: The Case of *Acacia*,” *Historical Records of Australian Science* 23 (2012): 34–54; see also Jane Carruthers and Libby Robin, “Taxonomic Imperialism in the Battles for *Acacia*: Identity and Science in South Africa and Australia,” *Transactions of the Royal Society of South Africa* 65, no. 1 (2010): 48–64.

8 Brett M. Bennett, “The Rise and Demise of South Africa’s First School of Forestry,” *Environment and History* 19 (2013): 63–85. For further discussion of the regional rivalries that South African unification aroused in the scientific communities and institutions, see Dubow, *A Commonwealth of Knowledge*.

9 Jan Christiaan Smuts, “South Africa in Science,” *South African Journal of Science* 22 (1925): 14.

lian-born zoology professor at Stellenbosch University, E. J. Goddard, who couched his appeals in terms of national prestige and international, Commonwealth cooperation.¹⁰

Australian affinities with the Antarctic and with the idea of Gondwanaland, so well evoked by Tom Griffiths's appeal for a "deep-time" approach to environmental or ecological history, has thus far met with only intermittent interest in South Africa.¹¹ Although there was enthusiasm in some quarters to establish a sovereign South African "sector" in the Antarctic, southwards Smutsian expansionism was pursued lackadaisically during the interwar years. A more concerted effort by South Africa to establish a presence in the Antarctic was in fact made during the apartheid years with the establishment of weather stations on Marion and Gough Islands in 1948.¹² In 1958 South Africa officially took over a Norwegian base in the Antarctic and the following year it became one of twelve founding signatory members of the Antarctic Treaty. Minister of external affairs, Eric Louw, who aggressively defended South Africa's diplomatic interests at the United Nations at this time, spearheaded the country's claims in the Antarctic. Coming at a time when the country was experiencing growing pressures for international isolation, a visible Antarctic presence was newly attractive since it presented possibilities to prove the country's scientific and diplomatic standing in a hostile world.¹³

The more clement political environment of post-apartheid South Africa offers fresh possibilities for major international scientific collaboration. Here the record is mixed. In respect of Antarctic research, a new well-equipped polar research ship, *SA Agulhas II*, came into service in 2012. So far it has not been fully utilised. There are concerns that the country's potential to make a real impact in southern ocean research is not being fulfilled because of the government's failure to make good on highly-publicised promises.¹⁴ Rather more can be expected from the announcement in 2012 that South Africa will cooperate with Australia in another big science program, the uniquely powerful Square

10 Susanna Maria Elizabeth van der Watt, "Out in the Cold: Science and the Environment in South Africa's Involvement in the Sub-Antarctic and Antarctic in the Twentieth Century" (doctoral thesis, University of Stellenbosch, 2012), 33–5.

11 Tom Griffiths, *Slicing the Silence: Voyaging to Antarctica* (Sydney: UNSW Press, 2007), ch. 4; "Environmental History, Australian Style," *Environmental Humanities* (forthcoming, 2014), <http://environmentalhumanities.org/>.

12 Stanley P. Jackson, "Meteorology and Climatology," in *A History of Scientific Endeavour in South Africa*, ed. Alec C. Brown (Cape Town: Royal Society of South Africa, 1977), 402.

13 Klaus J. Dodds, "South Africa and the Antarctic, 1020-1960," *Polar Record* 180 (1996): 36–7.

14 Anne M. Treasure et al., "South African Research in the Southern Ocean: New Opportunities but Serious Challenges," *South African Journal of Science* 109, no. 3–4 (2013): 1–4.

Kilometre Array radio telescope, which may allow astronomers to see back to the time preceding the formation of the first stars and galaxies.

The power of the Square Kilometre Array depends on finely connected networks of collaborative knowledge. Vast sums of money were invested by South Africa and its competitors to secure a favourable outcome since winning the bid brings prestige to the countries involved. Ultimately, the decision whether to centre the €1.5 billion project in Western Australia or in South Africa's Northern Cape resulted in a Solomonian compromise whereby both countries stand to share in a "dual-site" arrangement.

This largely unanticipated solution serves as a reminder that collaborative transnational scientific enterprises are seldom free of rivalries. For all its claims to universality—and what could be more universal than a project to explore the early universe itself—science remains profoundly national and significantly competitive. This is not always sufficiently acknowledged.

In a similar vein, historians of transnational knowledge production frequently use the metaphorical language of mapping, networking, and the web to signal that ideas do not disperse outwards from a core; rather, the process is one of reciprocity and mutual influence. Words like "hybridity," "fluidity," and "interpenetration" therefore proliferate. Writers adopting such "de-centred" approaches implicitly assume that mutuality confers benefits to all and that efforts to transcend the insular boundaries of the nation state must be a good thing. It may be, in part. One of the weaknesses of global history is its tendency to "flatten" differences in the pursuit of congruence, scale, and pattern-making. Jane Carruthers does not make this mistake. She embraces historical span while remaining keenly aware of the local contexts and institutions that affect the production of environmental and scientific knowledge. This is one of the signal strengths of her approach as an environmental historian.

Libby Robin

Biography and Scientific Endeavour

I. Out of Africa

Jane Carruthers is a world leader in exploring the social history of national parks. From her “edge” in South Africa, she tells the story of the political and social struggles that resulted in South Africa’s biggest and most famous national park becoming Kruger. It was, she argues, a story of 1925 republicanism. Naming the new park after the heroic former President Kruger “was consistent with the Afrikaner view of saluting national heroes by naming monuments or institutions after them.”¹ Afrikaner support for the Kruger monument ensured the park’s success. As a monument to a particular sort of nationalism, the Kruger National Park also protected the wildlife of the Transvaal.

Through her biography of the park’s first warden, James Stevenson-Hamilton, Jane explores the folk history linking Paul Kruger with concern for the fauna of Africa. While Kruger was a famous hunter, and had declared the first state game reserve in the Transvaal “ahead of his time” in the 1880s, this was not crucial to the decision in 1925 to name the park. Rather, this history had been unearthed by Stevenson-Hamilton, some years after the park was declared.² The idea that Kruger, the great hunter, was a keen supporter of national parks was retrofitted by Stevenson-Hamilton more than a decade after the Kruger National Park was named, perhaps as a ruse to attract further support for wildlife protection.

Stevenson-Hamilton has not been alone in adopting a life history for another purpose.

II. Scientific Territoriality

In the global context of Big Science today, life histories are being used to brand another sort of territoriality, one that has nothing to do with nationalism. Well-known heroes enable global recognition: they give particular scientific groups a niche in the

1 Jane Carruthers, *The Kruger National Park: A Social and Political History* (Pietermaritzburg: University of Natal Press, 1995), 61.

2 Jane Carruthers, *Wildlife and Warfare: The Life of James Stevenson-Hamilton* (Pietermaritzburg: University of Natal Press, 2001); Carruthers, *The Kruger National Park*, 15.

highly competitive market for scientific authority and research funding.

Climate scientist William Ruddiman commented:

Hundreds of groups with shorthand acronyms for their names hold meetings every year on one or another aspect of climate. I am certain that there are now more groups with acronyms in the field of climate science than there were people when I began (forty years ago).³

Acronyms, more than individual authors' names, brand scientific territory for transnational teams with participants from several continents, who function and publish as a single unit.

Big Science has been growing since the late 1950s, when C. P. Snow declared that "scientists have the future in their bones."⁴ Interdisciplinary environmental science, supported by the IT revolution that underpins modelling and forecasting, is now far more common than science undertaken by individuals. Guided by policy directions set by UNESCO and the International Council of Scientific Unions, ICSU, and other organizations best known by their acronyms, the task of any given team is to find recognition among many competitors in order to attract authority and funding.

This new use of life history by science is perhaps part of the effort to find common languages between and across sciences. Lydia and Stephen Pyne have noted that history has proven a "great organising theme" over the era of the Great Acceleration where "even as the two cultures diverged" they seek out "common assumptions about how the world worked and how it might be understood."⁵

III. Charles Elton's Invaders and Their Biology

Charles Elton is regarded as the "father of invasion biology" by a distinct group of twenty-first century conservation biologists, whose work concerns the biology of invasive species. Ecologists Dave Richardson in South Africa, and Daniel Simberloff and

3 William Ruddiman, *Plows, Plagues and Petroleum* (Princeton: Princeton University Press, 2005), 7.

4 C. P. Snow, *The Two Cultures* (Cambridge: CUP, 1959), 6.

5 Lydia V. Pyne and Stephen J. Pyne, *The Last Lost World: Ice Ages and the Invention of the Pleistocene* (New York: Viking, 2012), 247.

Matthew Chew in North America, have all explored Elton's personal views on invasive species and written biographical studies of him.⁶ Elton's name is invoked by each in branding their own science of invasion management.

Elton's original BBC radio lectures featured explosive invasions: "An ecological explosion means the enormous increase in numbers of some kind of living organism—it may be an infectious virus like influenza . . . or a fungus like that of the potato disease, a green plant like the prickly pear, or an animal like the grey squirrel," Elton explained. "I use the word 'explosion' deliberately, because it means the bursting out from control of forces that were previously held in restraint."⁷ *The Ecology of Invasions by Animals and Plants* positioned widely-distributed animals and plants as "invaders," as distinct from autochthonous species. Invasive species imply that the ecosystem functioned differently before they arrived. Elton's lectures and his concerns about threats to "control" inspired scientific managers half a century later as they grappled with understanding changed ecosystems.

The new biographers—Chew, Simberloff, and Richardson—have each used Elton's radio broadcasts as a way of explaining invasion biology to a wider public. For Dave Richardson, who uses Elton to hark back to the "isolated islands" of 1950s ecological experiments, Elton's lectures also represent the 1950s era, the onset of a great acceleration in biodiversity loss.⁸ Biological invasions themselves have changed in character as the global population has grown 250 percent and the global economy eightfold since the 1950s. Richardson uses Elton's lectures to give invasion biology a long back story for this crucial half century of anthropogenic growth.

Peter Crowcroft's collective biography, *Elton's Ecologists*, is a history of the Bureau of Animal Population in Oxford, where Crowcroft himself trained.⁹ It tells of how Elton borrowed the word "bureau" from the United States to signal that the Oxford group's focus would

6 David M. Richardson, ed., *Fifty Years of Invasion Biology: The Legacy of Charles Elton* (New York and Oxford: Wiley-Blackwell, 2011); Matthew K. Chew, "Ending with Elton: Preludes to Invasion Biology" (unpublished thesis, Arizona State University, 2006); Daniel Simberloff, "Charles Elton: Pioneer Conservation Biologist," *Environment and History* 18 (2012): 183–202.

7 Charles Elton, *The Ecology of Invasions by Animals and Plants* (London: Methuen and Co, 1958), 15.

8 Richardson, *Fifty Years of Invasion Biology*, xiii; see also Daniel S. Simberloff and Edward O. Wilson, "Experimental Zoogeography of Islands: The Colonization of Empty Islands," *Ecology* 50, no. 2 (1969): 278–96.

9 Peter Crowcroft, *Elton's Ecologists: A History of the Bureau of Animal Population* (Chicago: University of Chicago Press, 1991).

be applied ecology in broadscale landscapes. In an era when Britain's chief employer of biologists was the Colonial Office, most of the Bureau's graduates worked abroad. Graduates like Francis Ratcliffe came to Australia in 1929 and applied Elton's approach to managing the invasive grey-headed flying fox *Pteropus poliocephalus*. This story of the flying fox—the native mega-bat whose numbers had exploded in fruit-growing districts—was one of the stories Bureau alumni offered to Elton for his later BBC lectures.

The story of invasion biology can of course be told without Elton at all. In *Ecological Imperialism*, environmental historian Alfred Crosby focused on people (Europeans) as invaders. His ecological thesis was that the expansion of Europe was such a success because of the advantages brought by their accompanying invasive biota. Crosby's language echoed Elton's as he described the “explosive” invading biological hordes that accompanied Europeans, but he did not need (or acknowledge) the ecological insights of Elton, perhaps because his focus was imperialism rather than scientific management of the European legacy.¹⁰

IV. Restoration Ecology and Aldo Leopold

Aldo Leopold's *Sand County Almanac* is a literary touchstone in discussions about the ethical treatment of nature. Eco-centric writers often cite his famous essay, “The Land Ethic,” for its attention to the importance of restoring land damaged by poor farming practices. Restoration ecologist William R. Jordan III, however, takes his inspiration from a younger Leopold who, as a newly-arrived professor of wildlife ecology at the University of Wisconsin, planned its Arboretum in 1934 in what Jordan describes as “the earliest experiment in restoration ecology in the world.”¹¹ The Arboretum was a collection of the native ecosystems of Wisconsin before agriculture. It was a reconstructed sample “of what Dane County looked like when our ancestors arrived in the 1840s,” as Leopold put it.¹² This was not merely a collection of trees, like other arboreta, but rather a collection of “plant and animal communities.”¹³ Although Jordan is enthusiastic about his Leopold lineage, “restoration ecology” was not coined in Wis-

10 Alfred Crosby, *Ecological Imperialism* (Cambridge: Cambridge University Press, 1986).

11 William R. Jordan III and George M. Lubick, *Making Nature Whole: A History of Ecological Restoration* (Washington: Island Press, 2011).

12 William R. Jordan III, “Making Nature Whole: Fifty Years of Ecosystem Reconstruction at the University of Wisconsin Arboretum,” *Papers From the 1982 Strategy Conference* (1982): 36.

13 *Ibid.*, 37.

consin until the late 1980s. While John Aber and Bill Jordan were the founders of this subdiscipline, Leopold provided its prehistory and its naming rights, and lent authority to this brand of restoration ecology.

Yet ecological restoration (if not restoration ecology) is also a practice in other places. While Jordan's work contributed to the foundation of the Society for Ecological Restoration in 1987, and was acknowledged by the journal *Restoration Ecology* in its first issue in 1993, he is not even cited in the references in the first issue of the journal *Ecological Restoration and Management*, sponsored by the Ecological Society of Australia since 2000. Today, the editors of the two journals of restoration ecology, Richard Hobbs and Tein McDonald, are Australian. Both have pragmatic restoration interests, and a style very much less philosophical and spiritual than Jordan. Australians emphasise long-term management and restoration of ecosystems, linking "the findings of scientific research and the needs and actions of on-ground managers," as Richard Hobbs puts it.¹⁴ While Leopold's Arboretum intensively collected plant communities, restoration ecology in Australia began on a broad-scale, working in production landscapes rather than abandoned farmland. Denis Saunders, Robert Lambeck, and Richard Hobbs honed their style of restoration ecology in the Western Australian wheat-belt. In the east, Ian Lunt and Peter Spooner restore pastoral country using historical documentary sources. They explicitly acknowledge human use, both Aboriginal and settler. Restoration to a "time before humans" is impossible in a place with a history of 50,000 years of fire-stick farming.¹⁵

Leopold's philosophy and his authority is influential in North America. His elegant musings have a literary quality that reaches beyond practical ecology. Leopold is a good figurehead for Jordan's particular brand of restoration ecology, but his ideas are not so applicable in other cultural contexts. "Restoration" is a place-centred philosophy for Jordan and an applied management strategy in other places. As with its sister concept, "re-

14 Richard J. Hobbs, "Repair Versus Despair: Hope and Reality in Ecological Management and Restoration," *Ecological Management and Restoration* 1, no. 1 (2000): 1–2.

15 Ian D. Lunt and Peter G. Spooner, "Using Historical Ecology to Understand Patterns of Biodiversity in Fragmented Agricultural Landscapes," *Journal of Biogeography* 32, no. 11 (2005): 1859–73. The widely accepted term "fire-stick farming" was coined by archaeologist Rhys Jones in 1969. There are early examples of small-scale restoration in Australia. Jordan himself describes a 1935 project at Lumley Park (near Ballina in northern New South Wales) as "urban restoration," but Australian urban revegetation projects (which are usually in very big cities, rather than rural villages like Ballina) seldom self-describe as "restoration ecology."

wilding,” the same word can inform very different practices. In Britain rewilding means restoring wetland by removing trees, but in the USA it may include reintroducing wild animals to fill the niches left by Pleistocene extinctions.¹⁶

V. Holling’s Resilience

Resilience science provides a rather different example of branding a discipline through a scientific “father.” In this case its Canadian progenitor, C. S. (Buzz) Holling, is still actively engaged with this new integrated science of ecology and society. The concept of resilience is defined in a foundational paper in 1973. This has subsequently been used by practitioners of resilience science to stake out territory within a broader field of environmental management.

Holling’s 1973 paper defined resilience in ecology as “a measure of the persistence of systems and of their ability to absorb change and disturbance and still maintain the same relationships between populations.”¹⁷ This paper is still widely cited for its value in differentiating Holling’s concept of resilience from others that have emerged since.¹⁸ Resilience is now a word with a popular meaning; this is both its strength and a problem for those who wish to use it to define a science. Resilience science is about ecology and its applications for society: it focuses on “SES” (social-ecological systems), which are defined in ways that ecologists recognise but that psychiatrists (who also use resilience scientifically) would not.

Resilience has now become a great panchreston of our times: it is a word that is used to speak of a complex response to change in many different contexts. Resilience science aims to be of practical use to ecological policy makers without relinquishing the scientific authority conferred by Holling’s ecological definition. Using Holling’s paper has enabled this group to guard its borders and control its membership. By publishing

16 Marcus Hall, ed., *Restoration and History: The Search for a Usable Environmental Past* (London and New York: Routledge, 2010).

17 C. S. Holling, “Resilience and Stability of Ecological Systems,” *Annual Review of Ecology and Systematics* 4 (1973): 14.

18 Li Xu and Dora Marinova, “Resilience Thinking: A Bibliometric Analysis of Socio-ecological Eesearch,” *Scientometrics* 96 (2013): 911–27. In their study of 919 publications up to 2011, this 1973 paper was cited 4,216 times, substantially more than any other paper. (The next most cited was cited 2,348 times, and number ten in the list was cited 834 times).

its own journal (*Ecology and Society*), running its own conferences, and continuing to involve Holling himself, resilience science has reinforced its technical definition of the concept and thereby successfully pioneered its own path to policy makers.¹⁹

Life stories sometimes label scientific groups to distinguish them from competitors. In the case of invasion biology, restoration ecology and resilience science, father figures provide a “prehistory” and authority to the sciences, just as Paul Kruger’s name lent authority to the idea of the national park in South Africa.

Postscript: A Heroine at Last

After all these heroes, it is time to turn to a heroine, and a rather different story of “branding.” Anyone reading this *RCC Perspectives* series is conscious of the importance of the Rachel Carson Center for Environment and Society. Here in Munich, adopting Rachel Carson’s name underscores the center’s transnational and global dimensions. Because Rachel Carson is the heroine of environmental social movements, a great writer, a humanitarian, and a fine biologist, she represents much more than science in the study of environment and society, and she speaks to the entire world.

Carson’s best known book, *Silent Spring*, had its fiftieth anniversary in 2012. Her work has spurred a half century of both environmental thinking and globalization. Biography can signify inclusiveness, rather than territoriality, and this is what Carson’s name invokes for the Rachel Carson Center. Carson is a heroine for divergent views on environmental concerns, rather than for pursuing a narrow discipline, and she is widely celebrated not just in her home country or in marine biology but as a truly international symbol of concern for the relations between people and the environment.

It is apt that this project that explores the many edges of environmental history is nurtured by Rachel Carson’s legacy. History, with its heterogeneous methods, also celebrates Carson, not to exclude but rather to draw more readers and writers into the conversation.

19 In 2008 the first Resilience conference was held in Stockholm at the Stockholm Resilience Center (<http://www.stockholmresilience.org/>) and Buzz Holling won the Volvo Environment Prize. Subsequent Resilience conferences have been held in Tempe, Arizona (2011) and Montpellier, France (2014).

Interlude

Rob Nixon

How to Read a Bridge

I

I grew up in South Africa, our planet's most inequitable society, and immigrated to the USA, the rich world's most unequal one, a country in which 400 individuals have half the nation's assets. For 15 years I lived in the most economically divided of America's major cities, New York, where 70 billionaires reside and 30 percent of children languish in poverty. If New York City were a nation it would rank 119th in terms of the Gini coefficient, the standard measure of economic disparity.

II

I'm reading an article on South Africa's fitful progress since the turn to democracy. From the available economic data, the journalist has created a fictional average South African: she is twenty-five, currently employed, and an urban renter. Her shared home has basic amenities: erratic electricity, a flushing toilet, and indoor plumbing but no internet. The journalist has named this average South African "Thuli."

In the comment section, someone writes: "Yes, her name is Thuli. She has a life partner. Her life partner's name is Gini."

III

In most societies, inequality of resources is increasing. Economic gaps are becoming economic chasms. Social mobility is slowing: in the US, a child born into poverty now has a 42 percent chance of remaining there. As the path from poverty to the middle classes is lengthening, so the path from poverty to destitution is shortening.

IV

When a society fractures—when the rickety bridge linking the über-rich and ultra-poor collapses—social cohesion collapses too. Civic trust erodes. Dissociative thinking and dissociative planning become pervasive: just disconnect the dots.

But our age of disparity is boom time for what urban planners call defensible architecture. Tunde Agbola names this "the architecture of fear." In Mumbai, Los Angeles,

Mexico City, Lagos, Johannesburg, Jakarta, Sao Paolo, Madrid, Shanghai, and beyond, clients clamour for up-to-the-minute fortress design, fresh ways to wall off, as elegantly as possible, the possessors from the dispossessed. When the tasteful architecture of exclusion fails to deliver the message, the private security detail is there to back it up. In our megacities, defensible architecture rises alongside indefensible inequities.

V

Inequality is, among other things, an infrastructural story. Dreams of society-wide public services—services as government obligation, as source of civic pride—fade as utilities are outsourced to private firms that institute for profit, pay-as-you-go user access only. The idea of the customer trumps the idea of the citizen. Infrastructure, outside select areas, is left to moulder and disintegrate, if it ever arrived in the first place.

VI

Such thoughts are on my mind as I venture from the American heartland to South Africa's Eastern Cape, one of that country's poorest provinces. I fly into Port Elizabeth, the provincial town where I grew up, now a sprawling city of several million. In scale and name, the city is unrecognisable. Back then, our family lived beside the airport that my plane now approaches; back then, in apartheid's heyday, it was called the H. F. Verwoerd Airport—akin to touching down, in other lands, at the Adolf Hitler or Josef Stalin Airport. Now a sign welcomes visitors to the Nelson Mandela Metropolitan Airport.

VII

Despite this symbolic turnaround, anything approaching equality remains elusive here. When I try to swing by my childhood home, an aggressive police presence and billowing black smoke obscure the road. My nostrils burn, my stomach heaves against the acrid flavours of scorched rubber. From the radio I learn that Walmer Township is on the march, burning piled tyres in a service delivery protest, one of thousands of such protests that convulse South Africa each year.

“Service delivery”: South African English would be unthinkable—the syntax could barely hold together—without that pervasive, adhesive phrase which speaks to post-apartheid disparities, feelings of abandonment and betrayal by people the state treats as disposable or, in the old apartheid argot, surplus to requirements.

VIII

Here in Port Elizabeth, the tyre-burning destitute are making their needs known. The state must deliver: electricity, drinkable piped water, useable roads, a sewage system that's better than pit toilets, schools with desks and without broken windows, functioning hospitals, all the services that say "you too belong."

What do we want? Service delivery. When do we want it? Now.

Voices through the smoke, in Xhosa and English, voices of the new surplus people, urban invisibles, writing their names in fire.

IX

"Service delivery failures": the phrasing may be peculiarly South African, but the phenomenon—and the popular response—reverberates across the planet, particularly the Global South: Brazil, India, Nigeria, Kenya, Indonesia, Pakistan, Bangladesh, Turkey, Egypt, Tunisia, Chile, Mexico, Argentina. The politics of structural exclusion travels across the south of the North as well: Greece, Italy, Cyprus, Spain.

In 2012, 55,000 environmental protests shook China alone—protests in which the environmental component was inseparable from public health concerns and service delivery failures. Amidst surging Chinese growth, too many are left to feed on globalization's fumes.

X

Traveling northeast up the coast from Port Elizabeth, I cross one estuary bridge after another. I stop for lunch at the Great Fish River Bridge: from above, the view is spectacular, as the river prises apart the dunes and enters the Indian Ocean.

On impulse, I take a gravel road that ducks beneath the bridge deck. Down here, there's no panoramic option; instead I find myself staring up at the undergirding, 20 metres above my head. To my surprise, the bridge is alive with foliage: in the gaps between the concrete slabs strangler figs have inserted themselves, one after another, creating an interrupted forest. Their roots follow the grooves from one side of the bridge to the other, while the leaves and branches, in various stages of maturity, billow forth beyond the edges.

Each of these horizontal canopies ends in a cluster of finely woven, kidney-shaped nests that I recognise as the handiwork of village weavers, sociable birds with black masks, red eyes, and bodies the kind of yellow that every yellow secretly yearns to be.

XI

It's winter now and the birds are gone, but the scene feels animated nonetheless: a crossroads between human and nonhuman civil engineering.

The strangler figs and the weaverbirds are opportunistic colonists; they have collective designs upon the bridge. They're wedged in where design meets chance. Design: that double-edged word that suggests both structure and intent.

But the bridge is active too. It's built to give: gaps between the slabs allow the metal and concrete to shift with the shifting temperatures, expanding and contracting, from day to night, from summer to winter, moving all the time. To survive, every bridge must breathe.

A laden lorry drives overhead: the concrete creaks; the fig trees shudder; the weaver nests start bobbing. Vibrant matter indeed.

XII

“But the strangler fig/arrives in shit”: Jeffrey Thomson, “Landscape with Fig Trees and Strangulation.”

XIII

A bird drops a fig seed, sheathed in shit that lodges in one of the bridge's infrastructural apertures. In that sheltering gap, a tree starts to swell, attracting to its greenery seed-eating, seed-expelling birds in search of seasonal housing.

The weaver birds' primary predator—the boomslang (tree snake)—cannot scale the smooth columns of the bridge. To drop down on to the nests, the boomslang would have to hazard the traffic overhead. This is fortress architecture, avian style.

XIV

Construction is more glamorous than maintenance. Politicians gain kudos from erecting structures that gleam with novelty, but gain little from the quotidian business of unspectacular upkeep. Maintenance is well-nigh invisible until the moment of collapse.

But neglect is political—it's unevenly distributed. The strangler figs and weaver bird, as they slowly pick apart this bridge, receive a boost to their life chances from the infrastructural neglect that is intertwined with rural misery.

XV

The socioenvironmental scene that undergirds the bridge—this extra chapter from the botany of desire—begins to resonate theoretically. The parallel paths assumed by animal studies and environmental justice studies have long troubled me. Animal studies scholars are often too quick to bracket the Human as a unitary force, are too indifferent to the history and politics of human disparities. By contrast, environmental justice scholars specialise in exposing inequalities, but often neglect the weave between human and more-than-human powers—animal, botanical, geological, and physical in the broadest sense. Injustices shape and shake our world, but so do those non-human forces that Kennedy Warne has dubbed nature's "ecosystem engineers."

XVI

Few scholars have worked as assiduously as Jane Carruthers to think across these divides. Her work arises from a strong tradition of African historiography attentive to power and justice. Yet she has taken that tradition further, bringing to the fore questions of environmental equity. In so doing, she has avoided both the pitfall of presenting the Human as a unitary environmental force and the opposite danger of overlooking non-human actors with impulses, behaviours, and ecological effects of their own. Whether addressing invasion biology, botanical politics, colonial game park creation, wildlife and warfare, or the long history of elephant hunting, conservation, and behavioural research, Carruthers is alive to the steep power gradients that separate diverse human environmental actors. But she is equally alive to the sentience and dynamism of non-human forces.

XVII

In the spirit of Carruthers's historical commitments, I don't want the Great Fish River Bridge to float off into the conceptual stratosphere. This built environment, engineered by multiple forces, is a concrete scene with a material history. The bridge leads from somewhere to somewhere. The character and history of those somewheres remain particular.

Historically, this bridge has served to separate.

XVIII

I cross over the Great Fish River and enter a land worn thin from overuse. I am now in the erstwhile Ciskei, one of South Africa's 10 former Bantustans. From the 1960s through the 1980s, some 3.5 million black South Africans suffered forced relocation, mostly to places like this shambolic "ethnic homeland." When Ciskei was declared independent in 1981, with the stroke of a pen two million people were stripped of South African citizenship. Without elusive, temporary labour permits, they were barred from entering the country of their birth.

"If our policy is taken to its logical conclusion as far as the black people are concerned, there will be not one black man with South African citizenship": Connie Mulder, Minister of Plural Relations and Development, 7 February 1978.

XXIX

Even Xhosas who had lived for three or four generations in cities were decreed to be natives of this Ciskei they'd never seen. Black peasant farmers in fertile areas rezoned for whites were visited at 2am, 3am and carted off in GG (Government Garage) trucks. Then dumped here: discarded people.

XX

Things are and aren't different now. Ciskei is officially no more: that derided figment of apartheid social engineering has evaporated. The people here, liberated from involuntary citizenship, are South Africans again, free to move, free to vote.

But the economic divisions and ecological scars run deep. Traveling through the Ciskei still feels like a journey through the development of underdevelopment. This place

remains shadowed by its past: this vast, overcrowded rural slum, where the margins of survival remain small.

South African wealth—old white wealth and the new wealth of black Johannesburg plutocrats—belongs to some other, far off country. Unemployment, ecological exhaustion, corruption, and infrastructural abandonment compound the cycles of rural poverty. These free South Africans are citizens both of a neo-liberal present and a very heavy history, which together cement inequity.

XXI

Maano Ramutsindela has written of the ex-Bantustans as “resilient geographies.” Resilient is a complex word: here it suggests a tenacious survival, a refusal to go away. Far from vanishing through democratic assimilation, the Ciskei has been reinforced as a marginalised ethnic space by rural indigence and by popular disillusionment with resources skewed toward an urban, cosmopolitan elite.

XXII

For two weeks I meander through the former Ciskei and the Transkei that lies beyond. A jagged landscape of unforgiving hills, thin goats, and high-density human destitution. Here a tree is an event: most have been felled for fuel.

Somewhere between Kentani and Nxaxo River Mouth, I pass a woman shuffling bare-foot up a formidably steep gravel road. She’s elderly and edges forward in small, methodical steps, leaning into the three-sided cage of her aluminium Zimmer frame. But her neck remains erect: on her head she balances a white plastic 10 litre paint bucket filled with water that sways ever so slightly as she moves.

I reverse and we ride the next six kilometres together. Between her halting English and my residual Xhosa we piece together a conversation. Most of the men, she explains have gone searching for jobs in the city. She has great-grandchildren she is looking after. No, there is plenty of water here, but it’s way down there in the valleys. She and her paint bucket undertake this trek for water every second day.

We need a stronger phrase than service delivery failure.

XXIII

On the return trip back down the coast, I cross the Great Fish River Bridge close to midnight. In the darkness, I hear trucks changing gears up the pass, like those GG lorries that once ferried human cargo across the Bantustan border in the dead of night. Ghost trucks taking people to a home they had never known and did not want, people first made homeless at gunpoint and then, at gunpoint, told, this place, hundreds of kilometres away, this is your homeland.

Apartheid may be gone, but here, the bridge above, the river between, still mark a separate development.

XXIV

Flying back across the Atlantic, I revisit *The Death of Distance*, the bestseller by Frances Cairncross. When it appeared in 1997 Cairncross was hailed as a visionary who foresaw an ever more integrated humanity: together, digital technology and globalization would keep shrinking our world, rendering distance obsolete. But deep into the twenty-first century things seem a lot more contradictory: technological connectedness may be rising, but so too is economic rupture. The title of Timothy Noah's 2012 bestseller puts the matter bluntly: most human societies are being torn apart by *The Great Divergence*. In the austere year of 2011, the world's mega-rich had stashed \$13 trillion in offshore accounts—equal, in scale, to the American and Japanese economies combined.

XXV

As I write, another plutocrat takes to the air in his golden parachute, soaring above the planet of the slums.

XXVI

In a 2013 report on the global distributional crisis, Oxfam concludes that extreme wealth is “economically inefficient, politically corrosive, socially divisive.” But the distance between parachute and favela is imaginatively vexing as well. Distance intensifies the need for inventive testimony, for finding new ways to bear witness across the divide separating people whose lives feature in bright stories of growth and innovation and the disposable people who inhabit neoliberal globalization's vast shadowlands.

Arundhati Roy sees globalization like this: as “a light which shines brighter and brighter on a few people and the rest are in darkness, wiped out. They simply can’t be seen. Once you get used to not seeing something, then, slowly, it’s no longer possible to see it.”

XXVIII

From America, I email a government minister in Bhisho, once the Ciskei capital, now the provincial capital of the Eastern Cape. I explain that the Great Fish River Bridge is being subjected to a colonial takeover: someone should remove those strangler figs. I don’t hear back, nor do I expect to.

In truth, I have no idea whether intervening in that tangle of infrastructural neglect and environmental reengineering would fortify this complex bridge or hasten its collapse.



Part 4:
Environmental Injustice and
the Promise of History

Lise Sedrez

Constructing and De-constructing Communities: Tales of Urban Injustice and Resistance in Brazil and South Africa

In the 1950s and 1960s the community of Lady Selborne, a township near Pretoria, South Africa, was destroyed by the Group Areas Act, a piece of legislation within the apartheid regime. Mixed groups had lived there since it was created in 1905, an urban community reclaimed from marshes and floodplains. A series of government-sponsored initiatives scattered its residents according to their “ethnicity” and forcibly removed them to a variety of remote homelands. Jane Carruthers gives us the story of the creation and destruction of Lady Selborne in a poignant narrative, describing the vivacity and the resistance of the community.¹

On the other side of the Atlantic, Rio de Janeiro’s government was also busy with social engineering or, more exactly, with the remaking of communities according to a concept of ideal urban space as held by the administration. It was not an apartheid regime; ethnicity had little to do with it—at least at first sight. But with around 40 percent of the urban population of Rio de Janeiro living in favelas or precarious housing, most of them Afro-Brazilians, the local administration embraced slum removal with enthusiasm. It was a common enough policy for Latin America in the 1960s, as Mike Davis reminds us.² Some of the favelas were in prime real estate areas, such as the *Favela da Praia do Pinto* (Pinto Beach slum), near the world-famous Ipanema beach. While the government did build new communities for the displaced population, rumours circulated about mysterious fires, intimidation, and even body disposal in the waters of the nearby rivers whenever the enticement of property titles in another location was not enough. While the rumours were never proven, there was little actual investigation of government actions after the 1964 military coup and the takeover of Brazil by a dictatorship.

So it was not surprising that when a large flood swamped Rio de Janeiro in 1966, government planners seized the opportunity to remove large chunks of the poor population from the favelas in the hills or in the riskier areas to the newly built (and not yet quite

1 Jane Carruthers, “Urban Land Claims in South Africa: The Case of Lady Selborne Township, Pretoria, Gauteng,” *African Historical Review* 32, no. 1 (2000): 23–41.

2 Mike Davis, *Planet of Slums* (New York: Verso, 2006).

habitable) neighbourhood of *Cidade de Deus*—City of God. The housing project had been planned to promote the development of the western borders of the city. The future residents would provide labour for a middle-upper class neighbourhood about 10 miles away (which at that point existed only in the minds of land speculators and real estate visionaries), serving as maids, construction workers, doormen, gardeners, and so on. The 1966 flood, however, changed the schedule. The rains had caused landslides in the hills where the poorest population lived in makeshift shacks. The final toll of the flood was over two hundred people dead and thousands without shelter. It was a traumatic event for the city—but it was also an occasion on which Rio's administrators used the so-called natural disaster to attempt some social engineering of their own with the population of the favelas. The heavy rains are a feature of the tropical region of Rio de Janeiro, and really nothing new. However, social inequality, the lack of responsible housing policies, the rural exodus, and the rampant urbanization that characterised the mid-twentieth century in Latin America turned what was simply a rainy season (occasionally inconvenient at most) into periodical catastrophes. Removing the affected population seemed to be the easiest solution.

In the following year, 1967, a new large flood struck Rio de Janeiro. The system of transferring part of the favela population to City of God had worked well the previous year and it was repeated in 1967. It established a pattern. Floods in the following three decades would also bring new waves of displaced communities to City of God. They also created waves of growth in the area: there were those who had arrived with the 1967 rains, and those of the 1978 rains, and then again those of the 1988 rains. It was not only the community that changed with each flood but the landscape as well. Eventually the neighbourhood reproduced many of the central city's vices. There was social and gender inequality within City of God, there was drug use and drug trafficking, and there was a predatory relation with that new landscape, which was quite foreign for most of the residents born and raised in the streets of Rio. Located at the border of the rural and urban, the region was surrounded by three rivers and a fair amount of wildlife. When the first families arrived there, mothers feared their children would drown—while the kids delighted in swimming and fishing near their homes. Five years later the rivers were completely contaminated; mothers no longer feared drowning, but waterborne diseases. After 10 years, little of the original fauna could be found there (with the exception of the resistant caimans), and after 20 years City of God itself was a flood-stricken area, the river beds and margins having succumbed to uncontrolled garbage disposal and lack

of water treatment. In 2014, with almost forty thousand residents, City of God is one of the most contaminated areas in Rio de Janeiro City and has one of the lowest Human Development Index scores of the region.

Putting Lady Selborne and City of God side by side, we can see that on one side is the destruction of a community while on the other is the construction of a new community. Yet the two cases may display many similarities (besides romantic names). We may find crucial insights on urban history, and new ways to look at urban injustice.

The first shared insight from these two narratives is that injustice may be legal, and popular among certain influential groups, and is often connected to the actions of the state. Lady Selborne survived several interpretations of apartheid laws, slipping through one loophole after another, until it was eventually included in the new interpretation of the Group Acts—with the full support of the National Party. City of God was part of a policy of slum clearing, official state policy supported by the righteous people of Rio de Janeiro, who were concerned with the encroaching of favelas into the hills and into areas with significant real estate value. The death toll of the 1966 flood gave this policy a moral legitimization in their eyes—but in essence, it was simply a policy of removing people from visible and valuable areas without investing in housing or equality strategies.

The second commonality concerns inequality—both legal and social inequality. In both cases the communities were poor, vulnerable, and had the least access to state resources. Their residents were either of the wrong colour (or ethnicity) or they lacked the knowledge and financial resources to access the law. In the Rio case, the technical assessment of risk and the scientific language in which it was formulated were also beyond the understanding of this population, and the information provided was biased in favour of the state's plans. It does not follow that these risk assessments were untrue. However, a fair number of wealthy houses in Rio were also in high-risk areas and illegally occupied public lands—yet these wealthy owners were not harassed. The key factor was that these poor areas did not fit into an idea of the city, just like a coloured, mixed community surrounded by white areas was anathema for a state that thought in terms of Group Area Acts.

But what is more instructive in both cases is the action instigated by the communities. Carruthers tells us how the Lady Selborne township fought against legally-enforced re-

removal from the start, and how this made it an important centre for opposition to apartheid restrictions and laws in general. In the case of City of God, resistance was more subtle. Dumped into a remote area with little infrastructure and even fewer public services, far away from their workplaces and with few transport options, many new residents simply left and went back to their slums after the 1966 flood. Others tried to reinvent their previous communities. A keen game of identification and labelling went on in social gatherings or simply in the common spaces of coexistence such as schools and markets, a game in which the experience of women was particularly important. Women asked each other who was from which favela and who had lived where. In so doing, they sought to recreate social networks. Other women created new networks, bonding over the experience of surviving the flood. Families abandoned the houses the government had put them in and took possession of others' houses in areas that were more congenial to their vision of community. Making sense out of common experiences was also a fundamental strategy for creating these networks, and every new wave of residents was aware of it. For instance, new residents named sections of City of God after their former communities: Rocinha Two was created by former residents of the larger slum Rocinha, removed to City of God after a flood in 1980. City of God may have begun as disposal area for flood victims but soon the residents forged their own history, which was, for better or worse, quite different from what city politicians had imagined. It has a clear identity, an active neighbourhood association, and it has carved its own place in the history of the city of Rio de Janeiro.

Neither narrative has a happy ending. Lady Selborne was finally lost as a community, and while there is talk of reparations for the injustice done, compensation does not turn back the clock. City of God still grapples with the same inequality in which it was originally founded. It is now infamous as one of the most violent areas of the city, as the movie of the same name highlighted—although there are reasons for cautious optimism.³ But perhaps, as historians, we can revisit the past and acknowledge its injustices, amassing support for a new struggle. We can honour those voices and their strategies for survival in tough times. Perhaps studying their memories and how they construed their relationship with the urban space is the best way we have to examine ongoing and historical urban injustice.

3 Else R. P. Vieira and Fernando Meirelles, *City of God in Several Voices: Brazilian Social Cinema as Action* (New York: Critical, Cultural and Communications Press, 2005).

Bron Taylor

Dangerous Territory: The Contested Space Between Imperial Conservation and Environmental Justice

There are many ways to design a conservation area. Ideally, environmental scientists and managers demarcate such areas using conservation biology models, where ecologically-important core areas are connected by natural corridors, and these core areas and corridors are surrounded by buffer zones that allow more intensive human use than do the cores.¹ Surrounding these are more densely populated areas that enjoy no special protection. This ideal is rarely realised, however, because most protected areas were established before this model had been developed.

Protected areas are demarcated not only by *physical boundaries* but by differing, and sometimes incompatible, *perceptions*.

For some, protected areas are the remnant of a commons (or represent a restored commons), lost as agriculture, enclosures, and private property regimes spread. Protected areas may also be expressions of democracy and spaces of social equality. John Muir famously went further, consecrating such places as sacred.² Perceptions of what constitutes the sacred, however, vary widely. Such places can be understood, for example, as abodes of ancestors, essential pathways for communication or communion with the divinity or with divine beings, or they can be considered refuges for endangered species that are perceived to be so precious that, implicitly or explicitly, they and the habitats upon which they depend assume a numinous character.³

For others (perhaps especially for scholars engaged in postmodern and postcolonial criticism), conservation areas have been expropriated by imperial peoples for their exclusive economic benefit. Moreover, and what is worse, according to such views the

1 See, for example, Reed F. Noss and Allen Y. Cooperrider, *Saving Nature's Legacy: Protecting and Restoring Biodiversity* (Washington, DC: Island Press, 1994).

2 Donald Worster, *A Passion for Nature: the Life of John Muir* (Oxford & New York: Oxford University Press, 2008), 9–10, 465; Bron Taylor, "Resacralizing Earth: Pagan Environmentalism and the Restoration of Turtle Island," in *American Sacred Space*, eds. David Chidester and Edward T. Linenthal (Bloomington: Indiana University Press, 1995), 97–151.

3 *The Encyclopedia of Religion and Nature*, ed. Bron Taylor (London: Continuum International, 2005), Vol. 2, 1444–62.

deracination of the original peoples from these places has been legitimated through appeals to either the “natural” superiority of the thieves, or even through appeal to some supposedly universal ideal, such as the dependence of all people on such places for their physical, emotional, aesthetic, spiritual, and moral development and well-being. In this reading, protected areas were birthed in injustice and are maintained by deceit. With such perception protected areas may even be desecrated places, defiled by the presence and practices of those who usurped the land and destroyed the cultures that knew better how to be in proper relationship with it.⁴

The first cluster of perceptions about protected areas I will label *the romantic narrative*, for it has an affinity with a longstanding tradition of felt loss and longing for biologically intact and diverse ecosystems prevalent before the expansion of agro-industrial societies. The second cluster of perceptions I will label the critical narrative for its tendency to reject *the romantic narrative*, considering it a mask for elite if not imperial power, privilege, and subjugation.

Jane Carruthers refuses to embrace uncritically either of these narratives. Instead, she recognises that there is a dialectical relationship between the romantic and the critical perspectives and that creative and progressive possibilities can and do emerge from fraught and tragic histories. As a scholar living and writing near Pretoria, the heart of the former apartheid state, she has had a valuable analytic vantage point. On the one hand, she has documented the shadow side of the establishment and management of protected areas during the colonial period—the deracination of Africans from their homelands and their exclusion from newly-formed preserves that were indeed reserved for the colonizing elites.⁵ On the other hand, she has illuminated the profound changes and possibilities that have emerged as the country transitioned to African majority rule.

4 Robert H. Keller and Michael F. Turek, *American Indians and National Parks* (Tucson, Arizona: University of Arizona Press, 1998); Mark David Spence, *Dispossessing the Wilderness: Indian Removal and the Making of the National Parks* (Oxford: Oxford University Press, 1999); Jim Igoe, *Conservation and Globalization: a Study of the National Parks and Indigenous Communities from East Africa to South Dakota* (Belmont, CA: Thomson/Wadsworth, 2004); Mark Dowie, *Conservation Refugees: The Hundred-Year Conflict between Global Conservation and Native Peoples* (Cambridge, Mass.: MIT Press, 2009); Bram Büscher, *Transforming the Frontier: Peace Parks and the Politics of Neoliberal Conservation in Southern Africa* (Durham and London: Duke University Press, 2013).

5 Jane Carruthers, *The Kruger National Park: a Social and Political History* (Pietermaritzburg: University of Natal Press, 1995).

Carruthers has shown that parks and protected areas are not simply places with repressive histories but that they reflect the societies in which they are situated. They are thus dynamic places with progressive possibilities. As she has noted, these lands and the revenue they generate “serve local interests and, in this way, are integrated into national ideology and agendas, as has been the case in the past. Their history mirrors the transformations in society.”⁶ They can even be unusually opportune places for rectifying previous injustices, including cases wherein the land has been usurped by imperial interlopers. As she puts it: “National parks are favoured spaces for reclaiming—perhaps even reinventing—the cultures of formerly disadvantaged peoples as well as for publicising aspects of indigenous knowledge to a wider audience.”⁷ While documenting in important ways the histories in which the establishment and management of protected areas have victimised many, Carruthers is also gently suggesting that an exclusive focus on “ideas of ‘victimhood’ [that] have been the prevalent trope in the emerging world” can erode the sense of agency upon which political mobilization depends.⁸

In a related thread focusing on environmental activism and land conservation in Australia and South Africa, Carruthers has examined the cultural processes in which bio-regional initiatives and environmental campaigns can transform “land” into “place.” With such transformation nature becomes valuable not as a commodity or resource but for aesthetic and moral reasons. Such values are increasingly integrated in contemporary resource management in which “all elements of a system, including the cultural are included.”⁹ So, in Carruthers work, we find fearless examination of protected area conservation—from tragic and terrible histories to contested and fraught, but sometimes positive, contemporary developments. I have found similar dynamics during my own fieldwork. Park interpreters, for example, increasingly describe in a positive way the traditional ecological knowledge of Indigenous peoples and the ways it is embedded in their cultures, explaining to the publics drawn to parks and

6 Jane Carruthers, “Environmental History for an Emerging World” (keynote address, 6th Symposium of the Latin American and Caribbean Society for Environmental History, Colombia, June 2012).

7 Jane Carruthers, “Past and Future Landscape Ideology: The Kalahari Gemsbok National Park and Uluru-Kata Tjuta compared,” in *Social History and African Environments Past and Present*, eds. William Beinart and Joann McGregor (Oxford: James Currey and Cape Town: David Philip, 2003), 255.

8 Carruthers, “Environmental History for an Emerging World”.

9 Jane Carruthers, “From ‘Land’ to ‘Place’: Landscape Conservation and Environmental Activism in the Magaliesberg, South Africa and Cooper’s Creek, Australia,” in *Shades of Green: Environmental Activism around the Globe*, eds. Christof Mauch, Nathan Stoltzfus, and Douglas Weiner (Lanham: Rowman and Littlefield, 2006), 69–100.

protected areas the ways in which such knowledge has enabled people to adapt and flourish. Moreover, this revaluing of such knowledge is, in some areas, leading to mutual learning between local peoples and those trained in western sciences, as well as greater reciprocal respect for the cultures of those involved. In some cases, the valuing of traditional ecological knowledge by western scientists is leading to a re-valuing and the preservation of such knowledge by those from non-western traditions.¹⁰

Complicated histories, including those still unfolding, illuminate the perils and promise inherent in the ways human beings relate to one another, to other organisms, and to the diverse environments they inhabit. Understanding these histories enhances our ability to avoid past mistakes and work toward more positive futures.

Similar positive trends have emerged within the California State Department of Parks and Recreation, where I worked throughout college and graduate school as an Ocean Lifeguard, Peace Officer, and Ranger. Through my work on its Equal Employment Opportunity Committee, I learned that the State Personnel Board had directed my department to improve its workforce mix so that it better reflected California's ethnic diversity.¹¹ Racist beliefs held by some employees involved in hiring processes (some of which I witnessed) contributed to the poor record. But the problem was more cultural and structural: ethnic minorities were more likely to live in less affluent urban areas away from parks, and people of colour had fewer opportunities to develop swimming skills through living near the surf, where real estate was expensive.

As a result of the departmental sanctions we developed processes to produce ethnically diverse applicant pools and to eliminate discriminatory hiring practices. Parks officials recognised that the long-term flourishing of parks depended upon a population that knew and valued these conservation areas. Educating and serving California's increasingly diverse urban population became another aspect of caring for parks.

Broad societal and ideological changes were reflected in the make up and mission of the parks. California's affirmative action programs of the 1980s represented an early example of environmental justice. As the state has become more diverse, those who work in

10 Bron Taylor, *Dark Green Religion: Nature Spirituality and the Planetary Future* (Berkeley: University of California Press, 2010), 189.

11 Bron Taylor, *Affirmative Action at Work: Law, Politics and Ethics* (Pittsburgh: University of Pittsburgh Press, 1991), 75.

and enjoy its parks have diversified as well. This in turn has provided an opportunity for parks employees and others who value these places to shape in the public an aesthetics and ethics that will lead to their being valued and protected in the long term.

What sort of environmental ethics were being exemplified and taught in these pioneering programs? Today there is a significant commitment to the conservation of the state's biological diversity, which is threatened by growing numbers of people with their widening ecological footprint. Such concern was only nascent when I went through the State Park's interpretive training academy in 1984. Here we learned about the mission of the park service and how to interpret the park to visitors through museum and campfire programs.¹² Although at the time I was also an advanced graduate student studying ethics and social justice movements around the world, it was in the ethics module of our interpretive training that I first encountered Aldo Leopold's land ethic.¹³ In my class of some 40 rangers and lifeguards, only a few were already aware of anthropogenic species losses. I doubt that any of us had heard of Leopold before the course. So the parks courses had begun to draw on the nascent field of ecological ethics. Such ethics would increasingly be reflected in management practices and campfire programs alike in subsequent decades.

Protected areas materially and philosophically reflect the societies in which they are situated. This pattern provides ample opportunity for criticism and regret about past injustices and failings, as well as for optimism that there can be a synergy between positive ethical developments in the society at large and the efforts of those involved in protected area conservation. Even where problems remain today, as a result of efforts to monetise these places in ways that serve neoliberal economic models, positive models for more inclusive conservation management have emerged.¹⁴ Realising the full potential of today's commons areas, of the planet's protected and conservation lands and waters, requires increasing recognition that the flourishing of all organisms is mutually dependent and that neither environmental justice nor a biodiversity ethics can fully develop in the absence of the other.

12 Bron Taylor, "Wilderness, Spirituality and Biodiversity in North America: Tracing an Environmental History from Occidental Roots to Earth Day," in *Wilderness Mythologies: Wilderness in the History of Religions*, ed. Laura Feldt (Berlin: De Gruyter, 2013), 293–324.

13 Aldo Leopold, "The Land Ethic," in *A Sand County Almanac and Sketches Here and There* (Oxford: Oxford University Press, 1987, first published 1949), 201–226.

14 Büscher, *Transforming the Frontier*.

Carruthers has argued that environmental history, because of its broad, multi-faceted approach, provides analytic insights to illuminate a socially inclusive way forward. For this to be the case the discipline must do more than criticise past failings and injustices. It must contribute to understandings of the human processes, lifeways, and livelihoods that promote healthy and resilient biocultural systems. In this way environmental history can illuminate paths toward a more equitable and sustainable future.

Catherine A. Christen

History and Audacity: Talking to Conservation Science

The predominant perspectives in conservation science are future-oriented. Research in conservation science is fundamentally concerned with averting oncoming extinctions and ensuring ongoing redemption of biodiversity. Environmental historians, practicing in a field that largely dedicates its historical analysis to increasing understanding of current environmental issues, generally respond positively to the future-linked “safeguarding” mission saturating the framework of conservation science. Some historians studying conservation science-related topics may even feel impelled to orient their own research to provide whatever that field may “need” from historians and their craft. Perhaps that tendency is a particular occupational hazard for historians like me, who spend most of our time working on programs devoted to training and implementation in conservation science itself. Accustomed to applying our historical sensibilities and approaches and our humanities perspectives to conservation projects, we may at times tend to interrogate our research topics in ways that risk a malpractice—that of appropriating history to justify a currently favoured conservation approach. What is called for, then, is audacity: employing the practice of history fully to tell a complex story involving conservation science yet unconstrained by the world views, narrative guideposts, or specific outcomes practitioners of that science might expect as foregone inclusions. Among the most daunting challenges conservation science faces is the question of how to align its scientific findings with its intended management applications in the inevitable “real world” context. The audacious, non-beholden practice of history, calibrated to process that real world context, ultimately provides the most benefit even in this regard.

A Conservation Story: Przewalski’s Horses

Among the more dramatic conservation science endeavours afoot today is the captive breeding and subsequent reintroduction of wildlife species into native or near-native habitats, sometimes several generations after their extinction in the wild. As complex and engaging as any of these species rescue and redemption stories is that of the Przewalski’s horse. *Equus ferus przewalskii* possess two more chromosomes than domestic horses, and, also unlike *Equus caballus*, they shed their tail and mane hair once a year.

This horse was already well known to the Central Asian nomadic peoples who hunted it for meat, or sometimes encountered Przewalski's stallions mounting their domestic mares. After centuries of desultory rumours and occasional literary references, the Przewalski's horse was first identified by western science as a species in 1881, to much acclaim among contemporary European aficionados of both evolution and horse breeding. By this time the horse was already largely confined to the drier fringes of its natural range in Central Asia.

By the early 1900s violent round-ups by commercial agents of westerners seeking hides for collections and horses for breeding had removed more than 80 Przewalski's foals from their habitat and destroyed multiple harems in the process of dispersing and killing a great many stallions and mares that were interfering with the foal captures. Eventually the remaining horses evidently overcame these behavioural and breeding stressors and regrouped, as contemporary zoologists found that the species numbers had increased again somewhat by the 1930s. But by the late 1940s, growing rangeland pressures, high offtake for meat by traditional hunters, and a series of severe, prolonged blizzards apparently doomed the remnant population. The last live sightings of wild horses, in the Gobi Desert, date from the 1960s.

In the meantime, some 50-odd captured foals survived their early 1900s overland treks and trans-shipment to western estates and zoos, where sub-optimal captive conditions and profound loss of their natural ecological and social structures hastened more deaths and led to an overall breeding depression, compounded by the depredations of the Second World War. By 1947 only about 30 captive horses existed worldwide, and the fraction of these actually still in the breeding pool retained the genetic material of only about a dozen founder horses. Yet by the late 1950s, the species clock had in effect restarted on this population in diaspora. The next few decades saw rising interest among scientists and zoo managers, coupled with improved husbandry, increasing international coordination of captive breeding, and advances in conservation genetics. By 1990 the captive population numbered several hundred. Reintroductions to Mongolian reserves in the Gobi Desert and the more hospitable steppe-grassland regions started in 1992, following releases to semi-wild enclosures in parts of Europe. There are now reserves in China and Kazakhstan, as well. Over time, reserve management in Mongolia has incorporated more applied science, more Mongolian scientists, and more cooperation with local herdsmen, while the horse itself is increasingly embraced as a national symbol

in post-Soviet Mongolia. Zoologists find much to debate regarding whether a mammal captive-bred for several generations still remains functionally and behaviourally the same species it was when last in the wild. Interestingly, at the time of this horse's initial reintroduction, Mongolia's steppe and desert landscapes and human-landscape interactions were remarkably unchanged from the last time these horses were upon that land, or from the previous several thousand years. Already this is different. Economic and social change, including movement towards intensive mining and urbanization, started accelerating in the 2000s, increasing the challenges for the Przewalski's horse.

A *History of Przewalski's Horses*

A Przewalski's horse history written to serve conservation science's forward-looking interest in species survival might focus on how the horse's on-the-brink preservation in captivity made possible its subsequent reification as an actual wildlife species. Indeed, that is a leading theme of the story as presented by horse-holding zoos. A Przewalski's history could also focus on the ways scientists have maximised the genetic diversity of the present-day horses through developing one of the first global studbooks, as well as improving the management of the ecology of small populations. It would be unfair to claim that conservation scientists ignore the pre-conservation or anti-conservation segments of this story. They don't. When they've wanted their history, they have collected it themselves. In the process, interested scientists have made accessible some of the best primary and secondary sources on Przewalski's horses, including information pertaining to the early, decidedly non-conservationist horse wranglers.

Orienting a history of Przewalski's horses towards the future—for example, focusing on genetic viability or reintroduction—represents a “helpful” impulse for a collaboratively-minded historian, but also one that tends to make the historian beholden to the failure-and-success version of the story. There are other possible lenses for contemplating the dynamics of the histories associated with the fates of this horse and its habitats. These are compound lenses that help the historian explore this story simultaneously in at least two chronological gears: the one(s) associated with conservationists looking forward and the one(s) employed by historians looking back. Multiple gears and compound lenses make for complex historical mechanisms, but mechanisms that afford the opportunity to fully engage the wealthy dialogues that emerge from the disciplinary perspectives of

both the present-day and of that historical period. The history unearthed can then, with luck, help us usefully map out both the intellectual and practical capacities of the protagonists of that past time, and understand how they fit together. In the case of Przewalski's horses, this history draws on the extant primary sources (records of Russian Academy zoologists, or animal traders such as Carl Hagenbeck) and the physical worlds these were connecting with—Central Asian deserts inhabited by nomadic hunters, pastoralists, and a native fauna that included shy, rare wild horses. In an audacious history, what is sourced and analysed from that time proves resonant with each of these present-day disciplines—that is, with the historians *and* the various conservation natural sciences. What is more, it is likely to better inform current conservation issues—for example, the debate over relative suitability of grassland and desert habitats.

Where do the different professional worldviews of each entity involved in this story relate to each other, and to the larger historical framework? My compound lens in this case—explicitly an appropriated, twenty-first century lens—involves training and capacity-building, and convening or facilitation, at times expanding these terms beyond their established modern uses. The point is to assess as deeply as possible the extent of agency and interaction among two or more cultural viewpoints and their associated practices, in the place where they connect over human actions in relation to these particular animals. To a large extent, these horses existed outside of history until they became objectified by that first scientific identification. But as soon as they were thus identified, intellectual history became a big factor in their treatment. So, for example, in the collecting raids of the early 1900s, somehow plans to gather small numbers from these wary harems soon devolved into oversized raids collecting dozens of horses. The animals collected did eventuate in the living horses today repopulating Central Asian habitats, but while the intellectual fascination of scarcity was a motivator, “conservation” was not. By studying the motivations of and interactions among local hunters, Russian Academy scientists, and European collectors (including Hagenbeck's crews), we can learn more about how different protagonists and their cultures were connecting, interacting, and transmitting knowledge and world views via the capacity-building experiences they shared, and about the related environmental and ecological impacts. We can address these contemporary nineteenth century stories by specifically considering their similarities to and differences from twenty-first century conservation capacity-building (training) and consensus-building (convening) practices. By recognising that any of the actors could variously be the trainers or convenors, we can explore the cultural transmissions

and environmental impacts without privileging the perspectives of any pre-designated “learned” groups. It is an audacious endeavour, based on shifting into both forward and reverse gears at once.

Elephant Management Today

Within present-day conservation science and management contexts, historians can incorporate various humanities-derived techniques for convening and for conflict resolution. Co-editing a volume of contributed symposium papers about ethical treatment of wild and captive elephants, zoologist Chris Wemmer and I began with an intellectual framework processing the viewpoints of each of our authors, who came from professional fields throughout the natural sciences, social sciences, and humanities, in terms of their predominant conception of elephants as individuals, populations, or species. Understanding the centrality of each participant’s self-alignment was crucial for approaching the symposium that engendered this volume—that the keepers and animal rights activists who were focused on ethical questions of zoo and circus elephants were working on a scale of individual animals; that some scientists in our group were mainly looking at populations; and that others were considering ethical questions from a species point of view. Faced with the prospect of these differently focused groups talking past each other for two days, we found leeway in our budget to hire two facilitators I knew from my community mediation background. During the two workshop days following the symposium, their work in helping us to find areas of agreement (no matter how seemingly minor) led to the development of a remarkable cohesion that impressed all members of the group. At the workshop’s end, all these people who had come to it thinking they had the lock on caring about elephants and their ethical management (from their own particular view of the elephant as individual, population, or species) had come to see something that they hadn’t even realised before. They saw that other people who cared about elephants were functioning from fundamentally different bases—in other words, that “relationships define perspectives,” including the not-so-conservationist perspective of those (such as Sri Lankan subsistence farmers) who found themselves in conflict with elephants over basic resources even as they held the elephants in high cultural regard. People took the new alignments they made at that workshop and have applied them during the past decade to expand the horizons and to enhance the efficacy of their elephant-related work.

The Value of Audacity

Perhaps most historians don't feel audacity needs to be a key component of their modus operandi. Professional confidence usually should suffice. Some doubtless always feel audacious, and comfortably so. But when one is so much around the conservation science world that effectively one is of that world, and yet not licensed to practice in this way, graceful audacity becomes truly a valuable characteristic to acquire. Jane Carruthers has been a key mentor to me in my learning to possess and express this measure of audacity, both in my research and in the other segments of my alternative historian's career in the conservation science world. Jane has always prodded me to be bold. In what I've described above, she's been there, nudging me on to the true edges, whether I have been handling multidisciplinary edges in the Elephants and Ethics project or involving myself deeply in the governance of the Society for Conservation Biology. Jane has always kept putting me up to a lot of big things. She shows up at odd moments and prods me into new directions in historical service and historical research and convening, as I am sure she does with many other scholars. She is doing nothing more than passing along the lessons of the kind of audacity—with Jane, it is often something more like charming insouciance—that she demonstrated in her work with conservation managers in South Africa and with her historical research and analysis on the Kruger National Park. Jane praises one's boldness ahead of one's being bold and compliments you on doing the right thing, charmingly forcing you into joining the cross-disciplinary adventurers like her who have taken the bold and audacious steps.

Christof Mauch

“But where the danger lies, also grows the saving power”: Reflections on Exploitation and Sustainability

I

Few historians have thought more deeply about exploitation and sustainability than Jane Carruthers. Her interest is in the preservation of flora and fauna, in the story of national parks and the parks’ “saving powers.” Her engagement is in the potential of setting aside land to create a better world; and her concern is for the destruction of natural wonders and human livelihoods.

II

In March 2013, German Chancellor Angela Merkel spoke at an official ceremony to celebrate the tricentenary of the German term for sustainability—*Nachhaltigkeit*. “The term has become a principle of survival,” she said. And, as is always the case on such occasions, Germany’s achievements in the area of sustainable development were roundly praised. “In the beginning,” according to Merkel, “was Carl von Carlowitz”, a baroque aristocrat in Saxony with a long, curly wig and a knight’s armour. He was the first to use the term *Nachhaltigkeit* in his massive tome on “sylvicultura” (forest culture), published in the early eighteenth century. His ideas of sustainable forestry were an export hit. They conquered the world.

Carlowitz was in charge of the royal Saxonian silver mines. For the process of mining and smelting he needed a large amount of charcoal and a huge number of trees. Sustainable growth—the regrowing of trees—was a necessity for Carlowitz: because he wanted to efficiently exploit one resource (ore), he needed to conserve another one (wood). How much, if anything, does Carlowitz’ notion of *Nachhaltigkeit* have to do with the idea of “sustainable development” and the spell of Rio 1992?

III

Carlowitz may have been the inventor of the term “nachhaltend” but he was not the inventor of sustainability. Long before him, the Venetians had done everything to conserve their forests. They had an insatiable appetite for wood. The reason was simple: without wood they had no ships, and without ships no trade, no ability to put up a fight, no power,

no riches. For hundreds of years they had set aside spaces—reservations—for trees. But in the sixteenth century, when both the fleet and the ships themselves grew larger (and thus also the fear of wood scarcity), they changed their thinking. Time became their new category of thinking, time instead of space. How long, they asked, will specific trees take to grow, providing us with enough wood for oars and for masts and for the body of ships in one hundred or two hundred years' time? And how can we ensure the growth and re-growth of our trees? Venetian forestry was better than its reputation suggested, and surely better than that of the French or the British in later centuries, whose forests disappeared at record speed. Indeed, in the end, the decline of Venice had little to do with a lack of wood. The Venetians lost the spice trade to the Portuguese who had better ocean-going ships. And, of course, Napoleon played no small part in the downfall of Venice

IV

In their attempt to prognosticate growth and to increase forestry yields, the Venetians had excluded local (peasant) users from most of the state reserves. The focus of the state foresters was on the production of high-quality wood, not on the livelihood of villagers. In fact, in the eyes of forest superintendents, the rural population had to be prevented from “abusing” the forest: from collecting firewood and thatch and fertilizing plants, from gathering fruits and berries. Strangely, however, despite all the planning and calculating, state forest yields declined much more rapidly than those of the locally used forests. The narrow focus on production materials for ships discriminated against the local communities in the countryside. Why were the voices of the peasants not heard?

V

The invention of sustainability was inextricably linked to the awareness of scarcity. Those with few resources soon learn that they can run out. Do the origins of our modern environmental consciousness really go back to the colonial world of small islands, as Richard Grove would have it? Was it really the colonies that taught the Portuguese and Spanish and British that there are limits to growth? The opposite might in fact be true, or at least be another way of looking at the truth. Colonies, in fact, were the drivers of greed. Is a complacent empire the logical consequence of too many colonies?

VI

It is one of history's great surprises that variously Carlowitz, the Venetians, the colonial British, and the colonial French were able to overcome their various wood shortages.

How did it come to pass that the West was able to summon enough energy for the huge industrialisation of the nineteenth century? All the forests of England could never have produced enough for this revolution. The Europeans' new hunger for energy far outpaced the rate at which trees grow. The largest factor here was the shift from solar to fossil fuels: from wood to coal. The changes that drove the world in recent centuries were made possible by the colonization of the vertical, of layers deep under the surface of the earth. But colonisation of the horizontal was just as important, the expansion into the landscapes of new worlds: the Americas.

Nature played into the hands of the colonising Europeans. Bacteria and viruses from the Old World decimated the indigenous population of the Americas. The settlement of the New World spelt doom for the "Natives" (and subsequently also for hundreds of thousands of Africans) but as far as the Europeans were concerned, they had struck gold. They occupied America. The European colonists transformed the new world radically and irreversibly; and the environmental riches of the New World transformed Europe. Crops such as sugar and cotton from the New World, and minerals picked out of the earth, were a vital factor in Europe's development. Without the discovery of coal, and without the "discovery" and colonization of America, Europe would probably be something like China, by which I mean a largely rural continent. The discovery and storming of the Americas made not just this continent into a new world, but Europe too. But what kind of world was it? What was so new about America?

VII

All of the Old World's worries about sustainability were brushed aside with the sudden availability of land in the New World. America provided an almost unimaginably vast canvas, rich in all kinds of resources. The continent became an "immense gaming table" (James T. Callender). The winners in the game were those who could make the highest bids. The plantation owners and frontier farmers progressed rapidly: if the harvests began to falter or fail, there was always fresh land to be had further west, new perspectives. The speedy process of land acquisition, preparation, cultivation, and sale to a new owner—the transformation of land into commodity—was a recipe for economic success. The creed of the "land of unlimited possibilities" has its roots in the American space, in the apparently boundless landscapes of the continent. Stories are reductions of reality, but they boil things down to their essence. From the European settlement of the Americas right up until the end of the Second World War, the Americans didn't want to hear

anything about limits to growth or prophecies of downfall. The “American way of life” was founded on a belief in wealth as a means to happiness, on the right to an ever-higher standard of living, on consumption and economic growth. That prosperity is something everyone can aspire to (at least those who are on the right political side) was and is the essence of the American dream. This dream spread, initially from the New to the Old World and subsequently outwards in all directions, to Korea and Australia and South Africa, to Brazil and China. Without the European discovery of the Americas, history would have run a very different course. Would we have recognised our limits sooner? In discovering America, which gave us both the sentimental and intellectual notion of boundless abundance, perhaps we Europeans did not strike gold after all.

VIII

The illusion of having sufficient space and sufficient resources was perhaps the tragedy of modern Western history. It gave us the feeling of boundlessness and took away any sense of urgency. It also prevented us from realising that our exploitation of resources was accelerating at record speed. Extraction and exploitation of our environment had always been the price for a life and livelihood on this planet. It’s nothing new. Even the utilisation of non-renewable resources is old hat. What is new is only the revolutionary acceleration and global reach of human meddling in the environment.

Humans consume oil in what is, in geological terms, the blink of an eye, oil that nature took billennia to produce. The Venetians, and Carlowitz, were able to think in terms of generations and centuries and in categories of sustainable regrowth. Aside from the centuries, people in the Early Modern period knew only one other unit of time: eternity. How very different are the units of time by means of which humans map themselves and their impact in the twenty-first century. Traces of the quicksilver used in the American West in the second half of the nineteenth century in the hydraulic mining of gold has spread via remote streams and rivers, via marine organisms and fish, and is today to be found in human bodies in all corners of the globe. Nuclear waste and poisonous substances are produced in such high concentrations and in such amounts that they will still be unfolding their fatal effects in tens of thousands of years. The half-life of the radiated fuel elements put into the world’s first final storage facility for nuclear waste in Finland is a minimum of ten thousand years. Who can secure Pandora’s nuclear box for our ancestors one hundred thousand years from now?

IX

The speed and the extent of our meddling in our environment have increased rapidly in the last two hundred years. Almost two thirds of the surface area of our planet are cultivated or pasture, 90 percent of plants have been bred by humans, cities are becoming the most frequent ecosystem (and therefore a new soil layer), plastic has become a new kind of sediment, and geologists tell us that anthropogenic changes to the surface of the earth—through agriculture, settlement, and the construction of roads and canals—will result in a rate of erosion some 30 times greater than the historical average. Many of these changes are irreversible. Many have fatal consequences. CO₂ emissions lead to species extinction, the acidification of oceans, the death of ecosystems, deforestation, the loss of livelihoods and habitats. Knowledge gleaned from fossil finds indicates that 98 percent of all species that ever existed are now extinct.

Our intellect allows us, in contrast with all other species on this planet, to recognise that we (along with all other creatures) must eventually become extinct. We want to avoid it, but while some courses of action will prolong our earthly existence, many will hasten the end of humanity. The poet Friedrich Hölderlin, in his classically inspired hymn “Patmos,” calls on human hope in the face of imperilled creation: “But where the danger is, also grows the saving power.” In retrospect, with reference to history, we know that this sentence is also true when reversed: “where the saving power is, danger grows.”

Environmental history is full of stories of the “conquest of nature” (David Blackbourn). The transformation of riverscapes, for example, took place in the name of rationality, progress, and modernization, but the unintended consequences of these actions were ever new vulnerabilities and disasters. Stories of the technical domination of rivers are everything but sustainable. Their protagonists have more in common with Sisyphus than with “divine engineers”—for again and again, nature turns against those who would be victorious over it. Often it is precisely the principles that should ensure stability that lead to collapse—the fixation on a solution, rather than experimenting with alternatives.

X

Talk of “sustainable development” must not just take account of those risks that humanity itself has created, and which have been around for millennia; it must also keep in mind the fact that the conditions under which we live are not enduring: it must include in its reflections the fragility of the system. We have our gaze set increasingly on the

future, and on ever shorter periods of time. Unlike Carlowitz and our ancestors in the Early Modern period, who took the time of nature seriously—the duration of human lives and the regrowth of the forests—we mark time from agenda to agenda, from one electoral cycle to the next, and from the second-by-second fluctuations in the exchange rates on Wall Street. At least as important as our gaze into the future is our view of the past, which helps to remind us what we have achieved, and, more importantly, what—in recent history and in *longue durée*—we have lost.

The history of the New World, which for a century and a half was the history of sustainable growth (recessions hardly dent the upward curves), shows that this game has produced not only winners but also many losers—soils and buffalo and minorities, who today live with the stench and the poisonous waste of progress. If we are to use the experiences of history for our future good, it is important that our narratives do not only reflect the permanent flux in the relationship between humankind and the environment, but also that we inscribe the ambivalence of danger and salvation into both our stories and their interpretations. Jane Carruthers' stories do just this. Sustainable stories. Stories of vanishing herds and of the survival of wildlife in altered circumstances—on farms and parks in South Africa; stories that take a stand against the discrimination of weaker groups in the name of large-scale meddling in the environment; stories that show that major historical changes almost always follow the observation of smaller spaces and local transformations, and that ideas of a better environment travel across both time and space, and shape-shift as they do so.

Sustainable stories are characterised by their evocation of positive images alongside their warnings against destructive changes in the world; in this way they can reveal to us both faulty decisions and new courses of action. We need more stories of the kind told by Jane Carruthers.

Further Reading

In 2013 the German term for sustainability—“Nachhaltigkeit”—was much discussed because of its tricentenary: Carl von Carlowitz’ work, in which he discussed the principles of sustainable (“nachhaltend”) forestry, was published in 1713 under the title *Sylvicultura oeconomic oder Haußwirthliche Nachricht und naturmäßige Anweisung zur wilden Baum-Zucht* (Leipzig: Johann Friedrich Braun, 1713). For a discussion of the conceptual history of sustainable development see Ulrich Grober, *Deep Roots: A Conceptual History of Sustainable Development (Nachhaltigkeit)* (Berlin: Wissenschaftszentrum Berlin für Sozialforschung, 2007). For a more recent and global discussion see Iris Borowy, *Defining Sustainable Development for Our Common Future: A History of the World Commission on Environment and Development* (London and New York: Routledge, 2014).

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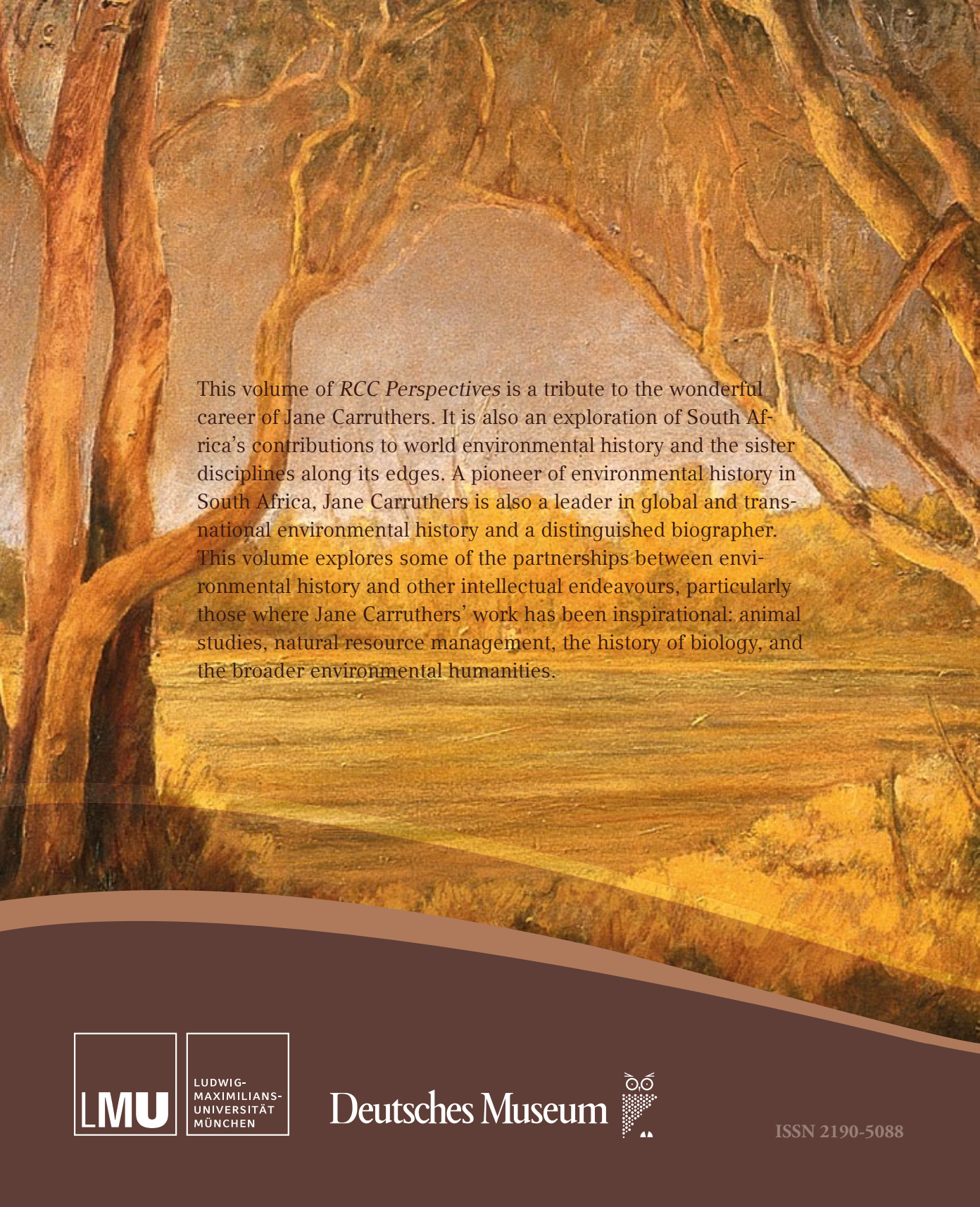
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The background of the page is a painting of a landscape. On the left, a large, gnarled tree trunk with reddish-brown bark dominates the foreground. The ground is a mix of brown and yellow tones, suggesting a dry or sandy environment. In the distance, a path or road leads towards a hazy, light-colored horizon. The overall style is impressionistic with visible brushstrokes.

This volume of *RCC Perspectives* is a tribute to the wonderful career of Jane Carruthers. It is also an exploration of South Africa's contributions to world environmental history and the sister disciplines along its edges. A pioneer of environmental history in South Africa, Jane Carruthers is also a leader in global and transnational environmental history and a distinguished biographer. This volume explores some of the partnerships between environmental history and other intellectual endeavours, particularly those where Jane Carruthers' work has been inspirational: animal studies, natural resource management, the history of biology, and the broader environmental humanities.



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