



Life at the Edge of Extinction

SPECTRAL CROWS, HAUNTED LANDSCAPES AND THE ENVIRONMENTAL HUMANITIES

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I It seems very appropriate that this particular symposium of the Australian Academy of the Humanities should include a lecture in honour of Sir Keith Hancock. Although the environmental humanities had not yet taken shape as a field of scholarship during his lifetime, Hancock played an incredibly significant role in defining and ‘crafting’ environmental history in Australia, helping to establish it as a respectable field of study—as Tom Griffiths and others have documented.¹ That strong tradition of historical scholarship is now a core strand of the environmental humanities.

When I began my PhD at the Australian National University about ten years ago, it was one of very few places in the world with a real concentration of research in the ecological or environmental humanities. I was lucky enough to be part of one of the many ecological humanities groups that have developed there, this one primarily a collaboration between Deborah Bird Rose, Libby Robin, Val Plumwood and their students. An anthropologist, an historian and a philosopher—three pre-eminent international figures in their own environmental subfields. But more than this, three scholars keenly attuned to the value of *interdisciplinary* work on the environment. Although my undergraduate degree was in philosophy, I was inspired by my principal supervisor Debbie Rose and the other anthropologists in our group to

conduct interviews and then more substantial ethnographic research. Similarly, I was inspired by the way that others, especially the historians, were thinking and writing, and so I began the task of weaving my philosophical work into accessible narratives. I completed my PhD as something other than a philosopher—although my roots remain in that discipline, I have never been fully at home there.

From my perspective, it is precisely this kind of interdisciplinarity that is at the core of the environmental humanities. While for some the term might refer to an umbrella of sorts—simply gathering up existing environmental subfields within the humanities—it is also something more than this.

At its heart, the environmental humanities brings the traditional concerns of the humanities—for example, with questions of meaning, value, ethics, justice and the politics of knowledge production—into an engagement with the wider more-than-human environment. But this is no innocent alignment: both ‘the environment’ and ‘the human’ will never be the same again. Neither conceptual category can withstand this close proximity. Here, the nature/culture dualism implodes and we’re all repositioned as participants in lively ecologies of meaning and value, entangled within rich patterns of cultural and historical diversity that shape who we are and the ways in which we are able to ‘become with’ others.²

In this context, the environmental humanities is a fundamentally experimental field: one that asks about the new forms of scholarship that are *possible* when we get beyond the various humanisms of the humanities, as well as the new forms of scholarship that are *necessary* in our time of rapid and escalating change. In taking up this experimental role, the environmental humanities responds to a dual challenge: the need to enrich environmental research with the more extensive conceptual, political and critical vocabulary of the humanities, whilst at the same time vitalising the humanities themselves by rethinking the ontological exceptionality of the human.

This is the approach I was lucky enough to be trained into, to inherit, as part of the interdisciplinary group at the Australian National University. Today, there are environmental humanities centres, teaching programmes and journals springing up all over the world—most of them in just the past few years: including our own programme at the University of New South Wales, which hosts Australia's first undergraduate major in the field. At this time last year we also launched the world's first international journal dedicated to the environmental humanities.³

Like most of my work, the research I discuss here is grounded in the cross-disciplinary and cross-cultural approach outlined above. It is an effort to bring biology and ecology into conversation with philosophy and my own ethnographic work with local communities. This is an approach to studying and writing about extinction that I have developed collaboratively with Debbie Rose in a series of separate and joint studies that explore what extinction *means* and what forms of life and death are possible in its shadow.

* * *

I stood in the forest listening for crows. Listening and hoping, even though I knew it was foolish. I had been led to this forest precisely because there were no longer crows here, because there were no longer free-living crows anywhere in Hawai'i. I knew that the last sighting of a crow had been made a decade earlier (in 2002) and that these birds were now

extinct in the wild. But as I stood in the forest I couldn't help but listen and hope.

I had read descriptions of crows in Hawai'i's forest by eighteenth- and nineteenth-century ornithologists writing when these birds were still relatively common. George Munro saw them in 1891, and provided a passing reference to their graceful movements below the rainforest canopy: birds 'sail[ing] from tree to tree on motionless wings'.⁴ Standing in a forest at 7000 feet elevation—in the heart of the region where they once lived—I imagined for a moment that I could see their feathered



forms moving through the trees. I imagined what it would be like for the now eerily quiet forest, missing this and so many other species of birds, to once again be enlivened by such a charismatic presence.

And so, I begin with spectral crows, haunting a dying forest. This forest was itself in decline for a number of reasons, principally because of the presence of introduced ungulates like pigs, that uproot and graze down any new vegetation. Where once there would have been a lush understory beneath a tall canopy of trees, all that remained now were old trees with no new growth to replace them, and no understory to hold the soil together when it rained. The biologists I was travelling with called this a 'museum forest', others have called

(above)
At the top of the Ka'u Forest Reserve. A degraded landscape.

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it a forest of the 'living dead'.⁵ Either way, it too was perched perilously at the edge between life and death.

In a range of different ways, this lecture is an exploration of the absence of crows, as well as some of the many contestations over,

and consequences of, their potential return. In particular, I am interested in how we inherit and inhabit the legacies of the past to shape possible futures. In a time of ongoing extinction and colonisation, a time in many ways characterised by interwoven patterns of



(right)

Fertile Sources.
Wood block print by
Margaret Barnaby.

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biological and cultural loss, what does it mean to inherit *responsibly*?

The crow that is my guide into these questions is not just any crow. Known locally by their Hawaiian name—‘*alalā*—these birds are forest and fruit specialists. Although they look very much like the common crows and ravens found in Australia, the United States mainland, and elsewhere, behaviourally they are quite distinct. ‘*alalā* do not seem to have taken to scavenging and a life beyond the forest. Instead, they ate flowers and fruit, insects and occasionally other birds’ eggs. As Polynesian and then European, Asian and other peoples arrived, ‘*alalā* stayed in the forests even as these places were becoming less and less hospitable for them. Some forests were cleared and others were degraded by introduced ungulates. Meanwhile, new avian diseases and predators like cats and mongooses moved in.

Eventually, roughly a decade ago, the last of the free-living ‘*alalā* died. Initially, only a handful of crows survived in captivity. As a result of years of captive breeding, however, there are now roughly 100 ‘*alalā*, and it is hoped that one day soon they might be able to start being released back into the forests of the Big Island. Before this can happen, however, much remains to be done to prepare the way.

GHOSTS AND CO-BECOMING AT THE DULL EDGE OF EXTINCTION

We don’t know when it was, or where they came from, but at some point in the deep history of the Hawaiian islands, crows arrived. As the islands in this volcanic chain rose above the sea, one by one countless plants, animals and other species arrived by wave, wind and wing and settled in. Animals and plants adapted, co-evolving with others over millions of years. Completely free of mammalian predators, for the longest time these were islands of immense avian diversity. Fossil records indicate that there was once a range of large, flightless birds in the islands.⁶ It is likely that in earlier times many of these birds played important ecological roles as pollinators or seed dispersers for local plants.

Today, however, most of these birds are gone. Of the 113 bird species known to have lived exclusively on these islands just prior to human

arrival, almost *two-thirds* are now extinct.

Of the 42 species that remain, 31 are federally listed under the United States Endangered Species Act.⁷ It is not hard to see why Hawai‘i is regarded as one of the ‘extinction capitals’ of the world—of course, Australia is another of these extinction capitals, with the highest rate of mammalian extinctions anywhere in the world in the past two hundred years.

And so, ‘*alalā* is now the largest fruit-eating bird remaining anywhere in the islands—albeit only in captivity. With its passing from the forest it is thought that several plant and tree species—especially some of those with larger fruit and seeds—may have lost their only remaining seed disperser. Under the rainforest canopy, wide seed dispersal can be a vital component of species’ survival. As birds carry seeds away from their parent trees they spread genetic diversity, they reduce competition, and they can even provide safer places for germination.

Recent research conducted by Susan Moana Culliney suggests that the ‘*alalā* may have been the last remaining seed disperser for at least three plants: ho‘awa, halapepe, and the loulou palms. But dispersal is not just about movement. In addition, it seems that some of these seeds germinate better—or in the case of ho‘awa, will only germinate—if the outer fruit has been removed, something that ‘*alalā* once routinely did.⁸

A long and intimate history of co-evolution lies within these embodied affinities that bind together avian and botanical lives. Crows are nourished, plants propagated and in the process both species are, at least in part, constituted: their physical and behavioural forms, their *ways of life*, emerging out of generation after generation of co-evolutionary ‘intra-action’.⁹

‘*Alalā* haunt the forest in another way here. Beyond my own active imagination, their spectral presence is *inscribed* in the forest landscape. Plants call out to ‘*alalā*, their fruiting and flowering bodies shaped by past attractions and associations that no longer exist.

As ‘*alalā* populations have declined over the past decades, the plants bound up in mutualistic relations with them have likely declined too. Halapepe and loulou palms are themselves now rare or endangered.

In addition, Culliney notes with regard to ho'awa, that most of the trees encountered today are older and that there is now a 'general lack of seedlings or saplings in the wild'.¹⁰ And so, it is quite possible that these plants are now what biologists call 'ecological anachronisms': species with traits that evolved in response to a relationship or an environmental condition that is no longer present.¹¹ The extent to which the loss of 'alalā has contributed to the decline of these plant species remains a topic for future study. It is clear, however, that the absence of a seed disperser can only make the future of these plant species that much more precarious. Here, we see that co-evolution can switch over into co-extinction; co-becoming into entangled patterns of dying-with.

Alongside plants and their forests, the disappearance of 'alalā is also felt by local people. For some native Hawaiians, 'alalā is part of their cultural landscape: these birds hold stories and associations in the world. 'Alalā is an 'aumakua or ancestral deity for some people, and the plants and forests that might disappear or change significantly without their seed dispersal are themselves also culturally significant in various ways.¹² Many other locals are also drawn into this experience of loss. I interviewed biologists, artists, ranchers, hunters and others, some of whom were lucky enough to remember—and so miss—the dramatic presence of these birds in the forest. Many were trying in their own ways to reckon with the affective burden of living in a place where crows are no longer present, a place in which (paraphrasing one biologist), we have lost the most intelligent and charismatic component of our forests.

Here, crows, plants, people and others are tangled up and at stake in each other. But it is the particularly historical character of these entanglements that I am interested in; and more specifically, the way in which life is, at a fundamental level, grounded in rich patterns of inheritance. All of Earth's creatures are heirs to the long history of life on this planet. We are woven through with traces of the past: our own past, but also that of our forbears whose relationships and achievements we inherit in our genes, our cultural practices, languages and much more.¹³ Some of this inheritance

is linear—from parent to offspring—but it is also more than this: it is radically multivalent, radically multispecies. In Debbie Rose's terms, here we see that life is a product of both sequential and synchronous relationships and inheritances.¹⁴ Who we all are as individuals, as cultures, as species, is in large part a product of generations of co-evolution and co-becoming in which we are woven through with traces of all of our *multispecies* ancestors.

These entanglements mean that a species like 'alalā cannot be neatly excised from our living world. Each species is a strand in a fabric, what I have elsewhere called a 'flight way'—a term that aims to evoke an understanding of species as evolving *ways of life*, as interwoven lines of intergenerational movement through deep history.¹⁵ In this context, extinction always takes the form of an unravelling of co-formed and forming ways of life, an unravelling that begins long before the death of the last individual and continues to ripple out long afterwards: hosts of living beings—human and not—are drawn into extinctions as diverse heritages break down or are otherwise transformed.

There is no solid line here between 'human' and 'ecological' dimensions, between evolutionary and cultural entanglements: relationships and affinities cut across any simple divide, moving back and forth with ease. The traces that we leave behind in each other remind us that conventional Western notions of 'the human' as a being set apart from the rest of the living world, have always been illusory.¹⁶ In Anna Tsing's terms '[h]uman nature is an interspecies relationship'; it is the shifting historical product of 'varied webs of interspecies dependence'.¹⁷ As it is sometimes succinctly put by native Hawaiians: the people arrived as Polynesians, but the islands made them Hawaiian.

SPECTRAL CROWS AND THE PROMISE OF RETURN

As I travelled, observed and talked with a range of people on a recent research trip in Hawai'i, I encountered another important site in which the absence of crows was helping to shape future possibilities for everyone. At the centre

of this story is the Ka'ū Forest Reserve in the south of the Big Island—the forest in which I stood listening and hoping for crows. Early in my trip I travelled high up into this area with a group of conservationists and state and federal land managers, a two-hour drive on a very bumpy dirt road that crossed old paddocks, forested areas, and cooled lava fields that stretched out black into the distance as far as the eye could see.

Just a few months earlier, the state government had released its management plan for the area. At its core was a proposal to fence 20 percent of the reserve, almost 5000 hectares.¹⁸ The fenced section would still allow human visitors, but all of the pigs inside would be killed so that the understorey might recover. Hopes and dreams for the future of 'alalā animated this proposal, at least in part. As the forest recovers, it is anticipated that it will be a future release site for these birds—while also contributing to the conservation of a range of other endangered species and ensuring that erosion is minimised so that the forest remains a healthy water catchment.

But not everyone supported this proposal. Although its drafting involved more than a year of serious community consultation, it has been greeted with hostility by some locals. The most vocal opposition has come from hunters—some

of them native Hawaiians—who do not want to see a fence built and the pigs that they hunt removed from the area. Of course, hunters are a diverse crowd in most places, and this is certainly true in Hawai'i. In this context, opposition to fencing is grounded in a diverse range of understandings, values and histories. On the surface, the most prominent opposition to this fence has been justified by the notion that there is not enough accessible public hunting land in Hawai'i, with too much already 'locked up' in conservation.¹⁹ For these people it is often simply a question of whether birds, snails and plants should take priority over human interests. In addition, hunters often challenge the notion that pigs and other ungulates damage the forest, some even arguing that pigs actually play a positive ecological role: tilling the soil and rooting out weeds.²⁰

The three conservationists who led our little expedition to the Ka'ū Forest Reserve that day were all locals, born and raised in the district of Ka'ū. John, an ex-ranch hand, long-time hunter and conservation convert, and Shalan, an ecologist, now both worked for The Nature Conservancy. Nohea, a young Hawaiian woman with deep family roots in the area and a degree in Hawaiian Studies, was working as a community outreach and education officer for the state government.



(left)

Sheltered by the
Loulu Palm. Wood
block print by
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he conveyed the significance of the extinction of ‘*alalā* to local people was to draw a direct comparison between the loss of this species on the one hand, and the potential loss of Hawaiian language and culture on the other. The value of diversity, of sustaining it into the future, was the point here. While John was mindful of the fact that cultural and linguistic diversity often rely on biodiversity (and vice versa),²² his main point in making this connection in discussions with hunters was as a means of illustrating how biological ‘species’ might themselves also be a kind of valuable diversity in our world. The tragedy of lost cultures in a colonised land allows people to

Together they played a central role in the drafting of the new management plan for the area, especially the community engagement process.

As part of this process, they took numerous groups of locals, including many hunters, up to the section of forest that the state is proposing to fence. After visiting the site, many hunters who were initially sceptical agreed that fencing is a good idea: partly because the visit impressed upon them just how remote the area is (and therefore inconvenient for hunting), but also because they were able to see with new eyes—with biologists’ eyes, perhaps—the extent of the damage that ungulates were doing to the forest.²¹

During these site visits, John, Shalan and Nohea also spent a lot of time talking to local people on the long drive up and back. John explained to me that one of the ways in which

connect with the loss of a bird which, for some, had come to seem insignificant.²³

I am interested in these sites of communication and contestation between conservationists and hunters, which are about much more than ‘*alalā*. In particular, I am interested in the way in which the past is imagined and inherited, how the past haunts the present in often unexpected ways. A key part of this haunting is the way in which the particular histories that we tell, that we inhabit, animate our understanding and action.

(above)

Near the top of the Ka‘ū Forest Reserve. Stopping for a rest.

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(right)

Maps and images used to illustrate damage.

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Histories are not *of* the world, but *in* the world, as Donna Haraway reminds us about stories in general.²⁴ And so, how we tell the past plays a powerful role in structuring what is nurtured into the future and what is allowed or required to slip away. All of the rich cultural and biological inheritances that constitute our world are at stake, to a greater or lesser extent, in the histories that we weave out of, and into, this forested landscape.

Of course, some hunters opted not to go on site visits to the Ka'ū Forest Reserve, and others remained unconvinced. Many of these people continue to oppose the fencing and removal of pigs from this area; some of the most vocal opponents are native Hawaiian hunters.

For many native Hawaiians pig hunting is understood as a core traditional practice that ought to be widely supported as part of the continuity of Hawaiian culture. In conversations with these hunters, as well as in online discussion forums, I encountered repeated reference to this point of view. For them, any effort to remove pigs and limit hunting is seen as a violation of their Traditional and Customary Rights, protected by the Hawaiian Constitution (Section 7).²⁵

In recent years, however, the notion that pig hunting is a traditional cultural practice has been thoroughly problematised. Detailed historical studies by Hawaiian cultural experts Kepa and Onaona Maly indicate that prior to European arrival pigs were kept close to home. They were also distinctly different animals: of the smaller Polynesian variety not the large European boars now found widely throughout the islands. The only hunting that took place at that time was bird hunting, primarily for feathers used in royal ornaments and clothing.²⁶

With this information fresh in my mind, I expected conservationists to readily dismiss claims by hunters to 'tradition', but found that this was not the case. Instead, almost all of the conservationists noted that this shorter history did not invalidate claims to continued hunting. Many noted that the length of time required to make something 'traditional' was uncertain, that culture is not static, and that several generations of hunting is certainly long enough to establish family traditions—forms of identity

and culture—that ought to be respected wherever possible. In short, they recognised in their own way that, as James Clifford has famously put it: "Cultures" do not hold still for their portraits.'²⁷

But something else was happening here too. Several of the conservationists quickly mentioned this historical research when the topic of pig hunting came up. Although they were clear that this did not mean that hunters had no claim to continue hunting, it clearly changed the *nature* of that claim. In noting that the pigs are different and the practice more recent than sometimes thought, a break with the past is effected in which fencing and pig removal are conceptually separated from contentious questions of native Hawaiian customary practice and rights. As Michelle Bastian has argued, different histories create different continuities and ruptures, with all of their attendant political and ethical consequences.²⁸ Importantly, however, it was not just haole (white) conservationists making this claim; in fact, some of the people that made it most strongly were native Hawaiians who see the removal of pigs from at least some areas of forest as essential to the conservation of not only the environment, but of a rich notion of Hawaiian culture too.²⁹ I will return to this topic shortly.

The desire of some conservationists conceptually to separate pig hunting from traditional Hawaiian culture is, I believe, in large part an effort to *depoliticise* plans to remove pigs. This is nowhere more clear than in the prominent role that the history of the United States occupation of Hawai'i is playing in some of the most vocal opposition to fencing in Ka'ū. With the occupation firmly in mind, for some hunters the proposed fence is one more 'land grab' in a long history of taking.

The last monarch of the sovereign nation of Hawai'i, Queen Lili'uokalani, was overthrown in 1893 by a group of wealthy settlers with the aid and support of members of the United States government and its military. Through a complex series of events over the next five years, Hawai'i became a territory of the United States and fifty years later was made a state. Although there was some attempt, both in the lead up to the overthrow and afterwards, to provide

native Hawaiian commoners with some form of property rights in small parcels of land, this never really worked out in their favour.³⁰ From the Great Mahele of 1848, and subsequent decades of dispossession and annexation ‘by the mid-nineteenth century, Hawaiians and their descendants [had become] largely a landless people’.³¹

For people inhabiting *this* history, fence building is never an innocent act. In this context, conservation is seen as one more excuse to take away people’s rights to access or use land.

As one hunter put it, environmentalists are ‘always using something endangered to the islands for try grabb land’.³²

Importantly, these people do not trust the intentions of government agencies in this area, viewing any fencing as the beginning of a slippery slope towards complete loss of access. As another hunter put it: ‘environmentalist want to eventually take it all away and fence it in! They’re starting with these areas, and will start working on more. The alalā, water shed, native plants, etc. is just a smoke screen to grab more land!’³³ In this context, arguments by hunters often explicitly challenge the authority of the Hawaiian State Government, and certainly the Federal Government—illegal governments from this perspective—to exercise any authority in the management of these lands and resources.

This connection between conservation and occupation does important political work. Once a proposal like the Ka’ū Forest Reserve



(right)
Sanguine Moon.
Wood block print by
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Management Plan has been framed by critics in this way, those who speak in its favour are positioned as endorsing the occupation. As Shalan Crysdale put it to me: ‘to be for the plan is to be for the overthrow’.³⁴ In this context, publicly supporting conservation—as a Hawaiian or anyone else—requires one to enter into what another local called the ‘raging fire of emotion’ that surrounds the occupation and subsequent colonisation of the islands.³⁵

In this light, ‘alalā themselves become an enemy of the Hawaiian people. What’s more, the birds’ movements through the forest become suspect as hunters fear that each time ‘alalā move beyond the fenced area (especially if they are nesting), the fence will expand with them. And so, ‘alalā is imagined as a Trojan horse of sorts whose conservation facilitates further loss of land and rights. It should come

as no surprise that in this climate conservationists hold real fears that any released birds will be targeted by some hunters.

INHERITING THE WORLD

Towards the end of my most recent trip to Hawai'i I met with Hannah Kihalani Springer, a kupuna, or elder, who lives in the district of North Kona. Deeply knowledgeable about Hawaiian history and culture, about hunting and conservation, I was eager to hear her thoughts on the past and future of the islands. Sitting in her living room in her family's old homestead, we talked about conservation, politics, sovereignty, ranching, and of course, 'alalā.

Hannah is a passionate and active conservationist, President of the Conservation Council for Hawai'i. Like many other people I spoke with, she felt that in some places pigs and other ungulates need to be fenced out and removed. But she also felt that room has to be made for hunters—her family hunts, and in the past she hunted too. And so, like others, she felt that the government could do more to facilitate access to existing state land for hunting.

In contrast to those Hawaiians who strongly emphasise the place of pig hunting in their culture, Hannah noted that the islands' forests are alive with a *diversity* of plants and animals, all of which have their places in Hawaiian stories and culture. In this context, she argued that a singular focus on pigs is not helpful. In her words: we need 'the larger context that is much more diverse and dynamic [...] When we so diminish the conversation we're diminishing the Hawaiian experience and the Hawaiian culture. The forest is important for the myriad characteristics that comprise the whole'.

Other Hawaiians I spoke with who shared this view often referenced another history—the *Kumulipo*, an origin story—in their arguments about the need to hold onto a diversity of plants and animals in the forest.³⁶ For these people, removing pigs from portions of the forest to aid in the conservation of 'alalā, other endangered birds and plants, and the watershed, is essential for the protection of Hawaiian life and culture. This is perhaps particularly the case in a place like the Ka'ū Forest Reserve where, even if this fence did go ahead, the remaining

eighty percent of the area would still be open to pigs and hunters.

Speaking with Hannah that day I was reminded again and again that the histories that we tell are themselves *acts* of inheritance. Which is to say, the aspects of the world that we nurture into the future are, in more or less significant ways, shaped by how we understand and tell the past. Histories structure our understandings of what particular continuities mean and why they matter.

There is an important dynamic at work in inheritance here that deserves further attention. In *For What Tomorrow...*, Jacques Derrida excavates the basic structure of inheritance.³⁷ He is primarily interested in what it means to inherit traditions, languages and cultures. At its simplest level, inheritance seems to be about continuity and retention: taking up the past and carrying it forward into the future. Of course, much of this inheritance is not actively chosen; we are thrown into our heritage. But this is not the end of the story. For Derrida, in any act of inheritance there is also *transformation*. While language, culture and tradition all continue from generation to generation, they are living heritages, not fixed once and for all. It is this 'double injunction' at the heart of inheritance that Derrida draws attention to, describing the act of inheritance as one of 'reaffirmation, which both continues and interrupts'.³⁸

But this dynamic extends well beyond the human domains that so interest Derrida. All living beings are involved in their own forms of life and world shaping inheritance *that include both retention and transformation*. Evolution by natural selection—that great engine of new ways of life—is grounded in forms of inheritance that simultaneously retain the achievements of the past while constantly transforming them to produce new variability. This variability arises through recombination, mutation and other forms of transformation, and is the stuff of future change and adaptation. Moving beyond the narrow genetic reductivism commonly found in neo-Darwinian accounts, we are reminded that these lively processes of inheritance include much more than genes: epigenetic, behavioural, symbolic, even environmental heritages are

passed between organisms of all kinds in ways that shape bodies and worlds.

In this context, the fundamental structure of life is one of inheritance. Darwin knew something like this when he drew a comparison between language and biological species with an emphasis on the way in which both are at their core *genealogical*: seemingly ‘individual’ languages and ‘individual’ species are in reality simply moments within longer historical lineages. Here, life takes shape through the constant generation of variability, only some of which ‘sticks’, only some of which is retained and so incorporated into the larger collective (be it a language, a species or indeed a culture). As Derrida succinctly put it: ‘Life—being alive—is perhaps defined at bottom by this tension internal to a heritage, by this reinterpretation of what is given.’³⁹

In this context, inheritance is a productive concept for the environmental humanities; a concept with long and rich histories in both the biological and the human sciences. Reading Derrida with Darwin—or better yet, with more recent work in Developmental Systems Theory—we are able to begin to develop an appreciation of entangled *biocultural inheritances*.⁴⁰ Here we see that the movements of genes, ideas, practices and words between and amongst generations cannot be isolated into separate channels of inheritance: ‘the biological’ and ‘the cultural’ are inescapably bound up with each other in the shaping of worlds.⁴¹ If we scratch the surface just a little, these entanglements are palpable in Hawai‘i’s shrinking forests: as the island’s biotic diversity continues its long role in helping to nourish and shape local cultures; cultures which are in turn remaking those ecologies and the futures of their many inhabitants.

But thinking of inheritance in this entangled way draws us, inexorably, into the space of ethics. In a time of colonisation and extinction—a time in which so much of this biocultural diversity is being lost, often violently—what does it mean to inherit responsibly, how might we live up to our inheritances?⁴² As species, ecologies and cultures undergo ongoing and dynamic change, much of what is and is not passed on is not up to any of us. Where we can and do play a role,

however, the question is usually the same. Never simple, never clean: *what* is to be lost and what retained? Which losses will we accept, and in the name of which continuities? (and vice versa).

It is inside this dynamic that I’d like to suggest responsibility resides.⁴³

But how to inhabit this delicate balance between loss and retention? One of the many things that I learnt from Hannah that afternoon was that responsible inheritance is necessarily grounded in a recognition of, and an attentiveness to, multiple voices, with their diverse histories and imagined futures.

As our conversation was coming to an end we drifted into a discussion of the sovereignty movement in the islands. Hannah told me about a relative of hers, deeply committed to Hawaiian sovereignty, who worked for the state government as a biologist. When asked about the incompatibility between her politics and her employment, this relative would say that she was conserving Hawai‘i’s biotic diversity so that when and if sovereignty comes, the people and the land are in the best possible condition for it. Although Hannah didn’t explicitly say so, it seemed to me that she herself shared this general view. She went on to say:

The conclusion that I’ve arrived at is: ‘I am a citizen of the land’. We have lived on this land, as I’ve described to you, since before Cook’s arrival. And, we’ve seen chiefs rise and fall, we’ve seen an island nation born and die before its time, elected and appointed officials come and go, but here we stand. I’m less interested in the constitution that binds us or the flag that flies over the land, than I am in the quality of life on the land. So, if there are elements within whoever’s constitution it is, that allow us to preserve and pursue the righteous management of the resources that we call home, then I am happy to pursue those [...] I am loyal to this land. Whatever flag flies over it is one that I am willing to use the resources of to continue to be a citizen of this land.

Hannah’s position is one of hope, within which resides a profound responsibility to both the past and the future. Hannah has not forgotten the events of 1893. But she wants to inherit this

history in a way that refuses to see support for conservation as necessarily support for an illegal occupation. She wants to inhabit the history of these islands, her and her family's history, in a way that holds open possibilities for flourishing life into the distant future. In short, she is proposing that we might care for 'alalā, *and* for Hawaiian culture and sovereignty, *and* for the rest of the land and its people.

Of course, there will always be compromises and challenges here—and they will likely always be unequally distributed. But I am inspired by Hannah's effort not to abandon any of these inheritances, to pay attention to their entanglements and to take on the work of nourishing them as a responsibility to the past and the future to come.

Here we see that responsible inheritance requires us to engage with others—their histories, their relationships—to hold open a future that does not forget the past or attempt to reconstruct it, but rather inherits it as a dynamic and changing gift that must be lived up to for the good of all those who do or might inhabit it. This is what Deborah Bird Rose has called 'recuperative work', work that begins from the conviction that:

there is no former time/space of wholeness to which we might return or which we might resurrect for ourselves [...] Nor is there a posited future wholeness which may yet save us. Rather, the work of recuperation seeks glimpses of illumination, and aims toward engagement and disclosure. The method works as an alternative both to methods of closure or suspicion and to methods of proposed salvation.⁴⁴

In this context, 'taking care' is always an historical and a relational proposition; if we're doing it right, care always thrusts us into an encounter with ghosts, our own and others'. Some people live in worlds haunted by evolutionary ghosts: anachronistic plants and lost seed dispersers. Others live in worlds haunted by the wrongs of 1893 and dreams of a sovereignty to come. Others remember 'alalā in the forest when they were children, or are tied to this bit of forest by memories of a grandfather who taught them to hunt.

Responsibility resides in a genuine openness to these diverse voices with all of their complex pasts and futures.

But, importantly, care and responsibility necessarily draw us out beyond the arbitrary and unworkable limits of a purely human space of inheritance and meaning making. In short, 'ours' aren't the only hauntings that constitute worlds. Some plants live and are now disappearing in worlds haunted by 'alalā; some crows are drawn, *called*, to a forest beyond the aviary. And so, paying attention to diverse voices means recognising that nonhumans are not simply resources to be conserved or abandoned, inherited or cast aside, on the basis of whether or not current generations of humans happen to want them around.

In paying attention to some of the diverse ways that nonhumans inherit their worlds, we become aware of just how much is at stake in extinction. For example, there are now suggestions that in captivity the once remarkable vocal repertoire of 'alalā—their raucous calls and mournful songs—is being diminished. Perhaps this is because they have less to talk about, or perhaps juvenile birds simply haven't been exposed to enough chatter from their elders.⁴⁵ Similarly, know-how about predators and how to avoid them may not be being passed between generations in captivity, potentially impacting on their future survival.⁴⁶ In these and other ways, the long accumulated heritage of the species—not just its genetics, but learnt behaviours that took advantage of generations of refinement and adaptation—are now perhaps being undermined to the detriment of any future life for 'alalā in the forest. This is not a criticism of the passionate people who look after these birds, but an unavoidable reality of the captive environment. Here we see in the most tragic of ways that, as a species and as individual birds, 'alalā are historical beings with their own inheritances. Much is at stake *for* them, not just *in* them at the edge of extinction. Furthermore, as we are seeing, the histories that humans tell play a significant role in shaping whether or not, and in what ways, 'alalā are able to take up these heritages to contribute to the crafting of vibrant and thriving worlds for themselves and others.

Ours is a time of mass extinction, a time of ongoing colonisation of diverse human and nonhuman lives. But it is also a time that holds the promise of many fragile forms of decolonisation and hopes for a lasting environmental justice. Here, the work of holding open the future and responsibly inheriting the past requires new forms of attentiveness to *biocultural* diversities and their many ghosts. But beyond simply listening, it also requires that we take on the fraught work—never finished, never innocent—of weaving new stories out of this multiplicity: stories within stories that bring together the diversity of voices necessary to inhabit responsibly the rich patterns of interwoven inheritance that constitute our world. 

Acknowledgements

I am grateful to Margaret Barnaby for allowing me to reproduce her beautiful images, made by hand-carved woodblock printing (www.margaretbarnaby.com).



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3. See <www.environmentalhumanities.org>.
4. George Munro, *Birds of Hawaii* (Honolulu: Tongg Publishing Company, 1944), p. 70.
5. Genese Marie Sodikoff, 'The Time of Living Dead Species: Extinction Debt and Futurity in Madagascar', in *Debt: Ethics, the Environment, and the Economy*, ed. by Peter Y. Paik and Merry Wiesner-Hanks (Bloomington, IN: Indiana University Press, forthcoming).
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11. Connie Barlow, *The Ghosts of Evolution: Nonsensical Fruit, Missing Partners, and Other Ecological Anachronisms* (New York: Basic Books, 2000); Daniel H. Janzen and Paul S. Martin, 'Neotropical Anachronisms: The Fruits the Gomphotheres Ate', *Science*, 215 (1982), 19–27.
12. Culliney, 'Seed Dispersal'.
13. Eva Jablonka and Marion J. Lamb, *Evolution in Four Dimensions: Genetic, Epigenetic, Behavioral, and Symbolic Variation in the History of Life* (Cambridge, MA: MIT Press, 2005); Susan Oyama, Paul E. Griffiths and Russell D. Gray, *Cycles of Contingency: Developmental Systems and Evolution* (Cambridge, MA: MIT Press, 2001). Françoise Dastur offers a very different but fascinating, albeit human exceptionalist, account of the way in which we 'live with the dead' through rich patterns of inheritance and haunting. See Françoise Dastur, *Death: An Essay on Finitude* (London: The Athlone Press, 1996).
14. Deborah Bird Rose, 'Multispecies Knots of Ethical Time', *Environmental Philosophy*, 9 (2012), 127–40.
15. Thom van Dooren, *Flight Ways: Life and Loss at the Edge of Extinction* (New York: Columbia University Press, 2014).
16. Val Plumwood, *Feminism and the Mastery of Nature* (London and New York: Routledge, 1993).
17. Anna Lowenhaupt Tsing, 'Unruly Edges: Mushrooms as Companion Species', *Environmental Humanities*, 1 (2012), p. 144.
18. Department of Land and Natural Resources, *Ka'ū Forest Reserve Management Plan* (Honolulu: Department of Land and Natural Resources, Division of Forestry and Wildlife, State of Hawai'i, 2012).

19. Private land is one of the key obstacles here. In some cases, privately owned lands are being closed off to hunters (perhaps because of insurance concerns or landowners' bad past experiences with hunters). In other cases public land where people might hunt is inaccessible because private properties surrounding it—often remnants of large plantation or ranching properties—restrict direct or open access to it. In addition, it should be noted that relatively little State land is actually utilised solely (or even primarily) for conservation purposes (Interview with Lisa Hadway, 25 January 2013—Hadway is the manager of the state government's Natural Area Reserves System, Division of Forestry and Wildlife, Department of Land and Natural Resources.) At present, the state Division of Forestry and Wildlife (DOFAW) provides 600,000 acres of public hunting area on the Island of Hawai'i. Of this land, '[o]nly about 4 percent is currently fenced with hooved animal populations effectively controlled [a requirement for effective conservation]. Under the most ambitious current plans for fencing and ungulate removal over the next decade, about 17 percent of DOFAW lands on the island would be affected, most of which would occur on Mauna Kea', Geometrician Associates, 'Final Environmental Assessment—Ka'ū Forest Reserve Management Plan', (Honolulu, HI: Prepared for Department of Land and Natural Resources, State of Hawai'i 2012), p. 8.
20. Anonymous interviews, 2013. These interviews were conducted by the author with biologists, managers, hunters, native Hawaiians and other locals in January and February 2013 on the islands of Hawai'i and O'ahu. In most cases I have identified participants by name, but in a few cases, where more appropriate, I have referenced them anonymously.
21. What counts as 'damage' is a complex question. In large part it is precisely this question that I address here. The question is which kinds of forests we are trying to achieve; what values and goals ought to underlie our actions in forests; how might we take a diverse range of human and nonhuman voices seriously in these discussions? Asking these questions is about undermining the obviousness of any assumed goals for forest ecosystems, and being specific about the values that guide understanding and action to shape worlds.
22. Luisa Maffi, 'Maintaining and Restoring Biocultural Diversity: The Evolution of a Role for Ethnobiology', in *Ethnobotany and Conservation of Biocultural Diversity*, ed. by Thomas J. S. Carlson and Luisa Maffi (Bronx, New York: The New York Botanical Garden Press, 2004); Gary Martin, Diana Mincyte and Ursula Munster, 'Why Do We Value Diversity? Biocultural Diversity in a Global Context', in *RCC Perspectives* (Munich: Rachel Carson Center, 2012), pp. 59–64.
23. I accept J. Kehaulani Kauanui's argument about the appropriateness of the term 'colonisation' to describe the social and political dynamics of Hawaiian life after what was technically an 'occupation' of the internationally recognised sovereign nation of Hawai'i. See J. Kehaulani Kauanui, 'Hawaiian Independence and International Law (Episode #23)', *Indigenous Politics on WESU Radio* (2009) <<http://www.indigenouspolitics.com/?p=20>>. Also see Noenoe K. Silva, *Aloha Betrayed: Native Hawaiian Resistance to American Colonialism* (Durham NC and London: Duke University Press, 2004).
24. Donna Haraway, 'Playing String Figures with Companion Species: Staying with the Trouble', in *Que Savons-Nous Des Animaux?*, ed. by Vinciane Despret (forthcoming).
25. This comment was either made directly to me, or presented by others as a claim commonly made, in several anonymous interviews conducted in January 2013. Similar comments can be found posted to the online discussion forum at: <<http://hawaiiisportsman.forumotion.com/t5382-big-island-video-news-hunters>> [accessed 21 August 2013].
26. Kepā Maly and Onaona Maly, 'He Mo'Olelo 'ālna: A Cultural Study of the Manukā Natural Area Reserve Lands of Manukā, District of Ka'ū and Kaulanamauna, District of Kona, Island of Hawai'i', (Hilo, HI: Prepared for the Department of Land and Natural Resources 2004), p. 152. Also see Kepā Maly, Benton Keali'i Pang, and Charles Pe'ape'a Makawalu Burrows, 'Pigs in Hawai'i, from Traditional to Modern' (unpublished paper, on file with author, 2007); Sam 'Ohukani'ohi'a Gon III, 'Pua'A: Hawaiian Animal—or Forest Pest?' (unpublished paper, on file with author, ND).
27. James Clifford, 'Introduction: Partial Truths', in *Writing Culture: The Poetics and Politics of Ethnography*, ed. by James Clifford and George E. Marcus (Berkeley: University of California Press, 1986), p. 10.
28. Michelle Bastian, 'Political Apologies and the Question of a "Shared Time" in the Australian Context', *Theory, Culture and Society*, Preprint (2013).
29. Anonymous interviews, 2013.
30. Silva, *Aloha Betrayed*; Stuart Banner, 'Hawai'i: Preparing to Be Colonized', in *Possessing the Pacific: Land, Settlers, and Indigenous People from Australia to Alaska* (Cambridge and London: Harvard University Press, 2007).
31. J. Kēhaulani Kauanui, *Hawaiian Blood: Colonialism and the Politics of Sovereignty and Indigeneity*, (Durham NC and London: Duke University Press, 2008), p. 75.
32. Comment posted to an online discussion forum for hunters by 'Blue Mountain Traila'

- on 6 June 2012. Available online at: <<http://hawaiiportsman.forumotion.com/t5382-big-island-video-news-hunters>> [accessed 21 August 2013].
33. Comment posted to an online discussion forum for hunters by 'Shrek' on 9 June 2012. Available online at: <<http://hawaiiportsman.forumotion.com/t5382p15-big-island-video-news-hunters>> [accessed 21 August 2013]. There does seem to be something to these arguments. Interviews I conducted with conservationists, alongside their own public submissions to the Ka'ū Forest Reserve Management Plan community consultation process, make clear that most conservationists see protecting only 20 percent of the area as, in effect, sacrificing 80 percent. Many of them would like to see a lot more of the area fenced and ungulates removed. It is unclear exactly where the state stands on this—especially in the long term. Its position seems usually to involve some sort of middle ground that leaves both sides equally unhappy.
 34. Interview with Shalan Crysdale, an ecologist with the Nature Conservancy, conducted by the author on 7 February 2013 in Na'alehu, Ka'ū.
 35. Anonymous interviews, 2013.
 36. Anonymous interviews, 2013.
 37. Jacques Derrida and Elisabeth Roudinesco, *For What Tomorrow... a Dialogue* (Stanford: Stanford University Press, 2004).
 38. Derrida and Roudinesco, p. 4.
 39. Derrida and Roudinesco, pp. 3–4. Derrida seems to be thinking about 'Life' in a narrower sense than I am here, with quite a tight focus on tradition, culture and language (in human, and in particular philosophical, contexts).
 40. The capacity to tell these stories about inheritance is, of course, *itself* a part of what we inherit from those who have come before us. The cognitive capacities, the cultural traditions (including those of evolutionary theory and the broader natural sciences), that make this awareness possible are themselves gifted to us within and by an historical world. Of course, the capacity to care about any of this, is also a part of this heritage, see Thom van Dooren, 'Fledging Albatrosses: Flight Ways and Wasted Generations', in *Flight Ways: Life and Loss at the Edge of Extinction* (New York: Columbia University Press, 2014).
 41. Elizabeth Grosz presents a related understanding of the simultaneously biological and cultural processes or inheritances that give rise to bodies and worlds in *The Nick of Time*: 'Evolution and growth, in nature as in culture, are precisely about overcoming what has happened to the individual through the history, memory, and innovation open to that individual and his or her group. This is true of the survival of species as much as it is of the survival of languages and of political strategies and positions, historical events, and memories', Elizabeth Grosz, *The Nick of Time: Politics, Evolution and the Untimely* (Durham NC and London: Duke University Press, 2004), p. 89.
 42. I have no particular authority to speak on this matter in Hawai'i. But I am drawn by a genuine concern for the future of these forests and all of their inhabitants to attempt to weave my way through these difficult topics, to arrive at some sense of 'where to from here'. Ultimately, however, I do not intend to argue for the 'right to an opinion' on this topic. This paper is written in large part against the proposition that some people might be shut out of conversations that aim to imagine what responsibility and justice might look like in multispecies and multicultural worlds, solely on the basis of the kinds of inheritance that they bring with them, that they don't have the right kinds of history. Furthermore, from my perspective, the relevant ethical obligation is a demand on all sentient creatures to respond when they are witness to suffering, violence and death.
 43. Derrida's primary concern in his discussion of responsibility and inheritance is political conservatism, and those modes of inheritance that uncritically take up and perpetuate the past. In this context, responsibility emerges as a radical questioning of what is to be retained and what lost or transformed. In Derrida's terms, it is only through 'reinterpretation, critique, displacement, that is, an active intervention, [...] that a transformation worthy of the name might take place; so that something might happen, an event, *some* history, an unforeseeable future-to-come' (p. 4). The basic point here is simple and powerful. Inheritance that is mere repetition closes off the future, or rather, closes off the possibility of anything genuinely different and maybe, just maybe, better. Thanks to Ros Diprose for her reading of Derrida in Rosalyn Diprose, 'Derrida and the Extraordinary Responsibility of Inheriting the Future-to-Come', *Social Semiotics*, 16 (2006), 435–47. Also see this paper for a fuller discussion of Derrida's notion of a responsibility 'worthy of the name'.
 44. Deborah Bird Rose, *Reports from a Wild Country: Ethics for Decolonisation* (Sydney: UNSW Press, 2004), p. 24.
 45. For further information see: <<http://www.animal-acoustics.com/current-research-phd/hawaiian-crow>> [accessed 21 August 2013].
 46. Interview with Richard Switzer, 17 December 2011. Switzer is an aviculturist who was at the time heading up the 'alalā captive breeding programme as part of his more general coordination of the San Diego Zoo's Hawai'i Endangered Bird Conservation Programme.