Feeling for Stones

Learning & invention when facing the unknown

Barbara Heinzen
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by

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“We are crossing the river by feeling for stones.”
Deng Xiao Ping, describing systemic reform in China
# Table of Contents

**Preface** iii

**Introduction** v

**Chapter One: The Roxbury Woods** 1

**Chapter Two: Questions from the Sahel** 11
- *Le Gris-gris and the Slave Trade of Gorée* 12
- *Oil Lamps and the Experience of Order* 17
- *The Sandstorm* 19
- *Political Failures of a French Forage* 23
- *The Secretary Bird and the Game of Cards* 29
- *The Complicity of Telephones* 33
- *Conquest and Survival* 35

**Chapter Three: Sitting by a Coal Fire** 39
- *Neighbourhoods of Invention* 41
- *Two Common Fields* 43
- *The Gardens of Queen Square* 50
- *The Myth of the Pristine Wilderness* 52
- *The End of the Wild Wood* 59
- *The Rise of Coal* 65
- *The English Accident* 69

**Chapter Four: The Cameroon Mountain Race** 73
- *A Confusion of Maps* 75
- *Fako* 79
- *Kuva’s Defence* 87
- *Interrupted Evolutions* 90
- *Population Lines* 95
- *Madame Dugast’s Map, Again* 97
- *The Rabbit’s Long Ears* 100
## Chapter Five: Two Curves
- Visiting Geneva 103
- A Story of Two Brothers 106
- Which Wave? 111
- Twenty Years On 115

## Chapter Six: Darwin’s Face
- The Schools of Clerkenwell 122
- Newton’s Neighbourly Windmill 128
- Wat Tyler’s Handshake 132
- Darwin’s Face 137
- The Sugar Valley between Dry Hills 142
- Entering the Hall 147

## Chapter Seven: Nature’s Voice
- The Memories of Stones 152
- Footpaths and Fears 157
- Mosaic Rights and Column Rights 162
- The Mask of Order in Abundant Life 168
- Searching for the Voice of Nature 173
- Stretched and Unstable 176
- Feeling for Stones 181

## Chapter Eight: Moving On
- Neighbourly Experiments, Necessity & Learning 190
- Conquest & Survival, Extremity & Engagement 192
- Ecological Living 196
- Moving On 201

## Appendix – Outline of Main Arguments
- 203

## Illustrations
- Mme Dugast’s Map 101
- Two Curves 118-119
Preface

Each of us has a way of making sense of the world. This is mine. I carry it in my head as a collection of images and questions. Sometimes the image is a diagram, sometimes it is a solitary figure or the final moment of a small story. Some images provide a working answer to a question; others offer the question itself. The images and questions play off one another. A few become solid rocks in the stream, providing a steady place to stand. Many more reveal new currents over hidden boulders, unsettling what I thought I knew.

Underlying this approach is a critical assumption: every individual and civilisation today needs to learn how to live creatively with the natural world which has subsidised our industrial societies since industrialisation began. Now that subsidy must be repaid, not just once, but recurrently in our everyday affairs. We must learn to nourish the natural world we have aspired to control, inventing new human systems never seen before. In this task, images and questions are the essence of “crossing the river by feeling for stones.” They force us to hold things open as long as possible, surrendering to the uncertainties of exploration in order to imagine systemic responses we have never known.

The challenge of writing about something we can barely imagine has been daunting. Intellect, intricacy and emotion have vied for attention. At times, the facts and arguments have taken over. Elsewhere, I have needed to trace out some previously invisible pattern of the whole. Often, the journey has been profoundly emotional, illuminated by some unexpected personal reaction to my own life and work. The book has thus become a plaited narrative of the personal, the professional and the scholarly. It moves between the American northeast of my childhood, my current home in central London, and travels in Africa, drawing on the stories of each place to imagine how our futures might unfold.

In the end, of course, this is just one person’s way of making sense of the world. Others will have other stories to tell. I hope,
however, that my own accidental tale will engage readers enough to draw out the evolution of their own ideas, based on the serendipity of their own lives and places. For that reason, this volume has been kept small and open, an invitation to take one person’s meditations wherever else they might lead. For we are all, whether we like it or not, employed in that great human experiment that recurs from time to time: we are learning to survive in a living world that is – in fact – beyond our control.
Introduction

The last millennium is the one that has shaped us. During most of the past ten centuries, the human population increased slowly, giving us time to adapt our technologies and institutions to the pressures we were gradually placing on the earth’s resources. That leisure is now gone. In the past fifty years – in my lifetime – our numbers have suddenly shot up and our demands on the environment have reached an unprecedented scale. However, the way we live and organise our affairs still reflects the slow evolution of the previous one thousand years.

This combination of gradually evolving human institutions and rapidly building ecological pressures creates an exceptional challenge. It is a challenge that most of us underestimate, assuming that with a bit of good will, some new technologies and a few new regulations, we can put things right again.

However, minor changes and alterations will not be enough. Instead, we need to recognise that we are facing the kind of social reorganisation last seen during the European renaissance and industrial revolution. We need to look again at our relationships with the environments we inhabit. We need to examine every aspect of the way we organise our lives so that we can learn to live differently with each other and with the eco-systems that support us. Above all, we need to understand that – like every other species – we live in nature, not apart from it.

This forces us to confront an important contradiction: nature’s resilience has resulted from years of adaptation to variability and surprise – storms, pests, fires and other shocks. However, our modern organisations have sought to escape the disturbances of nature by increasing our technological control. Fires are stamped out in forests, floods are held back by dams, while diseases of all kinds are curbed through a variety of chemical, biological and mechanical tools. Thanks to this ability to contain the dynamics of the natural world, more people are now fed and housed than ever before.
However, ecologists are beginning to learn that the more successful our controls, the more we store up bigger shocks in the system; the bigger the dam, the bigger the flood if the dam breaks down. Each new shock tempts us to increase our control. In the process we lose the personal habits of resilience, of bouncing back after a disaster and moving on. Instead, we abdicate our responsibilities and ask the experts to increase their power. This is the paradox of control: the more we control the natural world, the more we need to control it and the less resilient all of us – human and wild – become.

The dilemma of resilience and control appears frequently in this book. During most of human history when we have been subject to the whims of nature, we have sought mastery over the natural world to help us survive. Much of the excitement of industrialisation has resided in its promise of prosperous survival through technological command. Now, it seems that the more we dominate the changeability of the world, the more risks we run. No one wants to give up the benefits of modernity, yet we need to learn how to live symbiotically and resiliently with the dynamic diversity of the world. How this might be done, however, is still unknown.

Ecology was not a fashionable word when I was growing up; its vocabulary was still closer to the hothouses of scholarly thought than to my family’s suburban routines. We did, however, seek out the rural spaces of the North American East Coast during summer holidays, heading towards the national parks or renting summer cottages in country places. We also had the luxury of my grandparents’ country house in Connecticut and lived within walking distance of Manhasset Bay, about twenty miles east of New York City. Here we learned to sail in different winds and tracked the limited numbers of birds, fish and other life found in and around the bay. We were not ecologists, but simply people whose education included knowing something of the natural world. Perhaps that is why I remember the first time I read the word “ecology” and felt the power of understanding the relationships between all forms of life and the places we all live.
If ecology has been one persistent echo in my life, a parallel curiosity about society’s transformations dates back to the Vietnam War. Anti-war activists at my university were quick to condemn “the system” for dragging us into war. The system needed to change, but no one knew how to transform the American way of life and business as a whole. This question about comprehensive social change was rekindled in the late 1970s while working with an American livestock project in Niger, West Africa. I read most of what had been written about nomadic herding in the Sahel and visited every livestock project in the region, but noticed a disturbing contradiction between the scholars and international aid. Most of the aid projects were based on development theories that required fundamental changes in the local rules – land tenure and management, water control, family structure and animal ownership. They aimed to increase the productivity of the livestock sector. However, the scholars, who had often lived intimately with nomadic peoples, argued that nomadic herding reflected generations of successful adaptation to the irregular environment of the West African Sahel. In their view, fundamental change could be unwise. Their work raised a basic moral and ecological question about development’s ambition: was it justified? What did development add to the generations of ecological survival? What right did we, American aid workers, have to test our theories on a society that was not our own, especially if our own American system also needed to change?

These doubts contributed to my early resignation from the livestock project, but they left me depressed and professionally confused. I remained fascinated by the process of systemic change I had witnessed in West Africa, but my mid-winter return to New York in 1979/80 was barren and lonely as few friends had experienced the things I had seen. Their support was genuine, but their advice fell wide of what I needed. After much thought, I moved to London to do a PhD in geography among people with a regular working knowledge of developing countries. In 1982, I did my fieldwork in Cameroon. After that, I did not return to Africa for another ten years. Africans, I had decided, needed less Western interference, not more.
By early 1984, when I finished my PhD, I was in debt, unemployed and tarred with so many years of independence that most employers found me hard to hire. I continued to mistrust aid agencies and grand development theories. I hoped to work with a multinational company operating in the non-Western world; it seemed a more honest place to stand as a company’s interests were plain to see. After months of searching, I was given a trial assignment in the Group Planning Department of Royal Dutch Shell in London. Ironically, I was asked to predict the next newly industrialising countries based on their cultural characteristics; suddenly I needed a development theory of my own.

The arguments of this book have their origins in that 1984 paper for Shell, titled “The Social Foundations of Economic Growth”. Using the statistics and ideas of a United Nations institute in Geneva, I showed that countries which had achieved high levels of health and education for most of their population were more likely to industrialise and grow than those with weak social foundations. This turned the conventional wisdom of the day on its head: economic growth did not pay for better health and education; rather, better health and education created stronger economic growth. Just as importantly, this idea could be drawn as a mnemonic double-S curve, the first slowly rising curve represented social change, while beneath it, a lagging, but steeper curve represented economic growth.

The paper ended with the suggestion that this double-S curve represented only one kind of change: the shift from agricultural to industrial societies. A second double-S curve was also visible, one driven by human pressure on the natural system. The economy of this second curve would probably be based on the technologies of resource efficiency and would probably require new social foundations – new skills, new rules and new breakthroughs in health. In an excess of historical imagination, I guessed that the first double-S curve had originated in 1750 with the English industrial revolution and was still spreading throughout the world. The second, ecological double-S curve, I egotistically decided, was beginning as I wrote and could appear almost anywhere. These dates were largely a matter of authorial convenience and dramatic effect, as I wanted to
emphasize the depth of change being described and the simultaneity of industrial ambitions and ecological modernisation.

In the years that followed the 1984 paper, the exceptions to the social and economic double-S curve have revealed a pyramid of necessary building blocks. To create industrial societies, sound macro-economic policies are needed: keep inflation down, the government solvent, and the foreign exchange rate at a reliable level. “Hard infrastructure” – the ability to move goods, information and people – also matters. However, such infrastructure requires financial institutions, legal frameworks, corporate structures and other rules – what some term the “soft infrastructure” – to function well. All these need to be agreed and respected. Neither the hard nor the soft infrastructure can be maintained, however, unless there is a literate and healthy population with the necessary skills. To provide this building block of universal health and education then requires a capacity for political agreement, perhaps the most fundamental foundation stone of all. In the end, even the wisest societies and leaders need an element of luck: accidents of weather, war, international trade and personality all influence the ability of countries to transform themselves from one social and economic system to another.

In short, there is no single prescription for systemic change. Rather, it involves interlocking and often accidental foundations deeply embedded in each society’s history, geography and customs. In my own work, the diagram of the double-S curve of social foundations and economic growth remains enormously influential and is easy to understand. It travels in my laptop along with a sketch of development’s building blocks. I have wanted to redraw the building-blocks diagram for years, replacing the simple pyramid of stones with more systemic loops and arrows. But the building-blocks sketch has never changed, partly because things do seem to require earlier foundations, with the capacity for political agreement supporting them all.

Both diagrams – the double-S curve and the building blocks – have helped me explore the process inventing ecological societies today. I have repeatedly used the lessons of 20th century development to look at the invention of industrial society in
England. When and how did literacy and learning begin to shape England’s responses to new challenges? What was the role of health and disease? Where did the building blocks of hard and soft infrastructure fit in? What was the process of agreeing new rules and what were the politics of invention? The developing countries illustrate how agricultural societies have adopted the known model of Western industrialisation. The history of pre-industrial England, on the other hand, sheds light on inventing a new social and economic system never seen before.

If systemic social invention is the first theme of this book, the question of how we learn to live ecologically is the second important question. I first met this issue while working with the American livestock project in the Sahel. That assignment made me wonder what rural peoples in the non-Western world still know about living resiliently with the variability of the natural world. What might they teach us about ecological societies: the politics, property rights and every-day rules? I might have addressed this through the experience of country people in India, Southeast Asia or parts of Latin America, but here it is an African issue. Not only was West Africa where I first met this question, but suddenly, during the same years that I have been writing this book, a handful of long term assignments have taken me back to Africa after almost twenty years of working elsewhere.

This question of how we learn to live ecologically leads directly into the third organising issue: what are the creative consequences of conquest and colonisation? Geographers studying the impact of Christopher Columbus’s arrival in the Americas refer to it as the “Columbian encounter” and my own American society is one of its consequences. African societies today are still shaped by the more recent experience of colonial conquests and its continuing encounters. More remotely, pre-industrial England was shaped by the Norman conquest, another traumatic encounter. English history, however, suggests that there can come a time when two unequal societies – one conquering and one conquered – change their relationship to each other, creating opportunities for a different kind of learning and invention. But how does the tragedy of conquest become the innovations of a more beneficial engagement?
This question has crept into the book because post-colonial societies today may be the most critical cutting edge of our ecological future. Social and ecological pressures are most intense in these countries where the land-based knowledge of agricultural economies is still relatively close and resonant. It is just possible, therefore, that modern ecological societies will emerge not in the Western heart of the industrial system, but in the remote peripheries where different conditions and beliefs apply. That is why the experience of conquest is the third question I explore.

Conquest and engagement, living ecologically, and the invention of new social systems are three complex and untidy issues. My task has been to reduce that complexity to something an intelligent reader can grasp. This book is an experiment on that frontier. It uses a personal memoir as the autobiographical spine for a structure of questions. While the memoir is told more or less chronologically, the questions cross one thousand years, three continents and three conquests, exploring social forms and transitions based on land, industrial innovation and ecological resilience. What emerges is less a logical argument than a structure of pictures and stories that suggest how the future might unfold.

This style follows from two core beliefs. First, we are living in conditions we do not understand where obvious solutions are hard to find. Good questions, I believe, should contain the innovations we are likely to need now. Second, complex subjects can be tracked more easily by exploring them from a single point of view, in this case the story of one person’s travels. This personal story is illustrated with anecdotes, images and sayings which are used to simplify tangled observations. These are then linked to other simple images in order to complete our understanding of the whole. It is my hope that this approach will help all of us comprehend the process of learning and invention as we face the unknown thresholds of unpredictable change.

Most people are frightened by the unknown. Pioneers in all times, however, have understood that by embracing the empty spaces they can free themselves from the frustrations of working with unsuitable tools. This risky freedom has often been perilous, but just as often it has opened up possibilities never seen before.
This book is therefore dedicated to all those who understand both the perils and possibilities of pioneering.
Chapter One

The Roxbury Woods

When I was a child, the happiest place in the world was my maternal grandparents’ country house in Connecticut. It was a white clapboard house built in 1790 in the foothills of the Berkshire Mountains. I remember it as light, graceful and full of time. There were a hundred forgotten stories in the iron latches on the doors and in the smell of old dust, old wood and new polish. I adored that house – we all did. Each time we returned as children, we spent hours memorising it, checking the places where our favourite treasures were found.

Our drive to north western Connecticut from the Long Island suburbs was on roads that meandered through villages, woods and fields. Eventually, after driving past the churches at the bottom of the hill, we turned up Weller Bridge Road where my grandparents’ property was marked by a parade of old sugar maples with huge trunks of deeply fissured bark and leaves that turned bright yellow in autumn.

The house stood on its own on a hill facing south towards the road. It had been a farm, but my grandfather had pushed back the fields to make a lawn and garden. By the kitchen door was a flagstone terrace planted with gaudy portulaca in the summer. Beneath the terrace was a border garden with roses sheltering against another stone wall. Further away was an iris bed, a children’s garden, and a raspberry patch. Behind the house, next to the children’s garden, stood an ancient mulberry tree with wide matriarchal branches spreading over another stone wall. On the other side of that wall stood the remnants of an apple orchard. Every summer and autumn the kitchen would be filled with raspberries and apples being prepared for the freezer or pantry. At the edges of the lawn and the orchard were fields of hay or corn that my grandfather rented to a neighbouring farmer. Beyond the fields came the woods, second growth woods of brambles, birch and young maple surrounding a deeply serious grove of white pine. This grove stood
on one side of a corn field while a small pond was hidden in the
woods on the other side.

My grandmother, with an instinct for children few people
possess, had several special rituals just for my three siblings and me. She gave each of us a green metal lunch box large enough to carry a small flask, a sandwich and something sweet. In the summer, she would pack lunch for us and send us off to explore the fields and woods around the house. There were about sixty acres in all, but to us it was the whole American frontier as we set out each summer for our inspections and tours.

It was another twenty years before I earned a doctorate in geography, but those sixty acres gave me my earliest training. With that instinct for boundaries one finds in large families, my two brothers usually explored the pond, while I explored the fields and woods leading into the pines. On both sides, we were rapacious amateur naturalists. The boys set off with fishing rods; I set off with a horticulturist’s collecting basket. We made no great discoveries, kept no diaries, and never filled sketchbooks with drawings of bones, feathers or lichen. By comparison with our historical predecessors we were messers, closer to the school of Tom Sawyer than that of the naturalist, James Audubon. But it was, all the same, where we began to see the land and its creatures close at hand, where we learned to observe and wonder in equal measure.

While the boys walked up through the old orchard and across the corn field, I went in the opposite direction across the lawn, past the iris bed and into the first hay field halfway down the hill. I cannot think of this field without looking for the bright orange head of the butterfly weed, the vestigial remnant of another ecology when hay fields contained a mixed crop of plants and grasses, rather than the single crop I saw. I tried collecting the butterfly weed two or three times before giving up. It would never transplant in summer while it was blooming and we should have known as much. As an excellent gardener, my grandmother very likely did know, but like all good experimenters and greedy gardeners she was willing to give it a try. Equally, like a good teacher, she was willing to let me learn this for myself without any comment. Much later a neighbour in London who had been raised on an Irish farm told me never to root
plants in months without an “r” – the summer months of the British Isles and New England. Only then did I realise that the business of flowering was too demanding to allow a move.

As it happens, though, the hay field was more often empty of the orange weed as I waded through the dry grasses towards the stone wall that marked the boundary of the wood. Here I always found different species, ones that lived in the shade of the undergrowth. I was usually looking for small plants that I could put into a terrarium: mosses and lichens of different kinds, partridgeberry, small ferns and a flat-lying orchid called the rattlesnake plantain. When I returned to the house, my grandmother would find a clear glass bowl, a fish bowl or large cheap brandy snifter, in which to plant my collection. We would put down a layer of pebbles for drainage, some charcoal ‘to keep it sweet’, a little soil from the woods and then the plants artistically arranged around some white quartz ‘to brighten things up’ and recreate a rocky New England woodlands in miniature. Through a lid of clear glass we watch our woodlands closely for a few days, looking for signs of mildew or drought. At its most perfect, it was a self-sufficient world with air, moisture and growth in a happy balance that could maintain itself for years at a time. A self-consciously Victorian artefact, it was the small descendant of Wardian cases, large glass containers where much larger scenes had once been planted.

Collecting, though, was only part of the ritual. It was the excuse for being alone in the woods and simply looking around. It was also a lesson in finding my way where there were no street signs or houses, not even a foot path, so that I had to learn to read the woods, the way we all learn to take our bearings when we travel alone. There was one landmark I always looked for – a small secret field I entered through a patch of bracken that came up to my chest and smelled of pungent dry summer. I thought of this as a field that had belonged to an ancient people in the distant past and always stopped to warm myself in the sudden sunshine of the clearing. Sometimes I had a book with me and sat down to read; sometimes I ate my lunch. It was my place. I called it Ceres field and always believed that no one but me knew it was there, though that cannot have been true.
What I could never remember as I left the field was how many overgrown stone walls I would have to climb over before I reached the pines. Had I been wiser, I would have recognised the stone walls as the boundaries of old fields and would have counted the fields the way a New York child counts the city’s blocks. But like Ceres field, the tumbling walls were not so much a landmark as a memory, the mark of hands that had since died, of winter frosts that had heaved the ground and dislodged the dry stones, of something tried and abandoned and now nearly forgotten.

The pines were another important place. They were in a plantation with straight lines, little undergrowth and tall crowns close to the sky. The ground was littered with needles that were soft and fragrant. The light came through as if by design, like the light entering the rose window of a cathedral. Plantations are unfashionable these days, but many of my favourite terrarium plants were found in these woods. The pine forest had a peacefulness that was missing from the chaotic brush of regeneration surrounding the stone walls I had passed on my way. I don’t know who planted the pines. They preceded my grandparents’ ownership of the property, which came around the same time I was born in 1949. Nor did I imagine a future when the pines would be harvested. They were, like the stone walls, simply there, witness to an earlier plan for making the land yield a less stony profit.

Next to the pines was a field of corn, on the other side of which was a small footpath leading to the pond. Sometimes I would walk as far as the pond where I would find my brothers fishing or catching frogs or engaged in some primitive civil engineering only they could understand. I thought of this as my older brother’s territory and only went there very cautiously, never certain whether I would be welcomed or driven out by the kind of teasing my brother knew was particularly effective in chasing me away. One time, we met up accidentally at the gate leading into the corn field that led to the pond. My brother was with another boy who lived nearby. They were sitting on one of the walls eating raw corn off the cob. I was invited to join them and was given an fresh ear of corn which was cool and sweet.
There was one other place my grandfather owned in the town—an abandoned garnet mine where we could pick up rocks with crystallised bumps of garnets stuck in them like currents in a bun. We were never allowed to go there alone and in the magical world where children dream, the garnet mine was a secret forbidden site of great treasure. In fact, it was a sheer-faced rocky hole in the ground, as overgrown and abandoned as the tumbling stone walls hidden in the woods. The garnets themselves had once been used for making sandpaper, not jewels as we extravagantly imagined. Like the stone walls and Ceres field, the garnet mine was something touched by another age and another kind of industry. We reached it by driving through the woods down a wide dirt road. The road was usually empty of other people, although someone must have once used it every day to take things into and out of the quarry. Now both the road and the mine were silent, left behind by some change in the times.

For my grandmother history was something personal. She kept all her letters carefully bundled together and labelled. She chronicled our lives with photographs and saved the diaries she had kept as a young university woman during the First World War. One of the few professional women of her generation, she had worked at Time/Life before moving to Connecticut and would tell us the history of her times through the photographs in her little room and the many curious things collected in the house. For my grandfather, history was on a broader scale, understood in its sweeping movements and larger patterns. His career had been in advertising where he had been one of a handful of executives to build up his firm and his industry from 1929 to the mid-1970s. As he had explained it once to me, ‘Once you have mass production, you need mass advertising to sell it,’ and he was one of those who helped to invent mass advertising. Both my grandparents came from modest families of clergymen who had lived in America for generations, sometimes in New England, sometimes in the mid-West. Both had been born at the turn of the century. Both had gone to small liberal arts colleges in Ohio and both had moved to New York after the First World War. Both had worked as volunteers before the United States entered the war, my grandfather driving an ambulance in France and my grandmother organising supplies for the wounded. They had both seen the twentieth century unfold in its technologies,
its conflicts and its commerce. This was their century and they held an intelligent belief in its progress and potential.

The house and life they had in Connecticut was the reward they had earned in their working lives. It was also, I think, a way of returning to the simpler domesticities they would have known as children, when homes were close to fields and orchards and the food in the kitchen was more likely to have been grown in the back garden than thousands of miles away. The ritual of autumn preserving in the country house was an act therefore of frugality and memory and domestic skill, an attempt to link the mass industrial age they had helped to create with the more agrarian age they had known as children.

And yet, all around them, the last of the agrarian age was slipping away. Farming was no longer profitable in the hills of Connecticut when produce could be brought in from more fertile farms elsewhere in the country. Nor was there much need for the sandpaper garnet mine or the old water mill that rested in ruins by the Shepaug River on the other side of the hill. The needs these industries had once met, were now being met by different towns, farms and factories elsewhere. Not even the butter on our table came from the dairy farm next door, but was bought in the Grand Union grocery store some miles away in New Milford. The thriving rural life of the late 18th century which had created the wealth to build the country house on Weller Bridge Road was almost completely gone. The house itself would have fallen into decay if my grandparents had not bought it and restored its timbers and paint to last another generation.

However, some anachronistic remnants of an agrarian life were still visible when we went up to Connecticut each summer. One of the most evocative was Hanny’s stand, a small wooden shed by the side of the road leading to the Shepaug River and the main road into New Milford. Often on our way back from town we would stop in Hanny’s stand to see what had been left out for sale. There was never anyone in the stand – only a few pints of berries, a few baskets of tomatoes, some ears of corn or other fresh produce resting on the wide shelf that ran along the walls of the shed. In one corner was a small box where my grandmother would leave money to pay
for her purchases. She would also leave behind the empty baskets taken away on her last visit so they could be used again. Everything was simple, trusting and understood. I remember meeting Hanny only once or twice, a thin woman with the lined tan face of someone who always worked outdoors.

Although they were newcomers, my grandparents knew the names of all the old families and their histories since the town began in the early 18th century. My grandfather was the town treasurer for many years. He brought his considerable business skill to town management, continuing the local self-governance Alexander de Tocqueville had extolled as the bedrock of American democracy in 1831. For her part, my grandmother stitched herself into the overlapping circles of sociability that constituted the sinews of Roxbury society. She was a member of the gardening club, the women’s club and some local civil defence group. I have clear memories of driving with her to some hilltop to watch for enemy planes. This seems laughable now, but in the early 1960s, at the height of the Cold War, my grandmother would have remembered Edward R. Murrow’s radio broadcasts of the German blitz on London and offered her time to spot for planes.

These public activities interrupted the easy indulgence we were given as children and, in our natural egotism, they seemed like irritating and unnecessary chores. They were jobs that took us away from the cocoon of our own interests, forced us into the strange world of the town itself, and represented a galling intrusion of duty and obligation. What we could not appreciate as children was that these were also intrinsically political activities, helping to sustain the community trust that was perhaps the greatest wealth the town could produce at that time. For my grandparents these chores were also their announcement to the older families that they would not live in the town as city strangers, but wanted to be treated as fellow citizens, as insiders who had a stake in the present and future of the area. That recognition was a long slow prize, and one I remember my grandmother laughingly saying could never be won, even after twenty years of living in the house on Weller Bridge Road. So in another sense, my grandparents’ engagement in local affairs was something that originated in their own public courtesy, a skill that
had been shaped by their own upbringing in similar country towns, as natural to them as getting up in the morning.

My grandparents were, however, the unwitting vanguard of the next economy of the area. This economy would not be based on the wealth of the local farms, but on the wealth of Manhattan and the greater America which New York City was busy organising after the Second World War. They were among a handful of successful people who came into the country like privileged aliens, with the bulk of their wealth flowing from the city. Many of the newcomers lived like expatriates in a community of their own, clubbable and self-referential, isolated from the local farmers and businesses who continued to struggle with a much harsher local economy. As the older families died out, it would be the mobile newcomers who came to dominate the town.

But these were developments we did not see then. As children we found a landscape slowly healing itself after the intensive exploitation of an earlier age. Growing up as we did in the transient world of an ambitious New York suburb, the country house was where we put down our roots. We witnessed the returning wildness as it grew over the old fields. In the short years that we were children, we grew into the landscape and it grew into us, tissue by tissue, cell by cell, generation and regeneration inextricably intertwined.

My grandparents sold their house and sixty acres soon after I left university in the early 1970s. My grandmother’s health was poor and my grandfather had decided they should move to a smaller place closer to good hospitals and medical care. No one else in the family could afford to keep the big house, so the rooms were emptied and many of the things my grandmother had collected were sold. Our country house was gone.

A few years later, while driving up to visit my grandparents near Hartford, I took a route through Roxbury and drove past the house on the hill. It looked much the same, but I wanted to visit the woods and remembered a dirt road that ran along the back edge of the pines. I found the road and drove down it, disoriented to be approaching things from the wrong side. The pines were still there,
but a great gash had been opened up in the trees by my brothers’ pond. A new drive had been laid down and an ugly little house had been built where they used to go fishing. I stood in the road and cried. I could not stop crying. Selling the house had seemed wrong but inevitable; this was a deeper crime, a smothering of the regeneration that had begun around us as we were growing up. It was not a field or garden that had stolen our woods, not the replacement of something growing with something else that would grow. This was an ugly end of growth altogether, throwing down hard concrete where the soft soil of the woods and chaotic glacial stones had once tumbled together. What period of regeneration could ever follow this?

A good geographer can read the landscape and know its history and its potential. In the bright dry sunshine of that summer’s afternoon, standing in the dust of the back road, much of the history of those acres was still around me, but the future seemed hard and grim, homogenised and infertile. My own sudden tears had caught me by surprise; the grief was deeply personal and inexplicable, caught up perhaps with some other now forgotten loss that year – a love affair that had ended or a hope that had died. But those are not the losses I remember now, just this one: our living woods killed by concrete at the edge of the pond.

It would be overly dramatic to say that from that afternoon it was inevitable I would leave home. It was however the beginning of exile. I felt my roots in America were being destroyed by the behaviour of people I did not understand. When I began to travel a few years later, I did not know when I would return. Wherever I went I studied the landscape, trying to read the signs of its history, trying to understand what relation had been established between human societies and the natural world. I still look for places where we are not destructive, but instead creative participants in the renewal of life and diversity – where we are not cancerous parasites in the natural body, but symbiotic mitochondria in the very guts of the world.1 If I am led by my emotions in this searching, it is not because emotions have taken me over, but because they are part of

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1 Mitochondria are a separate form of life that lives in nearly all cells, helping them to function. They contain enzymes that assist cellular respiration and the metabolism of fats and proteins that produce energy. In active muscle cells, like the heart muscle, the mitochondria are large and numerous. The Macmillan Encyclopedia, 1986, p. 820.
the guidance we have inherited from our evolution, the instincts that have helped us survive.

As intellect and emotion shape the questions that guide me, I keep asking myself: how did we come to be here with too many people using too many things in a world that has limits we cannot forever avoid? And beyond that question lies another one: What might be our way out? How might we – how can we – shift from the way we live now to some new social and ecological order that we can as yet barely imagine?
Chapter Two
Questions from the Sahel

In the mid-1970s I left New York. For most of the next nine years I was ‘living in the wind’. I survived on little money, a lot of independence and a habit of alert, but often absent-minded observation. Over the years, my grandmother had saved a few thousand dollars for each of her grandchildren, which she gave us when we left university. This, together with my own savings, occasional jobs, loans and scholarships, kept me afloat. It was a penny-pinching, improvident lifestyle, a time when I was largely marginal to anyone’s affairs as I travelled, wrote and worked on my PhD. The day I was offered my first short assignment with Shell, I walked away from their offices on the Thames elated that I had finally found work. But it overlapped a thin mourning for the end of my open years as I prepared to enter a more comfortable, but much smaller sphere. As I walked home over the Waterloo Bridge, I reminded myself that no one could take away the time I had spent wandering without maps or destinations, when my own eyes and instincts were often my best company and my independence held invisibly inside.

In those nine years, my most important teachers were among the peoples and landscapes of Africa. Time and again I was shown situations and circumstances that raised questions I did not know how to answer. Even now, twenty years later, my knowledge of African affairs is either very particular, or instinctive and inchoate. Yet, my intellectual debt to this place and these people is recurrent and profound.

That said, outside the rational dissections of my PhD thesis, I have never been able to write about my travels in Africa in a way that I could trust. The international image of Africans is riddled with stereotypes, racism and relentless misinformation. For years the place has been renowned for careless violence and superstition, for the poisonous behaviour of its greedy leaders, and for the carnivorous wildlife of a pristine landscape somehow isolated from human affairs. It has been a continent of dismal news and – more
recently – of unexpected statesmen like Nelson Mandela or Kofi
Annan. I have not wanted to reinforce the old stereotypes or the
new, but have not known how to counter them. Worse, I have never
lived for more than a few months in Africa and lack the intimate
knowledge that undermines crude caricatures. What I have instead
is a handful of brief glimpses, hunches and vignettes collected
during intense short assignments between 1976 and 1982 and from
the late 1990s to 2003. Now I have decided to test these traveller’s
hunches against the deeper research of more committed scholars,
using their work to explore the questions each new visit to Africa
has raised. But why focus on Africa?

For me, Africa has been the place where the questions facing
all societies today have been most nakedly exposed. These
questions were not revealed rationally, but contextually, caught by
tiny stories – moments when histories, places and people would
briefly converge and be illuminated. Like 19th century drawing
room tableaux, or Holbein’s painting of The Ambassadors, these are
moments when suddenly an age, a conundrum and a coincidence of
personalities are present in a single sharp frame. Haunted by
unpredictable violence, Africa is a place where people face
formidable challenges every day with courage and humour. They
might swing between apathetic acceptance and proud endurance, but
are repeatedly inventive and resilient when things go wrong, relying
on laughter when times are bad. Finally, it has become important for
me to write about Africa because, if I have learned so much, what
else might others learn?

Le Gris-gris and the Slave Trade of Gorée

My travels in Africa began when I landed in Dakar, Senegal
with only a vague idea of where I would go or why I was there. I
had arrived from southern Spain where I had been learning Spanish
in a society just cautiously lifting its head after the death of Franco,
the dictator who had won the 1930s civil war and then ruled Spain
for another forty years. However, I found the civil war’s legacy of
intolerance and suspicion was uncomfortably alive in 1976. When
that legacy was allied with the Catholic puritanism and gossip of the
village where I lived, daily life became a gauntlet of prying mistrust
and incomprehension. So I left, deciding to push on to Dakar in Senegal.

Dakar is a port on the west coast of Africa, founded by the French in 1857. In 1902 it became the colonial capital of French West Africa which stretched south of the Sahara from the Atlantic Ocean to the western boundaries of Sudan. At independence in 1960, it became the capital of Senegal. It is a hot sandy town cooled by winds from the Atlantic Ocean, but marked by the desert’s flat light and fine dust. I never got to know the city, spending only a few days there before taking the train to Bamako. There was, however, one moment which sticks in my mind to this day: when I stood with a Senegalese university student on a harbour beach and threw a small leather gris-gris into the sea as we faced the island of Gorée.

A few years ago, I met Gene Gendlin, a philosopher living in New York, who argues that in each moment we experience both the moment itself and everything that is carried forward into that moment from our histories, our knowledge, and our understanding of what surrounds us. We feel this whole experience in our bones and tissues long before it reaches conceptual thought. However, with a bit of reflection and some discipline we can trace the felt sense of this whole and understand it in a new way.²

If I take Gene’s ideas and think about that moment in Dakar, I find a bundle of connections that cross centuries and many miles of ocean. There is first the journey that brought me to Dakar. It began when I left the Spanish village in the Alpujarra and sailed from Seville to the Canary Islands where I hoped to find a ship that would take me on to West Africa. This plan, such as it was, was consistent with one of my private rules as a traveller: always travel by land or sea, never by air. If I had been travelling even twenty years earlier, it would have been easy to stick to this rule. The Canary Islands had been a port of call on the African route for hundreds of years and soon after I landed, several people told me that ships for West Africa did indeed pass by. I therefore confidently decided a few days later not to waste my limited funds on a first class cruise ship cabin; another ship would surely soon arrive.

But nothing came. Day after day slipped away as I waited and asked at the port to see what new ships had landed. At one point, I met a Senegalese traveller who said there was a ship travelling to Dakar from one of the other Canary Islands. We sailed to that island together, but his imaginary boat, and others he claimed to know, never came. I was simply being duped and led an inexplicable dance through the islands by this quiet respectful trickster whose intentions I never did understand. Eventually, after several small confusing adventures, I gave up and was forced to fly. When I finally landed in Dakar, I had fewer funds than I had hoped, a shattered confidence, and considerable doubts about the society I was entering. How would I ever again be able to identify a lie?

That particular misadventure indirectly led me to the harbour beach because I wandered through one of the suburban housing estates of Dakar looking for an address the Senegalese trickster had given me. I was motivated by idleness and curiosity to see where it might lead. Needless to say, the address was bogus, something I confirmed when two women sitting outside with a new-born baby called me over for a chat. Over the next few days, I visited this family several times, learning to feel my way and asking for their advice on where to go and how to behave in their society. Their advice was invaluable and very succinct: “Si vous êtes très simple, vous serez bien.” I would be fine, they said, as long as I was simple and straight forward.

One day when I went to see them I brought with me a small square leather pouch I had found on the street. Someone in town told me it was a gris-gris, a Koranic verse written by a holy man and sewn into the leather which could then be worn as a talisman against misfortune. I have long had a fondness for accidental things and took the gris-gris with me to show my new friends. Rather than sharing my delight, they were immediately worried. This thing is bad, they told me. Gris-gris like this are often thrown into the street to cause trouble to others. You must take it to the sea and throw it away. The next evening I went down to the harbour with Charlie, a son of the family who was studying economics at the university. As we stood together, I threw the gris-gris out into the water. Almost immediately I felt an inarticulate relief, as though the misadventure
that had begun in the Canary Islands was finally over. So this is the first tableaux: standing on the harbour beach with Charlie and throwing a gris-gris into the sea as we faced the island of Gorée.

That sense of relief, based on someone else’s superstition, immediately poses all kinds of questions to a rationally educated mind like mine. But there was another strand also running through this simple moment. The island of Gorée was a slave-trading island starting with the Portuguese in the 15\textsuperscript{th} century, but continued by Dutch, French, British and African traders for the next three hundred and fifty years. As he told me about the island, Charlie said, “I understand that in America blacks are very badly treated.” “That is true,” I replied, “but you must remember that it is not just that they are black, but also that they were slaves.” “Ah yes,” he replied, “we have that problem here, too.”

The links between racism and slavery are just beginning to be examined, as is the lingering damage of the slave system in Africa, Europe and the Americas today. So the harbour-side image poses a wider question about the durable perversities of economic systems that are fundamentally wrong, one I felt in my arm as I threw the gris-gris away. Could I, for one, ever outgrow the history with which I was born and raised? More broadly, what does it take for a whole society’s most implicit rules to be transformed? Where and how do such changes begin?

There is still another truth in this tiny story: we – Africans, Americans and Europeans – have been connected to each other for a very long time, with our economies, ecologies and societies interacting over hundreds of years. Before the industrial revolution began, it was African slaves who worked American plantations that created the sugar profits which financed the earliest investments in Britain’s industrial transformation. That means that the great industrial revolution was first funded by African slaves through the profits made trading them and through the profits of their labour without pay. Yet, as North America and Europe developed ever wealthier industrial economies, African societies and the
descendants of African slaves were left behind, an inequality that still stalks us today.³

For me this history raises a personal question I want to answer one day: what was my family’s role in the triangular trade that linked African slave trading to North American sugar which was linked to the wealth invested in early English industry? For the moment, I have only one small fact to conjure with: my grandmother used to talk about two of our ancestors: an 18th century woman named Hannah and her husband, Thomas de Gruchy. Thomas de Gruchy was a Channel Islands privateer who fought in the American Revolutionary War and donated four cherubim candlesticks to the Old North Church in Boston. But what was being carried in de Gruchy’s ship, The Queen of Hungary, as he went raiding in the Atlantic? What did he capture, keep and sell? How many slaves were part of his bounty and his wealth? And, if I bring these questions back to the trickery of my Senegalese traveller in the Canary Islands, how much does this history – and its evolution since the 18th century – still infect the interaction of Africans, Americans and Europeans today?

When the slave trade began in the 15th and 16th centuries it was a trade between equals. Africa and Europe had similar levels of technological development. Both had systems of labour and punishment that indentured people for accepted periods of time. Both exchanged their own goods for things produced elsewhere and recognised that the mix of human character was everywhere the same. In fact, Shakespeare used the wealth of an African to describe Juliet’s beauty, comparing her to a rich jewel in an Ethiop’s ear.⁴ Yet the normality of difference in Shakespeare’s time became hierarchies of contempt in our own.

How will we re-establish that respect of equals that once existed between Africans and the rest of the world? One cannot change history, but how might we outgrow its legacies of fear, domination and scorn? These are the questions that linger as I see the two of us standing at the water’s edge facing the old slave-

⁴ William Shakespeare, Romeo and Juliet, Act I, Scene 5.
trading island and throwing a mischievous *gris-gris* into the sea. They are resonating questions that bound backwards and forwards along the line of a single throwing arm and a few short words.

**Oil Lamps and the Experience of Order**

A day or two later I left Dakar and took an overnight train eastwards across Senegal to Bamako, the capital of Mali. This is part of the Sahel, a geographic shoreline south of the Sahara Desert where enough rain falls to support livestock and a few crops. I took a seat by the window in a carriage with large soft seats that allowed some comfort for sleeping through the night. The carriage was full as we pulled out of the station around midnight. As we left the city behind, people settled in with their children and their bags before gradually drifting off to sleep. I slept lightly, waking repeatedly to look out the window or around the carriage as others dozed. Outside, the night was black, as black as any night I had ever known, no urban glow altering the darkness. The train travelled steadily on, like some creature of the landscape itself, pausing mysteriously from time to time, then starting up again. In the dark, the landscape was barely visible. What I could see was flat and shapeless -- no great rivers, mountains or even small rises out of the plain. Nor could I see any stands of trees, or stream courses creating small strips of woodland on their banks. It was a landscape I could not read – I did not know its history or its logic. It seemed deserted and uninhabitable.

And yet, the image of the night train which has endured most vividly through the past twenty-five years is of an uneven row of oil lanterns set down by the railway line wherever we stopped on our route. The lanterns shone in the black night with a soft yellow glow, a weak evocative light, as if we were no longer travelling in the latter half of the 20th century, but in some earlier time before the brilliance of electricity. There was a quietness in these oil lamps, and in the sound of women’s voices which came up to the dark carriage windows as they offered freshly cooked food to the passengers inside. Someone did live here and may have lived here for generations, learning to survive in a landscape that seemed marginalized by drought and old soils. How was that possible? What did they know and how had they adapted to this dry and
difficult land? Over the next few weeks, this question of adaptation and survival continued to provoke a hazy mixture of mystery, confusion and respect.

As my Dakar train pulled into Bamako the next morning, I was invited to stay in the home of one of the other passengers. I accepted and spent several days in the courtyard of a customs agent who lived with his three wives, a number of small children, and a gaggle of young men I never sorted out. I often think of this courtyard. There was a rhythm and order to the days that resembled the family in which I had grown up. At the same time, nearly every convention of family life was different. The father had three wives, not one. He was responsible for all of them and for the young men who had been sent to him by his other relations to help advance their education and their careers. Each person’s role was clear. The responsibilities were shared in a way that everyone understood. The small children were safe inside the walls of the compound, the babies always held on someone’s lap, away from the harm of the hard, swept ground. The young men all slept together on a large bed in a tiny windowless room, where I, as an un-placeable but welcomed traveller, had a single bed against the opposite wall. Whereas my family in New York had gathered everyone around a single round table for meals, arguing with my father on any question that came along, this family ate in shifts ordered by status, with the father eating first and taking the best of the food, his authority unquestioned. Yet, I would see this same authoritative man respectfully consulting his first wife on some matter of grave concern, while during the day I watched her organise a small business in which the children were given trays of home-made sweets to sell in the streets outside.

I did not stay long with the customs agent and his family. I was mindful of the saying that “house guests like fish smell after three days,” and did not want to overstay my welcome. I was also curious to see what life was like away from the big towns and main roads. A few days later I accepted an invitation from an American Peace Corps volunteer who had been living for several years in a village some hours away from the capital. I cannot remember what the volunteer did; I only remember his isolation, his sense of futility and his spooky submersion in the rumours of his rural neighbours.
These affected him in the same way that the superstition of the *gris-gris* had affected me, neither wholly believed nor completely dismissed. One rumour in particular had gotten under his skin: a local belief that head hunters were operating in the neighbourhood. The head hunters, the villagers said, would steal people who worked alone in the fields, killing them to sell their shrunken heads for use in rituals on the Ivory Coast.

Maybe it was true. Maybe head hunters did prowl the fields and snatch people away. Maybe it was a legend that had its origins in the slave trade of earlier centuries, or perhaps it was a story circulated in order to frighten people into some obscure compliance. It could also have been a tale to explain why people who left their villages to look for work simply vanished and never returned. Their exodus had accelerated in the years immediately before I arrived, when the Sahel had experienced one of the worst droughts of the century; I suspect that many people had still not returned even four years later when I was visiting the region. In such circumstances, a story of head hunters was entirely believable. Why else would people not come home?

I returned to the family in Bamako for a few days before leaving to continue my travels. The oil lamps along the railway tracks and the busy discipline of the custom agent’s family left me with powerful images of an orderly society shaped by clear rules. It was a domestic order different from my own upbringing, but coherent and accepted, a normality with a logic of its own. But the witchcraft stories of the bush were stories of disorder, of people who were exposed to dangers they struggled to explain. From time to time, as I travelled alone, I brushed against glimmers of that disorder and danger, caught in a small gesture or in the hostility of a guard on a duty somewhere.

**The Sandstorm**

After leaving Bamako I took a bush taxi to Ségou to pick up the river boat that would take me along the Niger River as far as Gao, just north of the border with Niger. I was told there was no public transport in Gao, so I would have to trust my luck once I got there, but the river was reason enough to travel on. I found the river
boat ticket office and took a cabin on the upper deck. As I moved in, I noticed that most of the upper cabins had been taken by young Western tourists who wanted to say they had been to Timbuktu, one of the stops on the river. Below us was the majority of passengers, travelling with great bundles of bedding and food spread out in a chaotic, spontaneous camp on the open lower decks of the boat.

As I retreated into the silence of the stranger, the river itself was my greatest company. At one time in its geological history, the River Niger flowed north and east across the West African plain, before disappearing in a wide delta that emptied all the river water into the sands of the Sahara. These days, the river turns south and empties into the sea, but its ancient inland delta in the desert remains, a marshy plain gathering around the river. This oasis of seasonal swamps and fresh grasses has nourished the herds and peoples of Mali for centuries.

I was probably on the river boat for only a couple of days and nights, but I felt as if I were travelling at the centre of a very particular world. The life of the region gravitated towards this ribbon of slow-moving water brushing up against the desert before turning south to the Atlantic. The boat threaded itself through the channels, gathering up and redistributing the bits and pieces of local commerce, families and connections. It nosed its way slowly, lazily, from village to village and bank to bank, making a peaceful steady progress, calm and placid. That first night I fell asleep to the heartbeat of the engine pumping as steadily and rhythmically as the clickety-click rhythm of a night train running over its tracks.

On the second night, sometime either side of midnight, I woke up, disturbed by an irregular cacophony of shouts, high winds and the scraping noise of the hull rocking on sand. We had run aground. I dressed and went outside where the wind had whipped up a sandstorm, confusing the pilot and perhaps filling the normally deep channels. I walked forward on the deck and looked out over the bow onto the crowded camp of the lower deck. A large floodlight was blazing over the confusion of travellers, families and traders, each grouped around their bundles of goods and supplies. Overboard and out of sight, somewhere between the railing and the river, the crew were wrestling with the wind and the boat to bring us back into
deeper water. Behind them, the floodlight illuminated a nearby bank, a disintegrating slope of loose sand. There was considerable mayhem, a scrambling among the travellers below to cope with the storm’s tornado, while around me a few of the other European passengers had gathered to learn what was going on. I began to wonder what it would mean if the crew failed to shift us off the sandbar, but there was little sense of danger – only of something unusual. The scene, however, was inherently dramatic. The floodlit crowd was naked and isolated in the middle of a very black night, while the high winds threatened to blow away everything that was not firmly tied down.

In the midst of all this, in the high-contrast brilliance of the floodlight, I saw the mood of the crowd turn ugly. Shouts were no longer simply urgent, but outraged and angry. In an instant, like white cells surrounding an alien virus, the crowd concentrated itself into a solid localised mass, passionate and intensely hostile. As I watched, someone who had fallen into their hands was beaten without question or mercy. “It’s a thief,” I heard somebody say.

Before starting my travels, I had worked for about a year in Brooklyn Criminal Court designing a computer information system to keep track of victims and witnesses of crime. We hoped to reduce the long delays in court cases, or at least make them more bearable for the people involved. In order to design the system, I had to observe what happened at every stage of the court’s procedures, from an arrest to an acquittal or conviction. While doing this, I found myself sitting one afternoon at the back of a court room watching a hearing. Around me were the families of the people who had to appear. At the front were two individuals standing opposite each other, the people involved in the crime. High on his bench above them, at the apex of a very personal triangle, sat the judge. At the other two corners of the triangle, just outside the two people at the centre, were the two public lawyers who represented them.

Brooklyn has long been a place where many cultures gather, but just as in West Africa, the gathering is more a wary co-habitation than an effective integration of different values and customs. It was, and is, a place where the famous American melting pot has been full of lumps and independent diversities. The courthouse was one
location where different groups intersected. But in the case I was watching that afternoon, the intersection was skewed because the two people involved in the crime were of one colour and culture, while the triangle of the judge and the lawyers was clearly of another. The two people at the centre said nothing; the judge and the two lawyers chatted and joked as familiar colleagues often do.

I thought of this Brooklyn scene while I watched the quick justice of the open deck. There was no judge here, no trial, no procedure. Nor was there any delay. The crowd could have caught a real thief, or it could have been beating an innocent man. Certainly from where I stood with my limited tongue, there was little way for me to know the facts. Furthermore, it was the middle of the night and we were caught in a sandstorm on a sand bank miles from any administrative post. The crowd itself was a group of mixed strangers who had no obvious connection to each other or to any council or individual who might mediate this dispute. Nor was it clear that the captain would have been willing to interrupt his work on the sand bank to attend to a purely civil matter; there was an implicit acceptance that such a judgement was not his responsibility. What struck me most in the scene, however, was the great openness of the deck – where a person’s luggage would be left out next to his or her place, guarded by the owner or the overseeing eye of a neighbour. Above all, everything was protected by the expectation that in order to travel together for two to three days, living and sleeping in the open, people had to trust that their bags would be left undisturbed. In such circumstances, a thief threatened the basis on which everyone travelled, the underlying condition of working trust. Could I, in such an instance, condemn their hasty judgement or their behaviour? Not immediately and not to this day.

The question this scene still conjures for me is an important one: where do rules come from? How are new rules agreed among people and what ensures they are respected? When do different circumstances require different rules? How are rules and circumstances made to fit? How is any good fit maintained? Why, in post-colonial Africa, has the innate human capacity for rules been twisted into some of the unhealthiest forms of human interaction?
Political Failures of a French Forage

When the sandstorm hit, we were close to Timbuktu. In the fifteenth century the city was a crossroads with 100,000 people living beside the grazing lands of the Niger River. Where we landed, the river is some nine kilometres away from the town which has only 15,000 people and is repeatedly invaded by encroaching sand. I wondered why the river was so far from the town. Had the river changed course in the past five hundred years? I did not know. I later learned that the drought which hammered the region in the early 1970s followed twenty years of exceptionally good rains and may have been part of a normal cycle. Whatever the cause, that drought was a vast environmental and human disaster spawning a great international emergency. Together with the 1960s Biafran civil war in Nigeria, it was one of the first televised relief operations, showing dramatic photographs of hungry children and dead animals bleaching in a pitiless sun.

Not only did these pictures inspire a great deal of sympathy and goodwill, they stimulated the arrival of an astonishing number of Western aid workers. These Westerners believed that the drought and its economic hardship were the Malthusian consequence of too many people trying to live on very marginal land. As the demands for fuel wood and cropland had risen, they argued, the land had become overworked, sterile and bare. Some even said that the resulting deforestation directly reduced the annual rains. As for the nomadic livestock regions which overlapped the Sahara desert, most aid workers believed this was a tragedy of the commons, lacking the benefits of clear property rights and rules. This meant that each person benefited by running as many animals as possible on the common land, but was not responsible for the quality of the range as a whole. The resulting deterioration in the landscape could, however, be corrected with the help of Western knowledge and international aid. After all, the United States had experienced – and corrected – a dust bowl of their own in the 1930s while Europeans had steadily increased the productivity of their farms and farmers for decades. But was this really a tragedy of the commons and were the international remedies the right ones for this people and this place at this particular time?

It was an accident of disease that brought me into closer contact with these questions. When I left the river boat at Gao I looked for some way to travel on to Niamey, the capital of Niger. It was late in the afternoon, but the town was silent and empty except for one dusty hotel where I booked a room. Like Timbuktu, Gao was once one of the great crossroads of the trans-Saharan trade in salt, gold and slaves. In late 1976, however, the only travellers seemed to be haphazard European desert drifters who landed here after crossing the Sahara in search of adventure. I arranged to join one such group who were driving down to Niamey the next day, but the journey was marred by a increasingly virulent stomach bug that laid me exceptionally low. It was this illness which led me to my job with the United States Agency for International Development because it forced me to break another of my travellers’ rules: to avoid the American embassy and its insular society wherever possible.

After arriving in Niamey I slept for twelve or fifteen hours, then decided I needed medical advice and went to the Embassy searching for a clinic. After some bureaucratic objections, I was directed to the American nurse who ran the Embassy health service. She examined me, took me into her home, and brought me back to health over the next few days. One evening, over dinner at her place, I met a newly arrived aid officer and his wife. Paul had been posted to Niger to set up a range management and livestock project in the nomadic zone of the country. He was experienced in agricultural development and had grown up on a ranch in the Florida Panhandle surrounded by cattle. Most of his career, however, had been in Southeast Asia and at that stage he knew little about the West Africa Sahel. Over dinner, we traded questions and observations, each of us confused by what we had seen so far. When I asked to join a tour up country in order to get off the main road, Paul stretched the bureaucratic norms so that I could join him in what became an extended job interview and a long debate about Vietnam which we never resolved.

During that first visit to the nomadic zone of Niger, it was easy to accept the view that we were witnessing a tragedy of the commons, exacerbated by over-population. The visual record of the
land spoke for itself. As part of our tour we stopped at a forage—a deep borehole paved with cement skirting and surrounded by a mixed herd of large-horned cattle, goats and a few donkeys. The animals were being watered by a group of Fulbe people who had arrived relatively recently in the region. For a suburban girl whose acquaintance with livestock ran to one caged parakeet and a short-haired dog who pointed at butterflies, our walk through the herd was a deliberate test of nerve. The animals, however, were placid and patient as the people who herded them worked steadily to pull the water up and distribute it among the animals. It was, in short, another scene of normality and routine.

What was troubling was not the orderly watering of animals at the well, but our drive to it. Even before we could see the herds, we saw the grass becoming shorter until it finally disappeared first into a zone of unpalatable and poisonous weeds and then into a wide sandy beach marked by countless footprints moving towards the deep well. This radius of diminishing vegetation was not unusual. Throughout our tour, we frequently found that where there was water, the grass had gone, while elsewhere the reverse would be true—the pastures might be good, but there was little to drink. Nor were there any fences to privatise and control the use of land. No wonder the aid workers had concluded that the degradation of the rangelands was the tragedy of a common resource destroyed by unfettered exploitation.

But was it true? Was this really common land, owned by all, cared for by none? And was it the tragedy of the commons that had caused the overgrazing? In fact there was another story, which began before the French arrived in Niger in the 1890s. In those days, the dry, nomadic lands were dominated by the Tuaregs who controlled the trans-Saharan trade through mobility, force and a hierarchy of vassalage. They had mixed herds of camels, goats and donkeys and would periodically come down from the desert to enter the wetter farming zone on either side of what is now the northern boundary of Nigeria. Here they harassed and traded with the farming people, exacting tributes of slaves, food stuffs and other goods unavailable in the desert while offering things that only the desert caravans could provide: salt, dates and minerals.
When the French arrived in the late 19th century, they met armed, but dispersed resistance from the Tuaregs and other groups in Niger. Most of these revolts were severely put down, but the Tuaregs, organised in groups that often competed with each other, were the most persistent. Massacres and assassinations were inflicted on both sides, with a serious rebellion starting in 1916 and lasting for the next four years. As I remember the story, the French called for a meeting with the Tuareg leaders to negotiate a truce. However, the meeting was a trap which led to the slaughter of the rebellious Tuareg leadership, eliminating the last opposition that stood in the way of French pacification. This conquest was catastrophic. In 1908, 20,000 camels had carried 1,600 tons of salt and 400 tons of dates south from Bilma. 1924, the salt caravan from Bilma was a third its former size with only 7,500 camels. 6

Ironically, by decapitating Tuareg society, the French also opened the way to the overgrazing I witnessed fifty years later. Certainly there were fewer animals and people in pre-colonial times, but the rangeland was not an open commons. Instead, access to water was decided by those who had originally dug and maintained the wells. These families had the right to say who could or could not use the water. By managing access to water, grazing was controlled and a certain balance between the rangeland ecology and the human population was maintained. There was also an implicit understanding that access to water would not be unreasonably denied. This was not generosity, but only common sense; the man who had water to offer one day might well need to ask for water when conditions changed. It was the same canny generosity that had welcomed me into the Bamako courtyard, and caused the women in Dakar to call me over for a chat. Why, I asked them, did you call out to me? “La vie est très longue et le monde est très petit,” they replied – life is long and the world is very small. It is an ethic for surviving when resources are scarce and life is unpredictable.

This was not the ethic that guided the French when they took control of Niger. Initially the colonial administrators were only

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6 I believe this story refers to the event described in Touregs du Niger, le destin d’un mythe by Emmanuel Grégoire, chapter 1 “Genèse d’un conflit”, p. 29. According to Grégoire, the revolt that began in 1916 was led by a man called Kaosen ag Wantiggida. He was captured by the French in April 1920 and taken to the military post at Agadez, where he was assassinated without having first been tried. 360 people were then exterminated at Agadez and another thousand were killed in combat. It took thirty years for the camels herds to recover from this war. p. 31.

Chapter Two: Sahel
interested in “Niger utile” – the “useful” part of the country able to produce cash crops. When they turned their attention to livestock, they decided to increase production by making more water available. Accordingly, they drilled a number of deep wells which drew on fossilised water beyond the reach of traditional hand tools and opened these forages to all herders. These new wells, however, lacked any new rules linking the use of water to the quality of surrounding pastures which varied with the rainfall from year to year and season to season.

Not surprisingly, the deep wells drew in more animals herded by new groups of people. In the 1970s, the most significant herders were the Fulbe who arrived in Niger after the decline of Tuareg herds which took thirty years to recover from the wars of 1916-1920. In addition to these new herds entering the range land, the herds themselves grew in size. Especially after independence in 1960, city people and bureaucrats bought animals as an investment and turned them over to rural people for tending. Thus, each herder not only had his own stock, but the city man’s stock as well. Just as importantly, farmers in the south of the country were not only producing cash crops for export, but thanks to the benefits of Western inoculations and clean water systems, they were growing more food to feed larger numbers of people. Farmers needed to plant crops more frequently on previously fallow land and in marginal areas that had once been left for grazing. As a result, the now much larger herds were pushed out of their old lands into less reliable pastures. This was supportable as long as the rains were good, but when the rains failed in the early 1970s, it created an unprecedented and unforeseen disaster.

If we think through the connections here, what was popularly seen as a tragedy of the commons can equally well be seen as a political failure. The pre-colonial rules that protected pastures by limiting access to the wells were ecologically astute and respected by a population kept small through slave trading and disease. But the French forages overrode the older system first by removing the Tuareg enforcers of the rules and second by granting open access to the deep water provided by the new drilling technologies. In effect, what had once been an institutional success in ecological terms
became a tragedy of the commons when the old rules were pushed aside by the new political and technological regime.

Behind these changes was the assumption that European land management practices could be simply transferred to an African setting. This assumption not only denied the validity of existing African practices, it overlooked the very great ecological differences between the Sahel and the more temperate nations of Western Europe and America. Of these, one example will suffice: rainfall in Europe is not only much greater than in many parts of the Sahel, it is also more predictable, more evenly spread throughout the year and less liable to evaporate before sinking into the ground.\(^7\) A European farmer can therefore intensify his production with considerable confidence in the moisture he will have each year.

Livestock management in the Sahel, however, has evolved in response to the fact that rainfall cannot be predicted. Not only do the amounts of rain vary from year to year, but the places it falls will vary within a single season. Just as importantly, droughts are normal, occurring every few years or decades with varying degrees of intensity. As a result, a herder might find pasture and water in one part of the territory at one time, but in a different decade, year or month, the rains and good grasses might appear somewhere else altogether. To survive, the herder needs to follow the rains in order to find both pasture and water for his herd. If he stays permanently in one place, both he and his animals will die. A herder also needs to build up his herds when rains and pastures are good so that enough animals can survive the inevitable droughts. These survivors become the nucleus of a new herd that recovers slowly as the rains and grasses return. It is a technology of resilience, adapted to a landscape where climate extremities and variabilities are normal.

The old system of rights in the Sahel recognised this variability as groups used highly specified rights to water and grazing to trade the advantages of different ecological zones. Even today, during the driest months, herders will bring their animals into

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\(^7\) Over thirty years, 1960-1989, annual rainfall in Cambridge, England averaged 551 mm a year and fell evenly throughout the year in cool conditions that allowed the water to stay in the ground. Over eighty years, 1921-2001, in Tahoua, Niger average rainfall was 380 mm, but was concentrated in only a few months each year and much of it evaporated as soon as it fell. Niger data from [http://tao.atmos.washington.edu/data_sets/sahel/](http://tao.atmos.washington.edu/data_sets/sahel/). England data and the comparison with desert areas comes from [Namibia: Drought and Desertification](https://books.google.com/books?id=dc4dAAAAQBAJ) by Mary Seely. Gamsburg Macmillan Publishers, Windhoek, Namibia, 1991, p. 3 & 9.
the farming zone to browse the stubble and fertilize the fields. During the rainy season, however, when the crops are growing, the animals will be taken to the ephemeral pastures of the desert where they follow the rains and grasses wherever they might be found. When Western administrators and advisors introduced the modern technologies of intensified production, they ignored the resilience of the previous system and lost the critical ecological insights it contained. Their belief that the climatic variability of the Sahel could be managed by improving the technology of the wells was tragically misplaced. For the technology to succeed it also needed a modernised system of ecological rules based on the experience of those who have lived in the nomadic zones and their borders for generations. But why had such rules not been agreed during the first two decades of independence in Niger? I caught a glimpse of an answer to that question while watching a game of cards.

The Secretary Bird and a Game of Cards

The secretary bird is a large, extraordinary creature. It is a member of the eagle family, with the heavy down-curving bill of the raptors and a high arrogant head decorated with crested feathers thrusting out behind his ears like the quill pens of an old-fashioned scribe. Unusually for a raptor, it also has very long legs for walking through tall grasses like an officious bureaucrat making his rounds. In fact, the secretary bird is hunting for snakes and other small creatures which it attacks and immobilises with its legs. The first time I saw secretary birds was while travelling up country in Niger soon after joining the American livestock project as a full time research assistant. We had driven miles and miles through grasslands that were cropped close to the ground by the pressure of grazing herds. The shortened vegetation was so consistent that it seemed to be the normal condition of the land; it was also, truthfully, a most monotonous landscape. Time and again we wondered how anyone could learn to find his way with so few prominent landmarks. Repeatedly we found ourselves respecting the skills of the nomadic herdsmen whose intimate knowledge of the terrain allowed them to navigate this monotony in all kinds of seasons.

Our destination on this particular day was an experimental land management site. I cannot remember where this experiment
was – how far north or south of the critical rainfall lines. Nor can I remember how long the experiment had been running, although it could not have been for more than a few years. What I do remember is long hours driving off road through a seemingly unchanging landscape and then suddenly coming upon a large patch of land enclosed by a barbed wire fence. Behind the fence were the most abundant high grasses I had seen in this part of the world, several hectares of thick vegetation. As we looked and walked around, a pair of secretary birds flew over the fence and landed in the grass, confident of finding enough small creatures to eat. As we watched, they strutted and hunted in this private reserve.

The wonder of the place was that it existed at all. The fence had not been destroyed and the vegetation had clearly recovered quite quickly, in a matter of years, not decades. I now know that such rapid recovery is typical of arid lands not too heavily overgrazed. But this regeneration was also perplexing, largely because of the temptation of the fence. Did these few fenced hectares mean that the way to regenerate the dry lands of the Sahel was to fence them into privately owned, privately protected, and privately managed territories? Was that the answer? Or, did the irrefutable variability of the rains mean that the neat solution of fences was ecologically irrelevant, if not actively harmful?

I don’t have an answer to that question, but I do know that any durable answer will not be able to rely on the observation that if range land is left alone it will be able to regenerate. Although the land looked empty it was home to many people and many interests. Moreover, people had been using and altering the land for generations, they were a part of it, as intimately linked to its ecological health and future as any other living creature. Without great violence, one could not simply fence people off and end this ancient mutuality. Above all, fences cannot control the geography of the rains which will fall wherever they choose to fall. In such an environment, the rules become fences, limiting the misuse of the land. Even in the late 1970s, the old rules of the pre-colonial past could not simply be resurrected because conditions were no longer the same. Nor, given their visible failure, could viable rules be based on colonial or post-colonial habits of use and exploitation.
Some new agreement was needed, but what might it take for that to be achieved?

It is often easier to say why agreements fail than it is to say what has called them into being. While the secretary birds linger in my mind as the temptation of the fence, they are associated with the image of a game of cards which illustrated the failure of agreement in Niger. Perhaps both events took place on the same day, during the same tour of the nomadic zone, but I don’t remember such details now. What I do remember is that we were travelling with several different people, including two or three men from the government’s livestock service based in the capital, Niamey, and a young Tuareg who I think was working at one of the livestock posts in the rural areas.

During my prowl through the libraries I had read a sequel to the story of the Tuaregs’ defeat by the French forces. According to this report, the French had asked the Tuaregs to send their children to the French schools in Niger, so the children could be educated to the colonial standards. In a proud gesture of distain, the Tuaregs had not sent their children, but instead sent the children of their slaves. These slaves were people who had come from the farming villages to the south as part of the tribute the Tuaregs used to exact from the sedentary clans. In time, these school children of the slaves were the ones brought into the colonial administrative system to strengthen the local bureaucratic staff. When independence came, the rule of the country – once under Tuareg control – passed to a new government controlled by peoples who had once been the Tuaregs' slaves and vassals.

Once again, we are brought back to the Dakar beach overlooking the island of Gorée and to one of our earliest questions: How long does it take for deeply embedded social histories to be outgrown? Where and how do such changes begin?

These questions came back to me while I watched the game of cards. I imagine now that we had been travelling all day, had stopped at the experimental site where the secretary birds landed, and then moved on to make camp in some new location. I know that we were away from any town, that the various members of our camp
had bathed, cooked and eaten supper, and we were all relaxing for a while before bedding down to sleep. As the cool of the evening descended, someone proposed a game of cards and a lamp was brought over to light up the play. None of the Westerners were playing, so the people who gathered around the lamp consisted of the men from the government livestock service, dressed in Western clothes, and the young Tuareg, who was wearing a traditional turban and local clothes. I don’t often play card games, but am fascinated by the sound of cards landing on a soft surface, by the silent concentration of the players and by the brief cryptic language that follows a hand when comments are made on each person’s decisions and the accidents of the deal. As the game developed, I watched the men concentrate, followed their gestures, and eavesdropped on the stray remarks that accompanied the game. I did not know what they were playing and paid no attention to the rules. What I did see was that the Tuareg was a polite fourth, someone who knew the rules, but would have chosen not to play if another man had been available. Not surprisingly, he was an indifferent player, much as I would have been in his shoes, disinterested in the competition and careless of his decisions. Equally unsurprising, the others found his languor irritating and hopelessly uncompetitive. But what was criticised was not his playing, but his turban, his race and his culture. These were openly insulting in tones that were neither friendly nor jocular, but deeply triumphant and dismissive of someone who no longer had a serious role in anyone’s affairs. These insults were swallowed calmly, with little comment and never a rise or a reaction. The calmer he was, the more the insults continued as if, suddenly, one hundred years of history had landed in a game of cards.

In the following weeks, I saw this history repeatedly manifest in small behaviours and decisions about the nomadic zone. But it was a history that was never addressed directly, only implicitly in what was allowed and what was unthinkable. It may also have been – and may continue to be – a history that makes a new agreement of ecological rules almost impossible. because there are only two models in people’s minds – the ruinous model of colonial and post-colonial management by large government, versus the feudal model of pre-colonial Tuareg domination, which is clearly unacceptable in the modern age.
This raises a new question: where will the new models come from? Can models be found that will allow us to live with our histories but also to outgrow them, freeing us to meet the distinctive challenges of our own times? Could a new system of rules combining the high productivity of Western management and the ecological resilience of Sahelian knowledge somehow be developed in Niger? Would it be accepted by those who would use them and by those who held government power? Or would all the legacies of conquest remain unresolved?

**The Complicity of Telephones**

The slave trade lasted for over 350 years, held together by the systemic complicity of African and European traders. As the demand for slaves increased, rival groups of West Africans defended themselves from being taken as slaves. However, in order to avoid becoming slaves, the Africans needed guns. To obtain the guns they needed to trade with Europeans. What the Europeans needed, however, was a continued supply of slaves. Round and round it went for centuries, with some 30 million people lost to the slave trade, most of them from heavily, even over-populated, areas. According to Basil Davidson, this depopulation was not the real disaster of the slave trade. Rather, it was the loss of innovative people whose demands for change would have helped develop Africa’s own economic systems. These people were the particular victims of slavery because slavery allowed rulers to export – permanently – any dissenter who challenged their rule; critics were simply denounced as criminals and sold off. What Davidson describes as the “European connection”, thereby reinforced the most conservative elements in African society, rendering traditional institutions “brittle and ineffective”. This systematic collusion of African and European elites stifled popular pressures for political and economic fairness in Africa. It also laid the groundwork for a mutually denigrating psychology of racial domination and inferiority that was at its peak in the 19th century, but survives to this day.

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8 Davidson cites the fact that “inland monarchies regularly called in religious sanctions to denounce critics as criminals, and thereby turn them into captives for disposal. … This may be taken as one reason why African revolts against the slaving system seldom occurred at home, but frequently on shipboard and across the seas.” (p. 281, op. Cit.)

9 Basil Davidson, 1980, op cit.
There is an implicit faith in Davidson’s book that independence in the 1960s would allow Africans and Westerners to regain an equality of respect, meeting each other as distinct but honoured peoples and cultures. This is the implied relationship seen in some early Christian nativity paintings where one of the three kings paying homage to the infant Jesus is a wealthy and respected African. Yet, what I saw in the late 1970s as I visited livestock projects across the Sahel was a damaged imperial relationship. Over and over again, I saw Western aid workers assume a pedagogical superiority to the Africans who, in parallel, retreated into an uneasy silence and passivity of their own. In fact, I was told once that there were more French ‘coopérants’ working in Francophone West Africa in 1976 than there had been at independence in 1960. Not only had the French not left in 1960, they had maintained their strategic role in a dozen Francophone countries by setting up a common currency tied to the French franc. Behind this currency were shared policies in foreign affairs, strategy, defence, economy and finance, all supported by the French government. So who, in fact, was in charge? Who was responsible for decisions in these newly ‘independent’ states of francophone West Africa?

This question of responsibility came to be symbolised for me by a single digit in a telephone number. The telephone was used by the French expert who advised the Nigerien director of the government livestock service. In a town with very few telephones, those that existed had probably been allocated according to rank and influence, with the telephone numbers following the order of their allocations. When I looked up the phone number for the French advisor I noticed it was one digit behind that of the director, like a puppet master standing invisibly behind the strings of his creation. Who was running the bureau? Was it the government director who came from Niger, whose history and family and future were rooted in the country? Or was it his French technical assistant?

I have often thought about the implied relationship of the government’s livestock director and his French advisor. In this situation, the advisor deprives the local man of responsibility for his own affairs, allowing him to blame all mistakes on the outsider.

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This continues the habit of exporting hard questions. Moreover, the local man never makes his own errors and never learns from the accumulated experience of his own initiatives. Above all, with much of their government’s budget coming from international aid, African leaders are more accountable to outsiders than they are to their own people. A new complicity between African and Western elites is thus formed.11

Conquest and Survival

I was not very happy or successful as an aid worker. My government contract took two years to come through. By the time I was posted to Niger, my research job to help write the project proposal was largely obsolete. When I asked instead to do research on the indigenous technologies of herding, I was turned down. I lacked the requisite academic training for such work and other field researchers had already been hired. I chose to resign. It was not just the work that pushed me to go, however. As an employee of the American government, I was expected to live with the American community. Here I found too many people who had never left home. Instead, like slow-moving snails, they carried on their backs all the artefacts and assumptions of their home towns in a single wrap-around shell, pulling in their tiny horns at the least alarm. There were a few aid workers and Peace Corps volunteers who bothered to understand the country and its people in its own terms. For the rest, it was simply another place to be. I did not want to play their game and longed for the hard insights of the open road. Above all, I did not want to become another quiet American quietly causing mayhem in societies that were not my own. So I left, depressed and discouraged, with no clear sense of what I should do.

I never went back to Niger. I recently learned that the weakness of the rains continued with only four of the next twenty years enjoying above average rainfall. Despite the poor rains, the population grew from 5.6 million in 1980 to 10.5 million in 1999, but very few adults learned to read. Only 15% were literate in 1999.

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11 France provided Niger with 340 billion CFA in bilateral aid and 190 billion CFA in multilateral aid between 1960 and 1981. *Touregs du Niger, le destin d’un mythe* by Emmanuel Grégoire, chapter 1 “Génèse d’un conflit”, p. 43. Recently in Uganda, I was told that 55% of the government budget and 85% of the development budget is covered by aid grants or loans. Personal communication, 2003.
For a while in Niger it looked as though the high earnings of the desert uranium mines would compensate for the poverty of the rains and education. Then the world prices fell and the peoples of Niger once again were facing the exigencies of their climate, cultures and land. By 1990, the implicit prophecy of conflict seen in the card game was borne out during a five-year Tuareg rebellion that cautiously ended in 1995. This rebellion had one remarkable outcome: it encouraged greater decentralisation of government in Niger and the return of some powers to local chiefs. Whether this will lead to renewed attention to the customary links between social rules and ecological exigencies remains to be seen. The change offers the possibility, however, of a greater role for customary rules. All of this I have learned only recently from books in the library. When I left in 1979, there seemed to be no role for me in the Sahel and little reason to stay informed.

That may be why the images I collected in the 1970s are still frozen and clear. The complicity of telephones haunts me to this day, while the image of the card game summons all the vexed histories of colonial times when embedded social and ecological relationships were turned up-side-down. Moving back, the image of the gris-gris and the island of Gorée forces me to recognise the earliest accidents and damages of the slave trade along with our long connection to each other. All three images raise the same question: how do we accept and outgrow our histories? How do long established relationships and behaviours begin to change?

Other questions come from other images. When we place the image of the secretary birds against the image of the degraded pastures around the deep cemented well we see a question that is starkly posed in the Sahel, but which applies to every landscape I know: how will we learn to live with the land again in a way that restores the health and diversity of life? When will we become symbiotic equals of all living matter on the planet? We also need to ask ourselves the sandstorm’s hard questions about the origin and effectiveness of rules. Where do rules come from? How do our

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13 See Nassirou Bako-Arifari, “De la resurgence et de la re-justification de la chefferie en contexte de democratisation au Benin et au Niger”. Working Papers on African Societies, No. 25, 1998, published by Das Arabische Buch. “Under pressure from the rebellion of the Tuaregs, who were demanding autonomy in the North of the country, and from international funders, the Nigerien government accelerated the process of decentralising the country’s administration, as had been foreseen in the constitution.” p. 24

Chapter Two: Sahel

36
circumstances shape our rules? When our rules have become destructive – as the rules of forage were destroying the pasture – how do we re-negotiate those rules into durably creative forms?

As I left the Sahel and moved to London in the early 1980s, these questions were at the edge of my attention, nagging, but inchoate, functioning at the level of instinct and feeling, rather than clear rational thought. In a more articulate way, I brought back with me a fascination with how societies change from one social and economic system to another. At the time, this focused on the development challenge of helping the agricultural economies of Africa, Asia and Latin America create industrial societies like those of Europe, North America, Australia and Japan. But the question of changing systems is now much broader than the challenge of shifting from agriculture to industry. As the 21st century begins, every society in the world is unsettled and insecure. We all need to understand and outgrow our histories now. But can we learn again how to live with the land? And will we find a way to replace destructive rules with ones that support all life, including ours?
Chapter Three

Sitting by a Coal Fire

As 1980 began, I was thirty-one years old and once again living alone in the small basement flat I had rented in lower Manhattan after leaving university. I had no job, no profession, no husband or children and no clear idea of what I should be doing. Since I had last worked in New York, I had acquired a functional knowledge of French and Spanish and had written a small experimental novel which no one in his right mind would publish. To this meagre stock of intellectual capital, I could add an armful of questions about the Sahel and a working suspicion of all development aid. None of these achievements fitted me for life and work in New York City. New York was, and is, an immigrant town which defines success in its own parochial terms, oblivious of all other lives and standards. Nor was I fit for work in any international organisation, lacking both relevant degrees or enough time in Niger to be considered. I did have a supportive if bemused family, a few close friends, and enough savings to see me through the coming months. During those months I kept returning to the same question: where could I honestly stand and what could I honestly do?

One puzzle was particularly hard. I have never thought of myself as radical, but I had grown up in a household where we argued over abstract questions and elusive facts. As a surgeon, my father fretted over the right diagnosis and had a bias towards personal honesty that was alarming to diplomatic souls. He also had a habit of commenting on the daily news with all the authority of a successful surgeon. While my mother deferred to him in countless ways, she frequently challenged his more extravagant conclusions as the rest of us argued whatever corner appealed to us at the time. This family training in testing and questioning was invaluable for research, but organisationally fatal in both Brooklyn and Niger. It was particularly hazardous because my research skills came through jobs, not degrees. For a young woman to argue was bad enough; to argue without university qualifications was insulting. When my contract in Brooklyn Criminal Court ended prematurely, it was just bad luck. When it happened in Niger, I had to think again. Had I lost both jobs because I argued, because I was a woman, or because I
had no post-graduate degrees? I could not change my gender, so I reluctantly decided to earn a PhD. At the very least, it might give me a stronger licence to join future working debates.

I was, frankly, annoyed at being forced back to university, having often been bored as an undergraduate. I had particularly resented the rules requiring courses from lecturers who made even interesting subjects dry up and die. Such course work led more often to intellectual conformity than to the discoveries of active learning. What if, I once asked my advisor, I only took classes from those professors in any department where I knew I could learn? You would get a very good education, he replied, but the policy committee would never accept it.

Behind this irritation was another. By the early 1970s, when I was finishing my BA degree, academic disciplines were isolated from each other in separate pyramids of knowledge. Each had a broad base of facts and ideas, but specialists had become increasingly narrow as they earned more advanced degrees. Proudly sitting at the apex of each discipline’s pyramid, the specialists rarely tried to integrate their knowledge with that of others. But what if, I wondered, we built our knowledge not from the base of each well-known discipline, but from the sharp defining point of a new question? Over time, such a question would create its own base and integrate relevant knowledge from any field.

The academic discipline that came closest to this style of thinking was geography where the study of natural and human systems is combined. I feared, however, having never studied geography, that an American university would require six years of base-building lectures before any research could begin. At the age of thirty-one, both impatience and penury rejected this idea. I had heard, however, that English universities offered a research degree, known as an MPhil or DPhil depending on the quality of research produced. All I had to do was find a question and someone to supervise me. In October, after visiting half a dozen geography departments in England, I was accepted by SOAS, the School of Oriental and African Studies at the University of London. For the next few years, I had a recognised place to stand, and a chance to develop my own pyramid of knowledge. Just as importantly, SOAS
brought me to central London. Here I slowly began to notice a long record of social invention and evolution that is increasingly relevant today.

**Neighbourhoods of Invention**

As I settled into SOAS in January 1981, I also settled into Bloomsbury by renting a room in a brick-faced town house built sometime after 1710. London was looking shabby and neglected that year, as was my street off Queen Square. Surrounded by high walls, the street was dark, the room dusty, and the house rundown. It was one of two houses with three small cottages behind them, all owned and managed by the same landlord. The buildings stood like creased and withered witnesses to the long life of the city. The three courtyard cottages had been colonised, inexplicably, by middle-aged bachelors working as porters in the local hotels, while the houses had two to three rooms on each floor. In the house where I lived, each bed-sitting room had a different tenant. Two elderly men – one a retired carpenter, the other a book dealer – lived in the rooms at the top where they were still using the old gas lights having never agreed on where to put the electricity meter. Other residents worked in arts or publishing. Their salaries were low, but their professional life centred on the Bloomsbury squares of the neighbourhood. Another man was a confident Canadian economist doing his PhD at the London School of Economics. In the room behind him, a well known writer came to work on whatever manuscript needed attention. I had the front room on the ground floor. Behind me was a busy single man in his forties, full of plans, but never very lucratively employed. The only bath was in the basement, tucked into a tiny plywood cubicle painted in the lurid oranges and pinks of a more frivolous decade. For the whole house there was one toilet under the basement stairs and two outhouses in the back, where the cottages lent a village air to the small paved yard.

In the years before I arrived, the houses had been owned by an elderly lady who managed the properties herself. She had had an easy-going agreement with her tenants: she would fund any repairs her tenants proposed so long as they did the work. It was, by all accounts, a successful, neighbourly contract. My neighbours also relied on the local government, ‘the Council’, for their welfare.
Time and again, when I queried some arrangement, I would be told, “We must go the Council. It is their responsibility.” Often there was a tone of injured indignation, as if some basic right were about to be ignored. The combined paternalism of the landlady and the Council, however, had created a kind of passivity, as if one’s own life were someone else’s affair. This passivity became a distinct liability when the landlady’s nephew inherited the houses soon after Mrs Thatcher and the Conservative Party came to power. I was the first tenant he took on and quickly realised that he was planning a professional renovation of the buildings in hopes of higher rents. His apologetic diffidence hid a bald confidence in the wisdom of letting “markets decide”. Month by month, under the combined assault of his more commercial ambitions and the Tory Party’s local government reforms, the basic ethos of the house began to fray. Over the next few years, the negotiations and trade-offs of the old social contract became harder to maintain, forcing the more idealistic and neighbourly tenants to leave.

I felt oddly privileged to have come to the houses before the old system completely died. Dusty and run-down as the houses had become, there was a philosophy within them that had created neighbourly room for all degrees of wealth and education. There was also another wealth in these houses – the neighbourhood around them. Today Bloomsbury’s squares are famous for the literary life they supported in the early twentieth century, but they also hold a story of social invention in the centuries before the industrial revolution took off in Britain.

John Summerson’s classic architectural study, *Georgian London*, opens with an imaginary aerial view of the growth of London from 1615 to 1815. In 1615, at the start of Summerson’s two hundred years, there were two separate towns: the walled City of London and the king’s palace at Westminster – “the merchant metropolis on the east, the court metropolis on the west”. Between them, stretched along the working highway of the river Thames, were the palaces of nobles and bishops as well as the Inns of Court, residential colleges where lawyers lived and trained. Inside the walled City of London were gardens set around larger houses, while the suburbs held market gardens, common fields, water mills and springs of clean drinking water. Between 1615 and 1815, however,
London’s population grew from 200,000 to nearly a million. This forced the medieval gardens to be filled in with buildings while the suburbs were largely covered with houses and tenements for all degrees of society.

The squares of Bloomsbury were built at this time for the prosperous merchants and professionals of the City of London. Other squares closer to Westminster attracted more aristocratic residents. Today, the surviving London squares are celebrated for their architecture and for the town planning they inspired throughout Europe and North America. Just as importantly, they were built at a time of social invention when the foundations for the industrial revolution were laid down. During these two hundred years, London experienced a great civil war, a great fire and the last episode of the bubonic plague. Yet the city kept growing, inventing new social and economic forms. How did that happen and what might this history between 1615-1815 teach us about inventing ecological societies today?

Two Common Fields

By the time I moved to London, my savings were largely spent and I was living on borrowed money. To keep my debts low, I took a small job in a literary agent’s office in Carey Street which I reached by walking through a square called Lincoln’s Inn Fields. I was cheered by the January snowdrops which appeared much earlier than those in New York and amazed by the tangled black branches of the old plane trees outlined against the sky. There were no railings around garden square in 1981, only the stumps of railings which had been removed to provide iron for the Second World War and never replaced. But the gardens were perfect, with lawns and beds well-maintained. Each time I walked through Lincoln’s Inn Fields I left behind the tense lonely gamble of being in London and took in the rich damp smell of well-tended soil.

What I could not see was the history of the gardens. Nor did I know that these were once common pastures, part of a much older rural system before hedgerows and fences enclosed the land. The medieval landscape that had included these pastures was more open and subject to common rights. While all the land in the medieval system was owned by someone, the owner did not have exclusive rights to everything on the land; other people living in the community could use it for particular purposes. These purposes might include the right to graze animals in field stubble or pasture, to collect fuel from a woodlands, to share the hay from a meadow or to let pigs forage in a forest. These were called common rights and subject to constant negotiation and mutual oversight.

Arable fields of crops were also part of this system. These large open fields were laid out around a village and were shaped in part by the heavy ploughs used to tackle stiff soils. The ploughs were so heavy that they needed eight oxen to pull them and could not be easily turned around. Two things followed from this primitive technology. First, no one in a village was wealthy enough to own eight oxen so ploughing and other large tasks were done communally. Second, the boundaries of the open fields were not defined by ownership, but by the amount of land that could be ploughed in a single day without turning the eight oxen around. Each open field was then subdivided into strips under the control of individual families who owned the harvest from their strips and were responsible for weeding, sowing and other tasks. In order to share the risks and rewards of good and bad land, each family’s strips were in various locations. As a result, each family’s yield depended on the cooperation of its neighbours, not just in the shared ploughing but also in keeping the whole field free of weeds.

This system – with its mosaics of rights and responsibilities – affected woodland, marshes, meadows and cropland and had many variations across England. It was governed by local rules, established and enforced locally by either a manorial court, or more often by a village meeting. The two most important people in the system were often elected by the farmers. They were the foreman, who would oversee farming activities, and the pinder, who was
responsible for impounding stray animals. While it lacked much of the agricultural technology known today, it did have a very sophisticated social technology of rules and agreements, much like the customary rules I read about in the Sahel. In England, such agreements depended on the fact that the group which managed the landscape of open fields, woodlands and pastures was usually a community who knew each other well; common property rights were not given to everyone, but only to those who belonged.

Over time, this system began to break down under a variety of pressures. For example, in some places there was not enough labour to work the fields, thanks to repeated attacks of disease. Landowners would then put a fence around open fields, converting them to pastures for sheep whose wool was an important commodity at the time. This often destroyed the livelihoods of remaining villagers who then moved to London or other large towns. As the population of the towns increased, the urban market for agricultural goods grew. Better markets in turn led to more enclosures as landowners sought to increase the productivity of their land in order to gain profits from the new urban consumers.

As more people moved to towns, they required new houses. Here, the habits and mosaic rights of communal activity survived. John Summerson, writing about London’s eighteenth century architecture, notes that the speculative builders of London – “the mainspring of London’s expansion for three hundred years…” – were a varied lot.

Sometimes he [the speculator] has been a lord, sometimes little more than a labourer; sometimes a substantial capitalist, sometimes a craftsman, with only his skill and time to adventure; sometimes an architect, sometimes a bricklayer or carpenter; sometimes a lawyer, a mechanic, a schoolmaster, a quack, or an actor – indeed, almost any class, trade or profession.

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If house building speculation was not just the reserve of wealthy men, what enabled less prosperous men to participate? I suspect it was the negotiating skills of rural communal life, translated to the new opportunities of town, most notably among the building craftsmen, who substituted their labour for finance. Working together, they would take a lease on some land and then use their complementary crafts to build a house or houses, bartering time with each other until the job was done. To encourage such building works, the owner would only ask for a small ‘peppercorn’ rent on the lease while the house was being built. Once the house was ready for sale, the landlord’s rent would rise to his benefit, while the profits of selling the house would be shared among all the builders. In short, it was a new system of mosaic rights in land, buildings and profits based on the political skills of the rural commons where people routinely made and respected complex agreements. Such skill was a substitute for the financial capital that was in short supply.

The story of Lincoln’s Inn Fields is part of all this history. Before the 1530s, the fields were known as Purse Field and Cup Field and were owned by two religious orders, the hospitals of St. John and St. Giles, who leased them out as pastures to various tenants. The fields were also common land and used as playing fields by students training to be lawyers at nearby Lincoln’s Inn. However, starting in 1536, Henry VIII seized all monastic wealth in the country. Designed to improve the ruinous finances of the Crown, this seizure of church land and property was a grand theft and a significant, if unintentional, land reform. Over the next fifty to one hundred years, the vast monastic holdings of the church, accumulated in a thousand years of bequests and purchases, amounting to perhaps 20% of all wealth, was redistributed to the king, his henchmen, local landowners, the church and others in society.

Purse Field and Cut Field were among the Crown’s booty in the 1530s. In 1630, the king’s office leased the fields to a developer who wanted to build thirty-two houses on the land even though

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common rights remained. When the developer petitioned Charles I for permission to build on common land, the Society of Lincoln’s Inn objected. While the King would have been aware of long-standing common rights, he was also a man of artistic temperament who had hired Inigo Jones to help him bring the classical traditions of the Italian renaissance to London’s architecture. The Crown therefore granted the licence to build, but stipulated that the main part of the fields should “for ever and hereafter be open and unbuilt.” In the following decades, Lincoln’s Inn Fields became one of the most prestigious addresses in London, while the fields in the centre remained open, even rural, land.

In 1735 this openness became problematic and the residents of the square sent a petition to Parliament to have the fields fenced off. … by reason of the said Fields being kept open many wicked and disorderly persons had … met together therein, using unlawful sports and games … enticing young persons into gaming, idleness, and other vicious courses, and … where many robberies, assaults, outrages, and enormities had been and continually were committed …

Their petition succeeded. Fences were built and only surrounding residents held keys to the garden gates. This was the first enclosed square in London and “with that action, the urban common-field tradition quietly died.” Other commons fields in the suburbs of pre-industrial London were also enclosed: among them Leicester Fields, Moorfields, Red Lion Fields, all of which were renamed as squares. Elsewhere, new squares were created on private land, gated and shut from the beginning. Only in the late nineteenth century did some of these private and privatised squares open to the public again, with Lincoln’s Inn Fields being reopened in 1894 and the fences removed completely during the second World War.

After the second World War, the British government invested in the welfare state – public housing was widely available, the national health service was open to all, and universities offered free

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tuition to anyone who qualified. In Lincoln’s Inn Fields, this broad definition of community meant that the garden’s fences were not restored. Instead, the square was a public park maintained by the local council. Without the fences and gates, it returned to its medieval status of open common land. However, each time I walked across Lincoln’s Inn Fields during the 1980s, I watched the lawns and beds of the garden deteriorate under the pressure of several hundred homeless people who were camping out in small tents. They appeared when the government’s housing policy changed, forcing many people out of public housing and into the more expensive free market. As the tents and people became permanent, the snowdrops failed to surface in the spring, unable to push through the hard compacted soil. I missed the spring flowers, but knew from my own lodgings off Queen Square how thoroughly the social contracts had changed. I found it hard to condemn those who had moved into the commons of Lincoln’s Inn Fields. Those who leased the buildings around Lincoln’s Inn Fields, however, petitioned once again to have the fences restored: assaults and rape were more common and the conditions of the garden were deplorable. A few years ago, in the mid-1990s, a new high fence was erected and the tent people were evicted from Lincoln’s Inn Fields. The gardens have now been dug over and replanted. The spring flowers are blooming as I write, but the commons have been privatised once more.

What does the story of Lincoln’s Inn Fields tells us about the process of systemic social invention? First, Lincoln’s Inn Fields reminds us that industrial society required a new definition of property rights, especially in land, before it could succeed. Moreover, these rights developed slowly, test by test, over a long time. In the process, land use changed and the distribution of wealth changed, benefiting some people greatly while others lost out. Thus, fundamental social change was, and still is, rooted in changing definitions of who has rights to what resources. These rights not only define our relationships with each other, but with the land that supports us all.

Second, the story highlights the role of personal skills in making and keeping new agreements. I suspect that many of the building agreements in London were not written down, but verbal.
Trust, a keen assessment of character over time, opportunity and ordinary greed all shaped those agreements, while their enforcement depended in large part on the fear of losing one’s reputation as a reliable investor. While it has been said that verbal agreements are not worth the paper they are printed on, in fact, governance and accountability are not abstract concepts, but even today begin with our reputations among the people we know.

The third important aspect of the history of Lincoln’s Inn Fields is that critical changes in land rights were not solely subject to private agreement; they had to be ratified by the King or Parliament. The compromise agreement that allowed part of the field for development while leaving the rest for shared use was clearly shaped by the local players, but this agreement eventually required ratification by someone in power.

This leads to one final stretch in the story: what happens if we rename the Norman invasion of England in 1066 a “colonial” expedition, using the language of Africa’s past to see the English experience with new eyes? Like the Tuareg leadership, Anglo Saxon society was decapitated by the Norman invaders who then put their own men in power. However, the new regime continued to rely heavily on the previous system while building up the authority of the king. Arguable, the roots of invention in pre-industrial England lie in these two places: the increased central authority of the Norman kings and the common rights skills first developed during Anglo Saxon times. After surviving the traumas of conquest, the conquered Anglo Saxons blended their ways into the new Norman administration, creating a new social and political system based on the legacies of both peoples. Eventually, the grassroots political skills of the Anglo Saxon legacy together with the strong central power of the Norman throne became the joint political keystones of social invention in England.

Property rights, popular political skills, and a connection to power: what might this history mean for any ecological revolution today? First, what changes in property rights are being tested now, or might we see in the future? Second, where are the political, negotiating skills necessary to experiment with such new rights or how might they be developed? Third, if experiments in new rights
begin to succeed, what is their connection to power? How and by whom might new ideas be ratified? Fourth, who will benefit from any changes and who will be left behind? Finally, are there any similarities between this ancient colonial history and the more recent experience of conquest and survival in Asia, Africa and Latin America? If so, are there any signs of ecological inventiveness emerging in these societies today?

The Gardens of Queen Square

When I moved into my room off Queen Square, I found a modern copy of a print dated 1789. It was addressed to “The Ladies and Gentlemen Inhabitants: A View of Queen Square”. The artist had drawn the square from the southern end, facing north. The western sun throws a shaft of light into the square whose houses are all slightly different, the sign I assume of different developers’ hands. In front of the railed gardens, on the cobbled piazza that is still there, appears a small party of well-dressed citizens dismissing a poor woman with a baby on her back and brushing off the raised hands of a ragged beggar boy. A workman of some kind turns his head to watch this encounter, but the ‘Ladies and Gentlemen’ of the Square are disdainful, recoiling as if they might catch a fever from the boy. This is a society of fences and separations, where communities are no longer defined by village obligations of mutual support and interlocking rights across all grades.

Just as evocatively, there is one open side to the square. According to a 1773 survey, Queen Square, laid out in 1706, was “left open on the north side for the sake of the beautiful landscape before it, terminated by the hills of Hampstead and Highgate. This open exposure renders the square remarkably airy and agreeable to the inhabitants of the other three sides…”25 This airy openness was increased by the fact that there were no tall trees in the square, only a few low bushes at the far northern end of a long empty lawn, around which two ladies can be seen strolling sedately in the print on my wall. Like other early squares, Queen Square was a promenade, a place for meeting friends while taking light exercise. It had more in common with an open piazza than a garden. It was so open that

residents of the houses could still see across the square towards their neighbours’ front doors, with the rectangular lawn forming a village green around which the residents were a community visible to each other. Two decades later, however, new buildings had closed off the view to Hampstead and the garden within the square had begun to thicken and change.  

Today, Queen Square, like Lincoln’s Inn Fields, is shaded by large trees and a perimeter of dense shrubbery. As the industrial revolution expanded from 1750 onwards, the aesthetics of London’s garden squares changed. Lawns replaced stone and gravel while shrubs were allowed to fill out. Larger trees, like the plane trees of Lincoln’s Inn Fields, were planted and allowed to grow to their full height, stretching their branches in any direction. While still a shared space, the Queen Square garden became a half-forested park which screened the houses of the square from each other. In this way, it became not just a privatised space, but a private space for reflection, rather than display. In the process, the mutual oversight among residents of Queen Square – and others like it – was forgotten. It lingered briefly in a nineteenth century residents’ management committee when the designer, William Morris, was a trustee. In the twentieth century even that vanished, leaving the local government in charge. The ethos of the Anglo Saxon village, with its complicated rights and obligations, had ended in Queen Square.

Today, most people think of rural areas and wilderness when they talk about ecology. In fact, nearly half of the world’s population lives in urban areas; in wealthier countries, closer to three-quarters of the population are city folk. I now live on another Georgian square in central London where several of the neighbours are relearning lost village skills. We decided to work together to improve the square, using it to bring the neighbourhood together with picnics and other parties. We are, little by little, becoming a new neighbourhood of invention. I don’t know if this experiment will survive. Residents might lose interest, or move away, or decide there are better ways to spend their time. I do know that in all parts

of the world, there are other neighbourhoods of invention today. Tentative, frustrated and experimental, with occasional flashes of success, these are the places where new rights, political skills and agreements are being tested now.

**The Myth of the Pristine Wilderness**

In 1981, my bed-sitting room off Queen Square had two small cupboards built into the wall on either side of the fireplace. In one, I kept my clothes. In the other was a tiny sink the size of a dinner plate, an equally tiny water heater, and a few shelves for dishes. A baby Belling stove, big enough for two electric rings and a small oven, stood on a table between the fireplace and the kitchen cupboard. Two long windows onto the street were protected by thick wooden shutters criss-crossed over the back by heavy iron bars. The early 1700s may have been a time of social invention and growing prosperity, but it was also a time of considerable insecurity.

There was no central heating in the room or the house, so the room was heated with a small fan heater and, once the chimney had been swept, by an equally small coal fire. To an American eye, the fireplace was tiny. As a child in New York and New England, every house I knew had a high open fireplace, three to four feet wide and deep enough to hold a pair of iron firedogs carrying at least a trio of logs. By comparison, my London fireplace was minute, about the size of a grocery box, with a grate not much bigger than a small baking pan. Nor was it very deep. Instead there was a tiny opening for the chimney flue and a sloping back to capture and throw off as much heat as possible.

The small grates of London puzzled me, but I was also mystified by the recipes in old copies of Mrs. Beaton’s classic book of English cookery. Why were there so many recipes for steamed puddings and so few for cakes? Why did Mrs Beaton and my English friends assume that hams should be boiled, not baked? Why, when I first visited this country in the 1960s, were the doors to every room kept closed? Why were so many doors in old houses hung on their frames so that they opened into the room, rather than against the wall? Was it just so that the master could kiss the maid without being seen as the door was opened? Or was it a way to keep
out the draughts when so many houses had no central heating? My parents’ house on Long Island, built in 1905, had central heating radiators in every room and perpetually open doors. London houses, built at the same time, had small coal grates and doors that remained claustrophobically shut. While North American fireplaces were large, decorative and inefficient, the English grates were hot, small and intense. They had to be. Fuel was either expensive, or hard to transport and store, or both.

The luxury of great wood fires was one of the things noticed by English settlers in the landscapes of New England. Francis Higginson reported in 1630 that “A poor servant here … may afford to give more wood for Timber and Fire … than many Noble men in England can afford to do.” “Here is good living for those that love good Fires,” concluded Higginson. His praise of New England wood pointed to the shortage of wood fuel at home, while the sense of abundant nature became one of the defining images of North America.

“The aboudance of Sea-Fish are almost beyond beleaving, and sure I should scarce have beleived it except I had seene it with mine owne eyes.” (Reverend Francis Higginson, 1630)

“If I should tell you how some have killed a hundred geese in a week, fifty ducks at a shot, forty teals at another, it may be counted impossible though nothing more certain.” (William Wood, 1634)

“There flew over all the towns in our plantations … many flocks of doves, each flock containing many thousands and some so many that they obscured the light.” (Thomas Dudley, 1631) 28

This profusion shaped what another writer, William Denevan, calls “the myth of the pristine wilderness,” 29 an American landscape of wild and abundant nature untouched by human hands. This idea of wilderness has been handed down from generation to generation.

in America. It was celebrated in the novels of James Fenimore Cooper, books like *The Deerslayer* or *The Last of the Mohigans*. First published before the American Civil War, my mother read these books while growing up in the 1920s. The editions she read, with their illustrations by N.C. Wyeth of solitary men in thick forests, were part of my reading as a child in the 1950s and 1960s. Another of my favourite books was *The Little House in the Big Woods* by Laura Ingalls Wilder. She described her own childhood in the woods of Wisconsin in the 1870s. The books I read are now in my sister’s house for her children to read. In all of these books, the landscape is empty of human society until European settlers arrive. Where Indians appear, they are either solitary or only a vague presence on some distant frontier. The wilderness, however, is immediately present, gloriously immense, threatening and unclaimed.

*Wolves lived in the Big woods, and bears, and huge cats. Muskrats and mink and otter lived by the streams. Foxes had dens in the hills and deer roamed everywhere ... At nights, when Laura lay awake in the trundle bed, she listened and could not hear anything at all but the sound of trees whispering together.*

William Denevan’s article titled “The Myth of the Pristine Wilderness” appeared with a number of other articles in a special edition of the *Annals of the Association of American Geographers* published to coincide with the quin-centenary of the arrival of Christopher Columbus in the Americas in 1492. Taken together, these articles give us an image of the pre-Columbian American landscape, especially in parts of Mexico, Central America and Peru, that is closer to the cultivated landscape of medieval Europe than it is to the rich tangled forests of the naturalist, James Audubon, who arrived in North America in 1803. As Denevan writes:

By 1493 Indian activity throughout the Americas had modified forest extent and composition, created and expanded grasslands, rearranged micro-relief via countless artificial earthworks.

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Agricultural fields were common, as were houses and towns and roads and trails. All of these had local impacts on soil, micro-climate, hydrology, and wildlife.

And yet, by 1650, only 150 years later, 90 percent of the Indian population of these lands had disappeared. Many people died of diseases like smallpox and influenza, which were debilitating to European populations, but fatal to the native Americans who had been isolated for thousands of years from epidemics of the Eurasian continent. As the old world diseases travelled from village to village and town to town in the Americas, the landscape was slowly cleared of human activity. Decade by decade, villages were emptied and desolate. Roads fell into disrepair. Agricultural fields became overgrown and, in the pre-Columbian centres of civilisation, the great cities were little by little covered by jungle or simply abandoned to the dry air and surviving campesinos. The most dramatic depopulation took place in Mexico and Central and South America but even in North America there is evidence of “highly complex agricultural systems” that later disappeared.

Denevan believes there were between 40-80 million people living in the New World before the Europeans, using the evidence of known epidemics to estimate earlier populations. Of the one million people in Hispaniola in 1492, only a few hundred remained fifty years later. In Peru, the population dropped from 9 million people in 1520 to 670,000 one hundred years later. In North America, an estimated 3.8 million in 1492 were reduced to 1 million by 1800. Other scholars offer both higher and lower estimates of the pre-Columbian American populations. Many believe, however, that only a tenth of the original population survived their initial contact with Europeans.

When one species disappears from a landscape as rapidly as the human population vanished from the Americas, a new process of

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species colonisation and succession begins. In the decades after 1492, weeds covered abandoned fields, new saplings and shrubs took root, while insects, birds and animals came to feed on the new plants and seeds. The long dynamic formation of new ecosystems had begun. During the years of that regeneration, few Europeans settled in the Americas so that little by little the marks of mankind were hidden if not erased. In effect, the pristine wilderness settled by Europeans one to two centuries later, especially in Latin America, was a secondary growth, not a primal untouched Eden. Meeting a recovered landscape whose signs of earlier civilisations were hidden, early European settlers thought they were discovering a new world never before seen by man.

Disease, however, was only one part of the story. While it dramatically affected Latin America, the early founders of New England did not step onto an abandoned land. Instead, the landscapes of New England had been managed by various Indian groups for thousands of years, using techniques that increased the abundance of selected wild species which were then ‘harvested’ every year. Fires were lit, for example, around large trees to clear the underbrush and create clearings where deer could graze and berries could grow in bright sunshine. In some areas of cleared woodland, small gardens also existed. After being worked for several years they were abandoned and a new settlement site and garden were established where both wood fuel and fresh soils were plentiful. Because housing was temporary and modest and large ships non-existent in this culture, the old growth forests remained untouched with only the under stories burnt to provide grazing. The greatest of these forests grew along the river banks, fed by rich soils and good water, protected from wind by the banks of the rivers. Some of these groves were hundreds of years old, with straight white pines 220 feet tall and trunks more than eight feet in diameter. Beneath them, the ground was clear, so that walking through them was like walking between the columns of an ancient cathedral.

Here, in New England, therefore, the biological wealth that met the eyes of the English settlers in the seventeenth century was not a recovered landscape that followed epidemic disease. Instead, it was a deliberate abundance, created by the Indians’ own style of living with the land. As warfare and disease quickly followed those
early encounters, the English claimed the resources of the Indian land. In the process, the English settlers altered the ‘pristine wilderness’ that had so amazed them when they first arrived. What they failed to understand was that the commodities they extracted – beaver pelts, cod and the tall riparian white pines – were not the products of a pristine wilderness. Instead, they were the fruits of a particularly human culture, produced by a land management style so alien it was invisible to English eyes.

If disease and managerial difference created the “pristine wilderness” of North America, it was also shaped by low population densities. In England in 1600, there were perhaps 4.2 million people; in North America in 1492, there might have been 3.8 million. While the populations are of similar size, the land is not. There were roughly 9000 people for every one hundred square miles in England; in North America it was at most 414 people. Even had all the people of North America survived and increased after 1492, the North American landscape would still have looked “pristine” to English eyes.

Does it matter that the European settlers thought they had arrived in an empty land, a “pristine wilderness”? I think it does, for a number of reasons. First, the very genuine abundance of the American landscape bred a profligate attitude towards the natural world: there would always be more wood, more land, more passenger pigeons, more wilderness to find. As a settler nation in an open land, Americans grew up believing each person had a birthright to the wealth of the country to be spent however he pleased. This profligacy survives in the illusions of unending growth underlying all modern economic systems. As American culture is exported, this vision of perpetual wealth also continues to be exported, breeding widespread careless consumption in a world where people convince themselves that limits do not apply.

Just as important, in a pristine wilderness, there is no human society. Mankind does not live with nature, but apart from it in cities and towns so that two sets of rules apply: the civilised and the wild. In the presence of the wild natural world, man is either reverent or rapacious, worshipful or extractive, diminished to insignificance or destined to dominate and control. There is no middle ground, no rubbing along in working daily intimacy like old familiar neighbours. That is why the National Parks of America are such icons. Not only are they the embodiment of the sacred wild, the remnant islands of pristine nature, they are at a safe distance, far from our homes.

These, however, are the American legacies of the myth of the pristine wilderness. What did it mean in England? By 1600, the high population densities of England were creating tensions in society, forcing the reorganisation of agricultural land and migration into towns and even overseas. Today, American genealogists often begin the search for their ancestors with the “Great Migration” of English men and women to New England between 1620 and 1633. Migration, however, was not enough. By the 1640s, the English Civil War had begun, leading to the execution of the King and the ten-year rule of Cromwell and his Parliament. This is usually interpreted as a political crisis, a defining event in the development of democratic politics in England. Politics itself, however, had failed to adjust to those changes in the social economy of the country brought about in part by a rising population and environmental pressures. After the Civil War, the earlier social tensions were eased by the invention of what Ernst Gellner has called “perpetual and exponential growth” -- the kind of growth created by people like the house builders of London. This economic growth became “a Social Bribery Fund” that bought off deeper dissent in seventeenth and eighteenth century England, just as it does today. Such growth, in turn, however, depended on the illusion of perpetual abundance first provided by the wilderness resources of America, often worked by the labour of African slaves.

Soon after I moved into my room off Queen Square, the two old men on the top floor died and another tenant took over their rooms. In the spirit of the old social contract, the new occupant did

the renovation of the rooms himself, putting in the wiring that was required. Part way through the job he hit a problem. No drill bit was long enough or large enough to drill through a huge beam under the floor. Each time he tried to find a way around it, he encountered the beam again. Slowly, my neighbour discovered that this beam ran diagonally from the front corner of the house to the opposite corner at the back. It was so large and thick that he thought it might have come from an old ship, since the early houses of London often reused the timbers of ships that were no longer seaworthy.

I sometimes think about this long diagonal beam. It is just possible that it came from one of the tall white pines of central New England. It is also just possible that it was first used as a mast or spar on a ship that transported African slaves to America while bringing back the sugar or tobacco grown in the rich soils of newly cleared land. Finally, it is just conceivable that when the ship’s life was over, the timber was scavenged or bought by a cooperative of builders constructing a pair of houses in my street off Queen Square. If true, this single long diagonal beam links three continents of the world to the invention of the social and economic system we have inherited today.

**The End of the Wild Wood**

There is another aspect to the “pristine” wilderness and it’s underlying story of recovered landscapes and disease. Here in England there is a parallel history of growth, retreat and re-growth. Sometimes it is the human population that grew and the forests that retreated. At other times, the forests expanded as mankind’s own increase was slowed down or reversed. The first human retreat that is mentioned in the history of the English landscape is the retreat that followed the departure of the Romans in 410. By that time, people had been living in England for some 4000 years. In those four millennia, the human invasion of the primeval forests had steadily expanded, most notably when Celtic and then Roman farmers constructed their fields. After the Romans left, however, there was a 200-year period when the forest grew over the land again. I don’t know why the forests of Britain returned, but there seems to have been a succession of epidemic diseases reducing the population year by year. In his *Ecclesiastical History of the English People*,
completed in 731AD, Bede describes a plague during the 440s, attributing its arrival to a punishment by God. “Suddenly a terrible plague struck this corrupt people, and in a short while destroyed so large a number that the living could not bury the dead.” In 542 the bubonic plague of Justinian reached Constantinople, then spread to Ireland five years later, no doubt touching all the British Isles on the way. In 664, another epidemic visited England after the Synod of Whitby where churchmen from Ireland, Wales and England had met. Over centuries, the diseases that hit every few years would have immunised all who survived, but depopulation and the re-growth of the landscape was a hallmark of Europe’s “Dark Ages”. As a result, when the Anglo-Saxons began to settle in Britain in the centuries following Roman rule, they had to re-colonise the tangled secondary forests that had obliterated the Roman fields.

There is an old saying that in Saxon times a squirrel could travel from the Severn to the Wash – from the west to the east of England – without once setting foot on the ground. This was the forest that greeted the Anglo-Saxons when they arrived on the east shores of England and began to clear the land for crops.

*Strong are the roots of the briars*
*So that my arms are broken*
*Working at them again and again.*

So went Adam’s lament in an ancient Cornish drama, *The Beginning of the World*, as once more, the Garden of Eden was discovered and transformed.

I once flew west out of Heathrow Airport on a clear day in early summer. On the eastern horizon, looking toward London, I could see a dirty dark grey smudge of industrial air, trapped by the high pressure system that day. Beneath me was the layout of Anglo-Saxon, and then Celtic, villages. The Anglo-Saxon villages lay like large round platters on the land, with fields lying in patchwork between each small town. Further west, the Celtic villages seemed to spill down from the ridges more like waterfalls than irregular

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disks of human settlement. This pattern reflects the fact that the older Celtic villages were first built on the high ground of the chalk downs, where no trees grew and both defence and cultivation were relatively easy. The Anglo-Saxons, however, arrived in the country by boat, settling first along the river banks in tightly bounded villages surrounded by communal fields.

When the Anglo-Saxons first arrived, spreading slowly across the English landscape, their villages were quite separate from each other, each one nested in its own circle of fields and beyond that ringed by the wild wood. Gradually, however, the human population expanded. As the population grew, more woods were cleared to make fields while the remaining forests were subject to the rules of the commons. These ancient agreements on the uses of common land – including rights to the acorns for feeding pigs in winter, to the fallen branches for firewood, to the trunks of mature trees for building, and to the deer, boar, hare and other animals that added protein to the winter diet – were more strictly defined as population pressures increased and local conflicts became more frequent. As village boundaries bumped into one another, the protective biological isolation provided by the un-colonised woodlands was also reduced, while news and trade travelled more quickly from one adjacent township to another, partly through the growth of weekly markets.  

According to W.G. Hoskins, who wrote *The Making of the English Landscape*, the Anglo-Saxon settlement of the English countryside took about twenty generations from about 450. “It took many centuries for villages to reach the limits of their territory and for fields to reach their maximum extent. Not until the end of the thirteenth century, or the beginning of the fourteenth, was this generally achieved.” This process accelerated after 1100. Better resistance to disease plus better crops from a warmer climate all helped the English population grow from 2.5 million in 1100 to 4

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44 Quoted in W.G. Hoskins, *The Making of the English Landscape*, 1955, reprinted, Penguin, 1970, p. 4-8. An article in the weekend edition of the Financial Times reported research on the painted ceiling of Peterborough Cathedral. This ceiling was made of oak panels imported from Germany around 1240, indicating that English supplies of oak were exhausted by this time. *Financial Times*, 7/8 October 2000, p. 2 of Weekend section in UK edition.
million in 1200 to 6 million people by 1300. But what happened then?

I am struck by a number of events in the historical record that coincide with the completion of the Anglo-Saxon colonisation of the forests between 1200-1300. First, we have evidence of coal being sent from the Northeast of England to London at least as early as 1228. The price of wood also rose in that century as settlement pushed into wood, moor land, heath and marshland, reducing not just wood, but also supplies of local fuels: peat, furze, turves, sedge and thack. Second, as early as 1200 there are records of English charbon de roche – literally “rock charcoal” – being regularly imported at Bruges, a great centre of trade at that time, while Newcastle was sending coal to France in exchange for French corn or grain in 1325. All this was part of a much wider network of trade in grain, wool and coal along the coasts of Northern Europe, linking the British Isles to the more distant lands and products of the Eurasian continent. There were also more people in English towns. By 1300 between 10-15 percent of the English population were urbanised. Bristol, Norwich and York had up to 20,000 each, while 75,000 to 100,000 were living in London.

While trade and the use of coal were increasing, especially in urban areas, there was also a greater number of famines from 1300 onwards. These have been attributed to an increasingly erratic climate which presaged the colder winters and rainier summers of Little Ice Age and caused lower crop yields. The unstable weather may have also contributed to a rise in epidemic diseases among farm animals. The hardships caused by famines and the loss of livestock were minor, however, compared to the traumatic arrival of the Black Death in 1348 when bubonic plague came to England. It is estimated that at least 30-40 percent of the English population died

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during the first plague years of 1348-49. Plague hit again in the 1350s with successive epidemics of various diseases in 1361, 1369 and 1375.\textsuperscript{51} By 1400, the English population was as low as it had been in 1100.\textsuperscript{52} With such a dramatic fall in the population, labour was in short supply and men expected new relationships with the lords of the Middle Ages, demanding to be treated as free men worthy of better pay and conditions. The political failure to recognise those demands led to the only major popular revolt in England during the Middle Ages. In 1381, Wat Tyler and John Ball led a peasant march on London and began negotiations with a proud adolescent king, Richard II, who was just sixteen years old.

I cannot help but wonder how much the end of the wild woods subtly created the conditions for the troubles that followed. Did coal become more valuable because wood was harder to gather? Did the trade in coal help to stimulate the trade in other goods, and did the combined frequency of all trade then give the plague bacillus more opportunities to spread to the British Isles? More immediately, did the loss of the wild wood mean that society also lost that free space where new families could settle? Did that lead to greater conflicts over the land and its resources which in turn led to greater migration to towns that became more crowded? Did the fact that villages were no longer isolated and towns were more populated mean that the plague, when it came to these shores, could spread more quickly through a population that had not previously encountered this particular bacterium before? Can we also postulate that the fertility of the soils declined when there were no new forest soils to mine and the techniques for restoring soil fertility were slow to appear? Is this loss of fertility an additional reason for the poor crops and regular famines of the 1300s? And did these famines then make the population even more prone to sicken with the Black Death when it arrived? In short, can we look again at what Barbara Tuchman calls “the calamitous fourteenth century”\textsuperscript{53} and say, here was an environmental crisis that shook the European world of its time? I believe we can. I also believe that the world today, at the start of our

\textsuperscript{52} Frederick F. Cartwright, in collaboration with Michael D. Biddiss. Disease and History, Dorset Press, New York, 1972, p.40. Later estimates are higher, suggesting that there were 6 million people in England in 1300, and that 40% of the population died in the first two years of the Black Plague from 1348-1350. See also Chris Given-Wilson, “The Late Middle Ages in England – Introduction” in An Illustrated History of Late Medieval England, edited by Chris Given-Wilson. (Manchester University Press, 1996), p. 4.
\textsuperscript{53} Barbara Tuchman, A Distant Mirror: The Calamitous Fourteenth Century, Knopf, New York, 1975?
new millennium, has more in common with Europe in 1300 than any of us would like to admit.

The plague of 1348-49 was not the end of the world. In fact, after the Black Death, pressure on the land was eased for the next two to three hundred years. Many of those who survived were healthier and wealthier than their fathers had been. By 1650, however, the population of England had largely recovered and the wood crisis had fully returned. The problem of fuel was accelerated by the discovery in 1550 of a process for making cast iron from charcoal. In another peculiar link to the abundance of the Americas, these cannons were urgently needed after British privateers began attacking Spanish ships sailing to Spain with the wealth of the new world. When the greatest of these privateers, Francis Drake, returned to England in 1580, the huge profits of his legalised piracy led to an explosion of similar expeditions. These legalised pirates were encouraged by the Crown which needed money to cope with a crisis in government finance caused by population pressures and changes in the economy. With the landless poor unable to pay taxes and the rich unwilling, Queen Elizabeth’s Exchequer shared the profits of the privateers. As British privateering increased, the Spanish Navy retaliated, threatening the British Isles and raising the demand for stronger cannons. As the cast iron industry for new cannons grew, ironworks were set up throughout Kent, Surrey and Sussex whose thickly wooded regions were rapidly destroyed to feed the charcoal fires the ironworks demanded. By the end of Elizabeth I’s reign in 1603, the price of wood was higher than the price of coal, despite repeated Acts of Parliament which sought to restrain the voracious iron furnaces.

In 1630, one of the English settlers in New England, Roger Williams, wrote a letter home in which he reported the Indians’ explanation for the arrival of the English in America.

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“This question they often put to me” writes Roger Williams: “Why come the Englishmen hither? And measuring others by themselves; they say, It is because you want firing: for they,[the Indians] having burnt up the wood in one place, (wanting draught [animals] to bring wood to them) they are faine to follow the wood; and so to remove to a fresh new place for the woods sake.”

Roger Williams thought this explanation quaint and provincial, but it was, in fact, very shrewd. The English were, just like the Indians, ‘faine to follow the wood’. The demands of a growing population and an under-funded state had conspired to create a crisis of fuel.

**The Rise of Coal**

Which brings us back to coal. The end of the wild wood by 1300 was environmentally linked to the next century’s crisis of disease, culminating in the arrival of the Black Plague. By the early 17th century, a new period of deforestation had created a different crisis: the loss of abundant supplies of firewood and charcoal. This forced English society to search for alternative fuels, the most important of which was coal.

I did not start using the coal fire in my room off Queen Square until my second winter in London, when a friend persuaded me to sweep the chimney and open the fireplace again. The coal fire was slow to catch, but once lit, it burnt with a hot steady warmth. This heat sucked in fresh air from the great leaky sash windows while warming my room with a bright welcoming intensity. Because coal produces at least twice as much heat as the same weight of wood, my small coal fire, despite its size, was a far more efficient source of heat than any wide wood-burning hearth I had known in North America. It was also dirty and labour-intensive, requiring much heaving of fuel and a regular clearing of the grate to burn well. That said, as the ‘days drew in’ towards the long nights of the winter

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During those winter evenings, I assumed that coal was the fuel of the 19\textsuperscript{th} century’s industrial revolution. I imagined that the coal-burning fireplaces in the house off Queen Square had replaced the original wood burning hearths of the early 1700s. I was wrong. Domestic chimneys first appeared in the 1300s, designed to remove the noxious fumes of coal and replace open wood fires in the centre of the room\textsuperscript{59}. These early chimneys, moveable and made of iron, were an important piece of furniture “\textit{entailed by will upon son after son in succession}.”\textsuperscript{60} Chimneys, however, were not enough. Rooms needed to be redesigned and fireplaces needed to be smaller, with open grates providing oxygen for the coals. New tongs and shovels were also invented. Little by little, over decades and centuries, house builders and craftsmen learned to manage the requirements of this new fuel.\textsuperscript{61} By 1600, the conversion to coal for most domestic purposes was largely complete and wood fuel was a luxury for only the wealthiest who disliked the fumes of “noxious mineral pit-coal.”\textsuperscript{62} Clearly, domestic coal fires were not an invention of the Victorians, but part of a much longer story of energy and fuel.

One day, while cycling down Farringdon Street to Blackfriars Bridge, my eye was caught by a street sign for Old Seacoal Lane. Around the corner, off Ludgate Hill is another sign: Limeburner Lane. These two lanes once led to the Fleet River near its entrance into the Thames. Barges from Northeast England had landed here to deliver coal which was used to burn lime for house construction. These streets were first mentioned in 1228 and mark the return of

\textsuperscript{59} In 1577 one writer noted that in the absence of the fumigating powers of wood smoke which had previously drifted out through the thatching, “\textit{... our tenderlings complaine of reuomes, catarres, and poses ...} for [smoke] was reputed a far better medicine to keep the good man and his family from the quacke and the pose...” Robert L. Galloway, \textit{The History of British Coal}, Macmillan and Co. London 1882, p.22.

\textsuperscript{60} Ibid., p. 13

\textsuperscript{61} “The major technical problems which had to be surmounted before coal could become a wholesome domestic fuel included efficient combustion as well as a means of ensuring that the smoke was conveyed up the flue, and the solution involved the design of suitable grates and a range of equipment for their use, changes in the construction of fireplaces, flues, and chimneys, and the provision of fuel of an acceptable quality.” John Hatcher, \textit{The History of the British Coal Industry – Volume I: Before 1700: Towards the Age of Coal}. (Clarendon Press, Oxford, 1995), p. 413-414.

coal to everyday use in Britain. The name, Seacoal Lane, is doubly evocative. Not only was the coal transported by sea, but it came from outcroppings on the north-eastern coasts of England and Scotland. I imagine someone picking up a lump of this soft black stone and remembering an old tale of its use as fuel. If that is the way things happened, coal – the great driving force of the industrial revolution – was little more than beachcomber’s accident.

The centuries that followed the medieval return of coal were a period of repeated experimentation and innovation, as one industry after another came to be fired with coal. In addition to lime-burning, the coal found by the sea was used to boil sea water into salt. By 1306, coal was also being used in brewing and dyeing, causing Londoners to complain about its obnoxious smoke. By 1528, coal was used for pottery, brick-making and the milling of flour. In 1611, a patent was issued to use coal in glass-making, only to be replaced by a better design in 1615. In 1612, there was a patent for smelting metals with coal (cancelled 1613); 1627, two separate patents (both failed); 1632, a patent for smelting tin (failed). Eventually, successful patents led to the use of coal to smelt softer metals like copper, lead and tin.

As one industry after another adopted coal, a critical holy grail remained elusive: the use of coal to smelt iron into high quality steel. Unlike the clean heat of wood charcoal, coal was a dirty fuel, producing sulphurous fumes that pitted iron badly. Finding a way to remove these fumes from coal took a long time. Between 1633-1637, there were eighty-nine patents for a smokeless preparation of coal, but they all failed. In 1662, Dr. Fuller wrote of the search for clean coal: “All things are not found out in one age, as reserved for future discovery: and that per chance may be easy for the next, which seems impossible to this generation …” Improvements finally appeared first in 1709 and again in 1750, but it took the arrival of Bessemer’s furnace one hundred years later to smelt high quality steel using coal. Altogether, more than 250 years passed before

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63 Roman Britons burned coal, but it vanished during the Dark Ages. It is likely that the coal use had returned to London before the streets were named. John Hatcher, *The History of the British Coal Industry – Volume I: Before 1700: Towards the Age of Coal*. (Clarendon Press, Oxford, 1995), p. 17
there was a coal-burning technology capable of replacing wood charcoal in the making of steel. The technology itself, however, was not the threshold of this revolution, it was a price signal. In the 1730s, the price of charcoal was still lower than the price of clean coked coal. By 1800, it was the other way around and coal production soared.\(^67\) The 50,000 tons used in London in the late 16\(^{th}\) century were insignificant next to the 242 million tons dug out and sold between 1901-10\(^68\).

As the use of coal grew, it shaped the industrial revolution itself. The boats that carried coal to London and elsewhere became “the great nursery of seamen,” many of whom went into the Royal Navy.\(^69\) The canals of the late 18\(^{th}\) century were dug to transport coal. By the start of the 19\(^{th}\) century, the gas produced by coal was being used for street lamps and other lighting, bringing longer working days and safer cities. Perhaps the most important contribution of coal was its ability to generate steam power, something that developed most quickly from 1820 onwards and included, by 1830, that great symbol of 19\(^{th}\) century industrialisation, the railroad engine. “The British economy that entered the Victorian era was indeed a coal-based one,”\(^70\) and remained so until after the second World War when another fossil fuel, petroleum took over.

So was the loss of forest fuels the great necessity that mothered the technological inventions of the industrial revolution? And was coal the pivot around which these inventions revolved? I believe so. Moreover, the abundance of British coal reinforced the illusion of abundance found in the Americas. There was no limit that could not be overcome. The energy trap set by the end of the wild wood had been sprung by the adoption of coal. Everything was possible now.

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*Chapter Three: Coal* 68
The English Accident

England was the first country to industrialise, but others quickly followed in Europe and North America. For many historians, the invention of the industrial revolution is as momentous for the history of mankind as the invention of agriculture thousands of years earlier. Some of the social roots of this invention in England are still visible in my neighbourhoods in London. They survive in the architecture of the squares with their complex stories of population pressures, changing rights and negotiating skills. However, social ingenuity is not the whole story. The labour of African slaves and the resources of the new world also contributed, with the wealth American timbers, furs, fish and soils being created in part by the management of Indian peoples whose skills were invisible to European eyes. Finally, the industrial revolution was born of raw necessity – the need to support more people and to find a new fuel when the abundant energy of the woods and wilds was gone. So, social ingenuity, the resources of colonial conquest, and the pressure of great necessity all stimulated the industrial revolution. Of these three, the revolution’s fuel was the greatest luck – a geological and human accident that began with a beachcomber’s discovery that those soft black stones could produce an industrial flame. This fired a mechanical revolution that grew and grew. Now, industrialisation is seen as necessary to every nation of the world. In the process, what had once been an English accident has become a global ambition. What began as a local and regional experiment to solve local problems, is now a prescription for the whole world.

There is a deeper question here, however. Did this English invention, this industrial revolution with its corollary networks of global trade really end the environmental crisis exposed by the Black Death of 1348? Or did it simply shift the boundaries of that crisis from the shores of the North Atlantic to the shores and interior of every continent in the world? And if that is the case, what will be the consequences of spreading this English accident throughout the rest of the world? If food and disease limited the populations of the 14th century, and wood fuel limited people in the eighteenth century, what will be the limiting factor now?
While still living in my student lodgings off Queen Square, I went to work for the Group Planning Department at Royal Dutch Shell, one of whose headquarters stood on the other side of the Thames River, just over Waterloo Bridge. One of the key responsibilities of the department in 1985 was to understand the future demand for energy. Statistics describing how much energy the world economy might need were constantly juggled against various numbers representing the amount of energy the world’s resources could provide.

I was reminded of this critical business exercise when I found an 1841 history of the coal industry in the London Library. “That’s useless!” said a friend of mine when I showed him the book which has since been overtaken by better historiography. The last chapter, however, was not useless because it was the author’s considered discussion of his contemporaries’ estimates of coal reserves in England. How long would England’s coal supply last? John Holland, wrote with all the formality of an Early Victorian drawing room. The figures of Mr. Taylor are “far beyond the mark” for suggested that the coal of Northumberland and Durham would last 1,700 years. Mr. Thomson’s calculations of 1000 years “are founded on data manifestly erroneous,” but once these data errors are corrected, his estimate drops to 350 years. This estimate of coal reserves is close to Mr. Bakewell’s estimates of 360 years which is somewhat higher than the respectable estimates by Mr. Bailey who believed England’s coal would be exhausted in 200 years. In the end, our author lined up with Mr. Bakewell and the corrected Mr. Thomson. England, John Holland concluded, probably has 350 to 360 years of coal reserves. “We may thus anticipate a period not very remote when all the English mines of coal and ironstone will be exhausted.” This prospect, he noted, threatened, “the destruction of a great portion of our private comfort and natural prosperity.”

When John Holland was writing in 1841 the Bessemer process had not yet been invented. The great growth of the coal, iron and steel industries was still to come and even the most learned estimates of coal reserves were bound to be wrong in 1841. What struck me in these old pages, however, was the phrase that John Holland used to

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describe the exhaustion of English coal in 350 to 360 years. This lapse of time – now considered unimaginably long – was described as “…a period not very remote …”.

I find the myth of the pristine wilderness in the Americas immensely evocative, because the regrown wild, with its slowly recovering wildlife and small Indian populations, was a place so rich that it allowed the early European settlers to begin again personally, politically and environmentally. Moreover, in correcting the myth of the pristine wilderness we are given the long dynamic of rebounding change. This dynamic is a repeating story heard in the populations of pre-Columbian Mexico and Latin America, in the landscapes of North America and in the Black Death of medieval Europe. In all three places we see the flux of steadily expanding human populations creating an entirely new landscape before hitting some limit of food, water, energy or disease that forces mankind back into the natural world, becoming just another form of life seeking to survive.

This throws us the possibility that as a species we wax and wane in the same population cycles seen among the smaller, rapidly fertile, creatures of the world, except that our growth and depletion as a population works over centuries. It is mediated through stretches of time so wide that our daily lives cannot see it because we are really only capable of living moment by moment, hour by hour and day by day. Even decades are too long for us, while centuries and millennia leave us completely blind. In the long passage of time, we are as ignorant of our own span as the most inconscient butterfly living from one bright flower to the next in a matter of a few months or days.

Let us suppose for a moment that the English, pushed by the necessity of each moment, each immediate fraction of time, only temporarily escaped their island’s limits of land, fuel and production. Let us postulate that the solution they found could not be durable because it merely replaced the fuel subsidy of the trees with new subsidies from coal and American wealth. Let us then argue that the English limits were only temporarily escaped by exporting their problem to rest of the world while importing the materials for a respite at home. Let us add, finally, that the basic question of how to
live symbiotically with the natural world, confronted in England in 1300 when the wild woods were gone, is still with us today. Now, however, the scale of this question reaches around the world because mankind’s colonisation of all the Earth’s wild woods – like the Anglo-Saxon colonisation of the forests of England in 1300 – is nearly complete.

If all this is true, what does it mean? What phenomena should we be noticing? And, in the absence of our attention, what crisis or constraint – what black plague or shortage of fuel or climate change – will force us once again to invent new ways of meeting our most basic needs? What will limit us now? Will it be something in the air? Or something in the water? Will we be lucky enough to stumble upon some clean, portable form of energy – something as light and simple as a photosynthesising leaf? Or will we meet something else we cannot even imagine?

My own hunch is that we are probably keeping watch in the wrong places. Something will occur to turn our attention around and when that happens we will be, at best, only half prepared. We can remind ourselves that similar constraints and disasters have been met before – in English history, in today’s developing countries and elsewhere throughout our wide world and its rich past. As a species, we have a record of knowing how to learn. But what will we learn this time? And how quickly can we learn it?
Chapter Four

The Cameroon Mountain Race

It is hard to remember now the feelings of those first few years in London before the city came to cover me like a second skin. In many ways, I was still migratory, perched on this English branch as if I had only just paused to catch my breath. I lived in Bloomsbury with all the nervous rigidity of someone straining to be a good guest, not quite sure where I fit in. London, with its British life, was a foreign place I had to learn, just like any other. There was also something familiar, however, a recognition that my own voice might find an echoing language here. This tapped an older unwritten legacy of my own upbringing, absent-mindedly preserved in obscure manners and assumptions. It contained a largely forgotten tension of ancient conquests and communal survivals, a legacy of dissent and aristocracy, of social responsibility, eccentricity and rebellion. The resonance of this molecular memory made me think that perhaps I would stay, perhaps this was the place I needed to be.

More immediately, I found I had walked into the ending of the British empire. India had become independent in 1947, but most of the other British colonies only gained their independence in the early 1960s, a scant twenty years before I moved to London in 1981. In southern Africa, the first election establishing majority rule in Zimbabwe had just taken place in 1980, while South Africa’s apartheid regime would last another ten to fifteen years. Just as importantly, the global connections laid down during the European conquests were still being nurtured through international investment, education and aid. All this meant that growing out of London’s residues of invention and empire was a living international city. This city was linked to the wider world through thousands of different lives, some of which found their way to the SOAS bar.

SOAS, the School of Oriental and African Studies, was originally an imperial creation, founded in 1916 to train colonial administrators in the languages and cultures of the British Empire. This turned out to be an ambition of minute details – grammars and vocabularies, customs and laws, climates and geographies. Then as now, there was little room for any infatuation with grand
development theories. Instead, it was the messy details of our own research in particular places that gave us our authenticity and stimulated countless unexpected debates, many of which also ended up in the SOAS bar.

The bar was a smoky mayhem of people pushed into a large basement room with a filthy carpet, low ceilings and bad lighting. Its permanently disordered collection of unmatched chairs, tables and stools always left a good number of people standing when we adjourned here after each post-graduate seminar. Among ourselves, the dozen research students in the geography department were a mixed lot. We were the descendants of both colonising and colonised peoples, each unsure of what our histories had given us. For the British students, the Empire was an historical dead end that left many of their generation acutely embarrassed by their past. Yet, many of them had come to SOAS because they were children of the Empire. They had grown up with at least two cultures, two climates and two civilisations in their lungs. What could they do now? The non-British students were equally ambivalent. Colonialism had clearly been a great disruption, but their new leaders had been in charge for at least twenty years and would one day have to bear some of the blame. Around the bar in 1981, however, such thoughts were disloyal and hard to say, lingering only in a resonant but silent ambivalence. This usually came to the surface in the decision each foreign student (including myself) faced once his thesis work was over: do I return home, or do I stay in the U.K.?

Amidst this unconscious confusion, everyone agreed on the development ambition. Our faith in the wisdom of progress, in the teleology of perpetual change and industrialisation, was just too strong. It was the invisible fibre of all our assumptions. However, development itself was turning out to be something that could not be imported like a new set of clothes. It needed to be created from the inside. But what was inside? What did it look like when the colonial powers were gone? That was much harder to see.

What was equally unquestioned was the industrial revolution itself, but had that really been the only possible course of events the world might have witnessed over the previous two hundred years? Or had there been other human systems evolving in other landscapes
with different constraints, different histories and different systems of law, love and learning? Were any of these still visible, perhaps hidden somewhere in the vast details of SOAS research? What had survived the European conquests? Could any of it become the basis for a different model of modernisation? Or had the Western ideal of progress become so dominant that anything else was little more than the romantic dreaming of a lazy intellectual?

A Confusion of Maps

These questions of conquest and survival began to tickle the back of my mind once I knew my fieldwork on the role of a multinational banana company in development would be in Cameroon, West Africa. Like many hard questions they were lost in the thesis work, but lurked in a dusty collection of maps I traced out by hand during my first year in London. These maps track the transformation of the country from the German colony of Kamerun (1886 to 1919) to the mandated territories of French Cameroun in the east and the British Cameroons in the west from 1919 to 1962. The maps also record that in 1962 the people of the British-ruled Northern Cameroons voted to stay with Nigeria, while Southern Cameroonians chose to ‘reunite’ with their Francophone brothers in French Cameroun. The maps then draw the independent bilingual state of Cameroon, but leave out the growing fear of many Anglophones that reunification had become a conquest by the Francophone side.72

I lingered over these maps, copying them with a soft pencil onto old-fashioned tracing paper as if my hand could learn something no photocopied image could teach me about the society and history of Cameroon. I found most of the maps while ransacking the SOAS library for anything that would tell me about the place and the people I would soon visit. What I found was frustratingly piecemeal. There was, in the first place, no map of the country before the Germans created the colony of Kamerun in the

72 Every twentieth century regime in Cameroon has spelled the name of the country differently. For the Germans it was Kamerun. For the British, which took over a western segment of the Germany colony after World War I, it was the Northern and Southern Cameroons. For the French, who ruled the larger eastern side, it was Cameroun. Currently, as a bi-lingual state, it is Cameroon for the Anglophone citizens and Cameroun for the Francophones. I have chosen to use the spelling appropriate to each regime, while using the Anglophone spelling, Cameroon for general purposes. The original name, Cameroon, came from the early days of trading with the Portuguese who named the coast after the prawns found there.
1880s, because there was – quite simply – no such country. Instead, there was a multiplicity of peoples, a mosaic of names scattered over a wide territory. Much of this mosaic appears in a foldout map at the back of I. Dugast’s 1949 ethnic inventory of southern Cameroun. Her map, based on German and French sources, charts the southern and eastern parts of the territory the French ruled after Germany’s defeat in World War I. I believe, but cannot prove, that her map reflects pre-colonial patterns of settlement and migration when Africans, not Europeans, defined the territory.

As an ethnographer, Madame Dugast recorded a landscape littered with different groups, their boundaries wrapping around each other like sleeping snakes, or existing like islands in a wider south-eastern sea of empty white paper labelled “région inhabitée”. Through this white sea, in an oversized typeface of wandering letters, the word “PYGMEES” appears several times, co-existing interstitially, nomadically, with those few islands of settled names that had colonised the ‘uninhabited’ forests of the region. The western edge of her map crosses into that part of present-day Cameroon that was then under British rather than French rule. The names around this border multiply until they vanish into the uncharted space of “Cameroun Britannique”. The British side is described in more detail by Ardener, Ardener and Warmington’s 1960 map of the “Southern Cameroons Tribal Boundaries”. Here every inch of the paper had a name and a boundary, with larger blocks holding tiny enclaves as tribal names splintered into smaller and smaller typefaces, until they bump into the colonial edges beyond which there is only the empty white space of irrelevant neighbours.

Between them, these two ethnographic maps covered the area of my research which followed the volcanic soils where export bananas grew. But each time I looked at these maps, I was daunted and dismayed by the mysterious multiplicity of names: Bareko, Muamenam, Bane, Manehas, Bakaka, Bonkeng, Mungo, Mbo, Mbang and Bamiléké as well as the Bakweri, Bakossi, Balong,
Bambuko, Bakunkdu, Mbonge, Elong, Banyang and others. Would I really need to understand them all?

A third map by McCulloch, et al, from 1954, linked the French and British Cameroons to detail another mosaic: the “Peoples of the Central Cameroons”. This map described the dense populations of the higher, colder plateaus where the malaria parasite cannot survive. These are the Bamenda Highlands and the Pays Bamiléké, some two to three hundred kilometres inland from the Atlantic coast. They are the north and eastern wing of a volcanic mountain range which runs from the island of Bioko in the Atlantic to Mount Cameroon on coast. While there is considerable debate on the subject, most scholars agree that these densely populated plateaus were the origin of the Bantu peoples who began expanding into central and southern Africa about two thousand years ago. If true, western Cameroon has been inhabited for thousands of years, especially on the Bamenda and Bamiléké plateaus.

There was one more map, dated 1970, by W.R. Johnson. In this map, most of the ethnic names have vanished into the homogenizing ideal of a nation state. There are only a few broadly defined social groups, three of which were important in the history of the banana: “Forest”, “Grassfields” and “Bamiléké.” The Forest people included the Bakweri on the eastern slopes of Mount Cameroon where rich soils supported the first colonial plantations of oil palms, rubber and bananas. As plantation managers everywhere realised they needed more labour than local people could provide, they went to the densely populated Bamenda and Bamiléké plateaus to recruit, by force if necessary, Grassfields and Bamiléké workers. Throughout the 20th century, other immigrants arrived on Mount Cameroon until the Bakweri residents were a mere twenty-five percent of the local population in 1953.

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77 Edwin Ardener, Chapter 3 “The Plantation and the People of Victoria Division” in Edwin Ardener, Kingdom on Mount Cameroon, Studies in the History of the Cameroon Coast, 1500-1970. Berghahn Books, Providence, Oxford, 1996, p. 163-166 This article was first written in 1960. According to the 1953 Census, there were 85,504 Africans living in the Victoria Division, which included Mount Cameroon. 76% of this number were immigrants from the British and French Cameroons, as well as Nigeria. Half of the immigrants lived on the plantations in 1953, where they outnumbered the local people by about 10 to 1; the other half lived in ‘tribal areas’ first established under the Germans where they outnumbered the local population by about 2 to 1.
Taken as a whole, the maps described not just a geological, but also a cultural fault line where competing African and European cultures have been colliding for centuries. The opposing experiences of French and British rule from 1920-1960 were only the most recent collision. Pluralism on this scale, over this period of time, did not make for an easy life in Cameroon. In nearly every conversation I had, some raw edge of difference was voiced in an atmosphere of obliged tolerance and defensive attention to daily events. The sheer number of languages and cultures struggling to live together made civil war singularly unattractive, even when the peculiar habits of one’s neighbours were intensely irritating. There was, moreover, enough violence bubbling under the surface and randomly erupting to make everyone aware of the risks involved. Yet, in this atmosphere I repeatedly found people negotiating their differences while looking for some successful integration of modern ideas and older practices. It was, in many ways, a high wire act of political persistence – a very domestic search by each individual for a way to keep the peace and move forward among mammoth social complexities.

I had little money for my fieldwork and could not stay long in Cameroon. During my three-month visit I was constantly on the move, travelling back and forth between the Anglophone and Francophone sides. I spoke to anyone who would help me understand the evolution of the banana trade and the role of the small farmers who dominated production in the 1950s, but had vanished by the time I arrived in 1982. The work of gathering information was lonely and tiring. I was chronically overwhelmed by the necessary openness of early research, hoarding every clue I found, carrying as much in my head as I could handle, recording and gathering everything I could find.

In that state of heightened attention, my own skin became a sensitive cloth, absorbing society’s daily tensions of reconciling necessary self-interest with the need to tolerate the interests of others. Which is why, of all the things I saw during my fieldwork, it is the days I spent in Buea during the Cameroon Mountain Race that have remained most vivid in my mind. Sponsored by Guinness, the race attracted runners from every culture that had ever sought a
living from the mountain and – more than any other experience of that year – it posed questions I can only partially answer today.

**Fako**

I had gone to Anglophone Buea on the upper slopes of Mount Cameroon to interview several people who had been active in the banana trade to Britain during the 1950s. While there, I was taken under the wing of Maggie Fotung, the mother-in-law of a Cameroonian surgeon my father was training in New York that year. A trading business with the Cameroons Development Corporation, which managed the plantations in the area, had enabled Maggie and her husband to build up a solid middle-class life and to send all their children to university. But Maggie’s husband had died several years earlier, so she lived alone with her youngest son, Jackie, then preparing for university, and Buma, a seven-year old boy she had under her care. Maggie was stout, solid and hardworking, as well as patient, perceptive and intelligent. She worked with an old-fashioned set of basic English values grounded in rights, responsibilities and a respect for rules and each other. Her moral sense was thoughtful and clear, repeatedly expressed in the stories she told as background to the places we visited on our errands. She travelled in a deeply ambiguous landscape where she repeatedly stitched English ideas into the Cameroonian fabric, skilfully, unconsciously working to honour all traditions. In this, the dictatorial habits of francophone Cameroun were the newest factor to reconcile with all that had gone before.

As I trailed after Maggie, I was told of various events that had shocked and outraged local people. Although the people of the British-ruled Southern Cameroons had voted in 1962 to unite with French-ruled Cameroun, many people I met believed that unification was destroying rights and legal norms they had inherited from British rule. That is why Maggie described a case in which two young men, both Anglophones, had been arrested for thieving. As they were being driven to the police station in the back of a truck, one of the young men took a gendarme’s gun from his shoulder when his back was turned and shot the gendarme dead before he could defend himself. The young man was tried and executed publicly by a 12-man firing squad in Buea stadium.
This case was five or six years old, but was much in people’s minds because a more recent case involved an off-duty gendarme who had been annoyed by some boys who normally earned a small living washing cars in the taxi park. They were singing outside a bar when the gendarme asked them to be quiet. An argument began and another boy arrived. The gendarme seized this boy, held a pistol to his ear and shot him. The boy, who was his mother’s only surviving child, died immediately, provoking outraged demonstrations in the town that lasted three to four days. The people demanded that the gendarme be tried and sentenced according to the same standard applied to the thief. The trial took place a few weeks before I arrived in Buea and the gendarme had been sentenced to death. People were now waiting to see if his sentence would be carried out.

This collision between the Anglophone and Francophone sides was not the only one fizzing under the surface in Buea. There was also the collision of the African cultures of Cameroon. In Buea, the most vexing daily confrontation was probably that between the Bakweri people and the “Grassfields” migrants from the Bamenda Plateau. The migrants had done well. As a rule their children were better educated, their homes more substantial and their jobs more secure than those of the Bakweri who were frequently described by the migrants as an idle and superstitious people. Edwin Ardener, the anthropologist who worked with the Bakweri for many years after World War II, was more forgiving. In his eyes, the original trauma of the German land alienation, followed by the arrival of the Grassfields migrants and the drift of Bakweri women into concubinage, prostitution and infertility, had created widespread depression among a people whose population and culture were in decline. Writing in the 1960s, however, he saw signs of hope, as the humble banana had delivered an unprecedented prosperity to the Bakweri villages on the slopes of Mount Cameroon. This process had been helped by the Bakweri Cooperative Union of Farmers which organised village cooperatives under which every villager could share in the benefits of the trade.

Before travelling out to Cameroon, I had read one of Ardener’s articles in which he told about a Bakweri belief that if someone suddenly became rich, it was because he had become a witch, a
nyongo, who killed his relatives and turned them into zombies, sending them to work underneath Mount Kupé at the edge of the Pays Bamiléké, some 150 miles away. Witchcraft had long been a part of traditions around Mount Cameroon, and in the past could lead to the execution of the accused. According to Ardener, however, the belief in nyongo was a relatively new form of witchcraft, compared to which the older kind “was regarded as almost a harmless trifle.” Local people told him that the nyongo had been brought in “by ‘wicked outsiders’” shortly before World War I. It’s arrival also coincided with the construction of solid houses with zinc roofs in the new Bakweri villages established by the Germans. These houses had been built by Bakweri converts to Christianity who worked as interpreters and minor civil servants in the new German administration. Such houses were especially damned, haunted by nyongo zombies and left empty for decades after their original owners had died. Given the coincidental arrival of both the nyongo and the Germans, I saw this belief as a way of enforcing a collective, if impoverished, resistance to the invaders by punishing any Bakweri who participated in the colonial economy and administration.78

Among the Bakweri in the 1950s, however, this belief in the zombies of the nyongo became troublesome as easy money could be made by growing export bananas. In those years, bananas were a simple crop to grow in newly cleared forests where crop diseases were rare and soils were fertile after their long natural fallowing. Just as importantly, British markets were exceptionally open since no bananas had been seen in Britain after the bananas boats were converted to military use in World War II. As post-war trade resumed, demand for bananas was always greater than supply, so money was easily made, encouraging more small growers. The witchcraft dilemma, however, remained, even after the village societies of the Bakweri Co-operative Union Farmers ensured that wealth was shared and egalitarian village norms were respected.

How could any Bakweri participate in this economy if he or she ran the risk of being accused of witchcraft?

In seeking to resolve this conflict, it became acceptable to put in a cement floor without running the risk of *nyongo*, but tin roofs were still forbidden, a clear sign that zombies were working for that man. So the problem of *nyongo* had to be solved as the temptations of the banana’s wealth came closer and closer. Eventually, after several people had been charged with being *nyongo* witches, it was decided that something drastic had to be done. One by one, Bakweri villagers used their new earnings to send for a powerful medicine known to exist among the Banyang people about 150 miles away. These people came and trained doctors to perform *Obasi Njom*, a dance that was able to exorcise the *nyongo* from Bakweri lands. Between 1955 and 1957, almost £2000 of the new banana money was used to establish *Obasi Njom* lodges throughout the Bakweri villages. From that time on, the banana wealth could be kept and the living standards improved. It was, said Ardener, an example of the continuity of belief and the ability of economics to change beliefs and the morale of the population. He ended his story on a happy note, with the zombies retiring and women beginning to conceive again, more probably thanks to improvements in their diets than the absence of zombies.

By 1982, however, the promise of those years had collapsed. The banana is a greedy crop and throughout the 1950s, it rapidly depleted the soils of the forest clearings. Worse, the sheer number of banana plants encouraged the spread of an untreatable disease in the easily shipped Gros Michel variety. In the early 1960s, all small farmers and plantations were under pressure, but the small Anglophone producers faced a more difficult challenge. The vote to join Francophone Cameroun had allowed Jamaican producers to argue that bananas from the ex-Southern Cameroons no longer needed access to British markets; they could be sold in France. This cut the small Anglophone growers off from Britain, but the smallholders on the French-speaking side refused to include the Anglophones’ fruit in their quotas to France. With that refusal, the participation of Anglophone smallholders ended in Cameroon.
All this was in my mind as I joined Maggie on the weekend of the Cameroon Mountain Race. I had taken a bush taxi up from Douala, crossing the Tiko Plain with its rows of rubber trees and oil palms before reaching Buea. The town was small and neglected, despite its cool site beneath the peak of Mount Cameroon, an active volcano some 4100 metres high. The mountain is often covered in clouds, with some of the heaviest rainfall and greatest biodiversity in the world. In 1895, Mary Kingsley, a great Victorian explorer of West Africa, wrote that “I feel quite sure that no white man has ever looked on the great Peak of Cameroon without a desire arising in his mind to ascend it …” It was her “great temptation.”79 For the Bakweri, it was, and is, their mountain, Fako, and the Mountain Race is theirs to win. First held in 1970, the Mountain Race is a gruelling affair covering twenty-four miles and climbing ten thousand feet to the summit, in four to six hours.80 Bakweri runners had won the race in both of the first two years of the event, but later lost it to other contenders. In 1982, they were determined to win.

The day before the race, after doing errands around town, we were driving back to Maggie’s house when we were met by a crowd of Bakweri women dancing and shouting and insulting every car that came by. It was some bit of magic in aid of the runners who were joining the Mountain Race the next morning. There were so many people on the road that we could not pass without stopping. Maggie, whose mother was a Bakweri and father a Grassfields man, was annoyed by the inconvenience and criticised the superstitious affair. That night we went out dancing at the Buea Club, leaving along the same road, which was by then empty, and returning later sometime after midnight. As we drove back, I put my head against the seat, my eyes closed with weariness. As I drifted towards sleep, I wondered if there would be people on the road again this late at night, then I felt the car slow down. I opened my eyes. Around us was an even larger crowd, not of women, but men this time. They stopped the car with their singing and dancing, waving palm fronds in the air. Some of them began to pound on the bonnet, demanding that the lights be turned off, another magical propitiation of the spirit that would help them win the race. The men were raucous and rude, but not yet threatening.

80 In 2003, Ngopa Pounga Charles, the winner of the Mountain Race, covered the 24 miles and 10,000 foot climb in four and a half hours. http://www.crtv.cm/actualite_det.php?code=758 (24 April 2003).
Maggie, however, was angry. She shouted at the men, saying that if they wanted the lights turned off they should ask her quietly without banging on the car. The men began shouting back, insulting her: “You Bakweri woman, we tell, you die.” “I no be Bakweri woman,” she said, as the argument got louder and more unpredictable. In all the shouting, which I only occasionally understood, I heard Maggie accused of witchcraft. “We know you. Your husband be zombie make you rich.” The times are hard again, I thought, and the old belief is back. Maggie, with her insistence on a modicum of courtesy, was caught in the middle, her modernising attempt to respect all traditions and to do well for herself and her children damned by the beliefs of her poorer neighbours. I don’t remember now how she replied to the deadly slander of witchcraft. What has stuck in my mind is her forceful insistence on good manners, not violence, if the men wanted her to respect the spirits they sought to enlist in their race. “You speak nicely, I turn out lights.” But the crowd did not want to give in to this stubborn neighbour whose history they knew and whose success they envied and resented.

As the headlights continued to shine, picking out figures in the crowd, I looked around at them. I wondered if I could reach the door lock without being noticed, and then gave up the idea. As I debated, our doors were opened in a move to turn off the lights directly if Maggie would not do it herself. One man, leaned over her, reaching for her keys hanging on the steering column. “Surrender the key,” he said, “surrender the key!” I tried to shut my door, but was shouted off it. Maggie meanwhile had her hand covering the ignition and was bent over the steering wheel in an angry stubborn silence.

We sat there mutely for some time. I kept as still as I was able, watching whatever I could see, imitating Maggie’s furious immobility as impassively as I could. We waited, not moving, not speaking. Slowly, they backed away. I shut the door. So did Maggie. She then started the car and drove on through the crowd. Then she turned the car around, apologised to me, and headed back again, saying that she was going for the police. As we went through one man shouted, “All right, go police then.”
We returned to the club. The strap of Maggie’s dress had been torn and her key chain had been pulled apart. We walked through the Club to where her old friend, Richard, was watching the snooker game. When her husband died, Richard had phoned her every day. After he was posted to Buea as governor of an open prison, Maggie had looked after his household and often sent over his meals. I had met Richard during the day, immediately liking and respecting him. Given the fact that many Anglophones felt as if they were living under occupation by Francophone gendarmes, his job must have been delicate and difficult but he seemed to handle it with intelligence and finesse.

Furious and determined, Maggie told him what had happened. The head of the Gendarmerie was there and sent one of his lieutenants – also at the Club – to return to the spot on the road where the men had been. Richard went with the head of the Gendarmerie to gather reinforcements before joining us on the road. As we returned to the spot, Maggie drove first through the crowd. This time they were more subdued, but went towards the gendarmes’ Land Rover, dancing and shouting and hitting the car, palm fronds waving in the air. The gendarmes got out and chased them back. Maggie and I drove on to the house.

Five minutes later Richard and the gendarmes stopped by. With heroic relish, Richard showed us how he had done battle with a baton stick he pulled out from under his jacket. We all had a drink, told the story several times and prided ourselves on our behaviour generally. “This, you see is what happens in Cameroon! You can go back to the police to make a complaint and they come out to help you! In Zaire or Nigeria no one would even listen to what you had to say!” This led on to horror stories of lawlessness in other parts of Africa so it was two o’clock before we got to sleep that night.

When I got up the next morning, the children in the house were listening to the radio, following the race which had begun at seven. Outside, the mountain was often clear, clouds passing across it, but then moving on. Buma, the very sturdy seven-year old boy living with Maggie, was maintaining that only people who needed money ran in the Mountain Race. With gentle teasing, she
demolished his argument while having her breakfast at the table. Buma kicked his heels on the chair and steadily argued back, humouring her, not about to give in.

Eventually, I was given a smart dress to wear, having only brought working clothes with me. Then Maggie, Buma and I drove to the Stadium to watch the finish of the Mountain Race. We walked down from the road, a slow and curious procession. Greetings, chat, this and that, slowed our progress down to a nineteenth century gentleman’s day at the races. The stadium was little more than a hollow spot where the mountain fell away leaving behind a natural arena, uneven on the slopes, but levelled in the plain and planted with a tough green grass. There was a grandstand to one side, a ramshackle affair with a roof so low that no one in the back rows could stand. We made our way towards it, passing a small inauspicious hollow in the side of the arena. This, said Maggie, is where the Anglophone boy who shot the gendarme had been executed; twelve rifles, all but one with blanks.

We got seats on the back row as all the others were taken. A cool breeze blew under the tin roof and we found ourselves quite comfortable. I sat quite happily watching the procession of faces and costumes that passed in front of our eyes. There was a healthy sprinkling of grey, green and camouflage army uniforms, mostly newly shorn recruits called out for the day. Among them were women, hair shaved as close as the men, nearly indistinguishable in their baggy clothes. Stretching in front of us, the flat plain of the stadium, the slopes of the arena and the rim at the top were filled with drifting uneven crowds brightly festive in the late morning sun. I couldn’t honestly say where the runners were likely to descend because there were people everywhere. When shouts went up that sounded like an approach, they were usually a false alarm and might have come from anywhere. “I just hope it is not a Bakweri man who wins,” said Maggie “or at least not one from that village.” She named the site on the road where we had been held up and harassed on the previous evening.

The first notion I had of runners coming in came when a Francophone – one ear to a portable radio – shouted, “Mais c’est vraiment des sorciers! Le troisième est le premier maintenant!”
This is truly the work of sorcerers! The third man is now first! He was excited and gleeful, fully a Bakweri supporter. When we finally saw the runner’s descent down a dirt road carved out just for this affair, we did not see the man at all. What we saw was the undulation of the crowd rushing to the road to watch, then receding again slowly as he made his way past. In this way we saw the finish of the Mountain Race, a distant slow-motion crowd surging and retreating in a long wave down from the roadway into the arena and around the two-thirds of the stadium to be covered before the race was fully run. We stayed to watch two more runners come in – Buma and I having descended to the fence, pressing ourselves against it. Then slowly, easily we made our way back up to the road.

Around us, and just as some very large raindrops began to fall, was a small group of Bakweri women singing, ‘Han gano, han gano!’ A Bakweri man has won, Bakweri man has won! They waved palm fronds and danced and smiled and laughed, drunkenly proud, fanatically satisfied. The rain poured down for an instant and then stopped. It began again and, as the car keys were with Maggie’s son, Jackie, who had wandered off, Maggie commandeered a jeep with a somewhat reluctant driver and we waited out the rest of the downpour in the chilly shade of the Buea Club where slowly a small collection of people gathered to pass the rest of the day.

**Kuva’s Defence**

So why was this story of the Mountain Race one of only two to three entries in the diary I tried to keep in Cameroon? Why have I read it over and over again in the past twenty years? Why does it keep reverberating in my mind? And why tell it here? Like the game of cards in Niger, it holds within it the fault lines of geology and history in this corner of Cameroon. But it also forces another question: why did this race lead men and women to provoke violence to themselves and others in order to win?

A partial answer lies in another article by Ardener titled “Kingdom on Mount Cameroon” in which he collected all the documentation of the German arrival in the region in the late nineteenth century. This article contains the story of Kuva, who was
leading the Bakweri people in the 1880s when the Germans began to explore Mount Cameroon where the Bakweri people lived. According to the German documents, various chiefs of Upper and Lower Buea agreed in 1886 to sell their lands to the Germans for a total of £28 worth of trading goods. A young Josko von Puttkamer, later the governor of Kamerun, described Kuva as “one of the most respected men of the mountain”. While Kuva was among those who made this land deal with the Germans, he did not sign the final agreement. Edwin Ardener remarks, “there was a suspicious element of haste in this agreement ...” and goes on to note that in Bakweri eyes land was inherently unsaleable. “The chiefs ... must have felt like those ... tricksters who ... offered to sell the Eiffel Tower or the Tower of London to American tourists.”

The documents were sufficient in German eyes, however, to support the establishment by 1891 of the Basel Mission where a botanist, Dr. Preuss, began to survey the area. In his reports, Dr. Preuss noted that there were about 1,500 inhabitants in Buea, with 600 men capable of bearing arms, 400 of whom had guns. The Bakweri, he wrote, “busy themselves enthusiastically with hunting and palavers, and wage wars with their neighbours at every opportunity. In their relations with the white man ... they are impudent and unashamed ... They have not as yet learnt his power.”

This ‘impudence’, and the wars with their neighbours, persuaded Acting Governor von Schuckmann “that something had to be done forthwith to restore peace in the Mountain.” Taking a Maxim gun and about 160 German and African soldiers he marched up the mountain to “the great war-hedge of Buea, a growing stockade some fifteen feet high, the lower part of it wattled.”81 Here they met a double barricade of stakes with stones piled up two feet high. Very soon afterwards, a sudden “hail of fire burst out against us from the palisade.” Not only did the Maxim gun fail to fire, but one of the German officers was shot in the chest, dying almost instantly.82 The Germans eventually broke through the Bakweri barricade, burning huts and compounds before reaching Dr. Preuss’s house where they took refuge. Two days later, the good doctor led

82 According to recently reported Bakweri legend, six Germans died, not one. Their skulls are buried in a secret shrine in a Buea village. See http://www.bakwerilands.org/resistance.htm (24 April 2003)
them over a mountain path back to the coast, carefully avoiding ambush on the way. The acting governor said that “it is certain that [the Buea Punitive Expedition] has instilled in the Backwiris (sic) respect for the power of the Government,” but Ardener is not so confident. “Nothing could disguise these events as anything but a retreat.”

A 1939 Bakweri account of the same event described it as a victory: “Quite ignorant of what was before them, the Germans marched up to meet the mountain tribe, with the confidence of cutting all to the throat, and taming them once for all. … How it happened that they [were met with guns and] could not see spears as they expected was a surprise. … In their confused state [they] shot at random. … the Buea people … strengthened with the memories of the past difficulties … loaded their guns in turn and never looked behind until the Germans retreated. This ended the first war.”

The Bakweri victory did not last long. Kuva, who had led the Bakweri in the 1891 defence, continued to resist German occupation, but by late 1894 a stronger German expedition was being prepared. This time, according to the 1939 story, Kuva was advised by friends from the coast not to fight for fear that the Bakweri lands would be devastated. “Acting on this advice … Brave Kuva called his people together, and with the words of a leader bade them to leave Buea for a while, until the Lord called them back again. This land, he told them, had been ‘their ancestors’ for generations, and it would be theirs forever …” When the Germans came, they were “red-eyed, almost rabid to quench for the final time their opposers, but to their bewilderment only thatched houses greeted them. They marched this way and that, not a soul was found. They could only hear the singing of the birds of the air, and the droning and humming of beetles, and swarms of bees from the high Cameroon Mountain.”

During this attack, Kuva was in a village about an hour away. One month later, in early 1895, he died. His body was buried secretly on the border of Buea, his grave hidden, just as it still was in 1969 when Ardener wrote his account of these events.

By 1897, the layout of the new German town of Buea was well advanced and the new governor, an older Josko von Puttkamer, had
begun building his ‘chateau’ in the Buea hills. According to von Puttkamer (whose description Ardener describes as ‘a classic of disingenuousness’), “This people, who were so accustomed to free movement, have so far adjusted to the quite changed conditions of life, that they gladly work on the new plantations.” Ardener, however, describes this period as one in which “the Bakweri were systematically tidied up. Scattered huts were grouped in lines and lands alienated for plantations.”

**Interrupted Evolutions**

What I find myself searching for as I reread this story is a way to understand the life that Kuva and his people were defending with arms and that the Bakweri runners sought to honour with magic and a sporting victory. The written records of the 1890s were all made by the Europeans. The Bakweri records survive in stories told to Europeans and then written down. In any case, most old stories describe battles, not the nature of the society that was being defended. In a very real sense, therefore, there are no completely authentic voices describing the life of the people defeated in that colonial invasion. Whatever has survived of pre-colonial society on Mount Cameroon is more likely to be implicit in customs and habits I could only know by living in that society for many years. So this past, which is little more than a century old, is deeply inaccessible to me. Yet, I still wonder what it was. What made it whole? How was it understood? What way of life was guarded behind the fifteen foot Buea hedge with old fashioned rifles hidden in the foliage? What were people preserving through their refusal to join both the Germans’ colonial administration and the busy ambitions of their modernising neighbours in 1982?

My interview notes with various people in the Cameroon banana trade record an industry in decline and much of my thesis work explored the origins and nature of its weakness in the early 1980s. However, what I also saw was a much less explicit but important argument about who would control the future of this particular industry and – more broadly – the future of Cameroon.

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83Except where noted, this account has been based on chapter 2, “Kingdom on Mount Cameroon: the Bakweri and the Europeans” in Edwin Ardener, *Kingdom on Mount Cameroon, Studies in the History of the Cameroon Coast, 1500-1970*. Berghahn Books, Oxford, 1996, p. 41-150, passim. This article was first written in 1969.
Small producers everywhere had vanished, but a number of large banana plantations remained. Whose values, habits and way of life would decide how resources were to be used, how wealth would be generated, how any gains would be distributed?

In 1982, there were several contenders. There was a remnant handful of French colonists – “les colons” – who still remained on their plantations in Mungo on the Francophone side. Most were living out the time until their retirements with angry suspicion and discouragement. They talked more about their favourite cheeses in France than about the challenges facing them and their neighbours in Cameroon, but some among them wanted to stay. There was also the Cameroons Development Corporation, the state-owned plantation company. The director of the CDC was a competent man from the Bamenda highlands. He would have been happy to drop the uneconomic bananas completely except that the Cameroon government was under pressure from France to continue production and he was obliged to comply.

The government itself was another contender. Their official support for banana production was belied by the actions of a government office set up to manage the trade from field to final sale. On the face of it, the Organisation Cameronnaise de la Banane (OCB) demonstrated that the banana crop was a serious government priority. In commercial and managerial terms, it was a nonsense. Led by a limp and inarticulate bureaucrat with a staggering ignorance of the business, his decisions seemed designed to run the industry into the ground, freeing the land for other uses. Buzzing around the OCB were men who honestly wanted to restore the banana trade, as well as a variety of unscrupulous businessmen from both France and Cameroon who waited like vultures to build on the ruins of whatever was finally declared bankrupt. Mingled in it all, were small farmers whose messy cottage gardens were the most common style of agriculture in the region. Ignored by businessmen and agricultural researchers alike, they lacked expensive fertilizers, pesticides and machinery while eschewing the neat mono-cropping of plantation agriculture. Their needs, their knowledge and their experience were a matter of complete indifference to the more industrial participants of the trade; in the overall climate of competitive mistrust, the small farmers had the weakest voice of all.
Which brings me back to Kuva’s defence. When Kuva died in 1895, his brother Endeley took over. Roughly fifty years later in 1948, this man’s grandson, Dr. Emmanuel Endeley, led a strike for higher wages on the plantations of the Cameroons Development Corporation. The strike was sufficiently successful that Dr. Endeley was invited to become a member of the CDC board, representing the workers. While on the board, he began arguing that the CDC should market bananas produced by local farmers – people like the cottage gardeners I had noticed in 1982. Backed by the government’s support for farmers’ cooperatives, this idea led to the formation of the Bakweri Cooperative Union of Farmers, which was headed by Dr. Endeley.\(^84\) During its first year in 1952, the BCUF had 100 members and shipped 8,000 stems of bananas worth £2,500. Six years later, in 1958, there were 4,000 members shipping 1,350,000 stems worth over £900,000. According to Ardener, the Bakweri’s normal antipathy to agriculture and trade was assuaged in large part by the feeling that they had an organisation, the BCUF, with the same skills and prestige of a plantation company.\(^85\) This organisation in turn depended for much of its success on two to three professional managers from the Elders and Fyffes company, who worked with the BCUF on the recommendation of the British government’s Registrar of Co-operatives in Cameroon. In this way, David Philp became the General Manager of the BCUF in 1956, about the same time that Dr. Endeley became the Prime Minister of a devolved colonial government in the Southern Cameroons, a post Dr. Endeley kept until the vote to join francophone Cameroun. In David Philp’s own words, “My job depended on him [Dr. Endeley], and when he fell, so did I. I knew that.”\(^86\) As for Dr. Endeley, when I asked him whether it was easy to work with Elders and Fyffes, he replied with an old man’s nostalgia for his finest hour: “Oh well, it was beautiful.”\(^87\)

After the 1962 reunification vote effectively excluded BCUF fruit from both the British and French markets, both smallholder banana production and the BCUF slowly crumbled. The evolution

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87 Unpublished interview with Dr. Emmanuel Endeley, Buea, 25 April 1982.
of this very successful organisation ground to a halt. But in the brief
time it existed, it created a new style of engagement between the
different peoples around Mount Cameroon. Not only did the
Bakweri have an organisation that gave them an entry to the
modernising economy, the structure of the organisation itself seems
to have functioned as a federation that was able to add more co-
operatives, based on ethnicity and village organisation, as they
wanted to join. In June 1954, there were four affiliated societies.
Four years later this had become seventeen. It was, in short, a very
successful organisation, a network of small societies learning to
function cooperatively on a much larger scale. It accumulated
considerable savings and, less laudably, the many temptations of
corruption this money attracted.

It is also clear that the challenges facing the BCUF in 1962
were greater than the challenges of lost markets brought about by
reunification. There was also the challenge of rising retail standards
and competition in the European markets. This coincided with the
need to shift from an easily-grown crop in cleared forest with fertile
soil, to a more intensive style of permanent agriculture on land
exhausted by too many years without crop rotation, fallowing or
fertilisers. Finally, there was the challenge of creating an durable
co-operative institution that could survive the temptations of
corruption and rivalry. We cannot now know whether the BCUF
and its thousands of small farmers would have been able to negotiate
all these transitions. What is clear, is that of all the smallholder
organisations in both Anglophone and Francophone Cameroon at
that time, it had the best foundations for doing so.

In the end, what interests me in this story is not the ultimate
demise of the BCUF, but the fact that it existed at all. Like many
other successful institutions, it emerged with a bit of good luck and a
bit of good planning. It took root at a time when the colonial
government was experimenting with co-operative ideals and when
the British companies in the area were obliged to meet a high
standard of social responsibility. This was also the time when
European markets were exceptionally open to smallholder produce
and when the newly cleared forest soils were rich enough to support
a very greedy crop successfully for a few years. But equally

88 Ardener, p. 185.
importantly, the legacy of defiance and self-respect among the Bakweri must have enabled the BCUF to overcome the clearly powerful parallel legacies of self-pity, resentment and suspicion. This created the possibility of meeting the colonial powers on equal terms while also exploring new relationships with their immigrant neighbours from elsewhere in Cameroon. It is not surprising that by 1982 the 1950s banana boom in Anglophone Cameroon was remembered as a golden age.

There is an interesting coda to this story, which appears on the website of the Bakweri Land Committee, bakwerilands.org. In addition to recording their history, the website presents the Bakweris’ claim to the lands of Fako, i.e. Mount Cameroon, which had been taken from them during German rule. The group’s campaign focused on the Cameroon government’s decision, first announced in 1994, to privatise the Cameroon Development Corporation (CDC) and its landholdings around Mount Cameroon. According to the website, a delegation met with the Cameroonian Prime Minister in October 2000 to demand “That the Government should recognize that the lands occupied by the CDC are Private Property as defined by Par II of the 1974 Land Tenure Act, and that the Bakweri are the legitimate owners of these lands.” On 23 August, 2001 the Bakweri Land Claims Committee wrote to the government’s advisors, Price Waterhouse Coopers, warning them of legal action. “To the extent that Price Waterhouse Coopers is cooperating with Government to dispossess the Bakweri people of their lands, it too is hereby put on notice of BLCC’s intention to seek legal redress … in all jurisdictions …” The Committee has also written to prospective buyers of the CDC. As of April 2003, the CDC does not seem to have been privatised. However, Kuva “the fallen giant” is celebrated on the Bakwerilands website with a song of praise that is heard “all across the Bakweri territory”:

Lo! The hands that waved the spear  
And loaded the gun  
Lo! The dreadful voice that roared  
And scattered the multitude,  
The hero remains immortal.  

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Population Lines

In September 1895, Mary Kingsley gave in to her ‘great temptation’ to climb Mount Cameroon. With a small group of West African porters, she walked from Victoria to the peak of the mountain only nine months after Kuva had been driven away from Buea. She left the coastal town by way of the new road to Buea the Germans had started to build, describing it as “quite the most magnificent of roads, as regards breadth and general intention …”. Alas, was also quite unfinished. “For half a mile beyond the bridge, you could go over in a Bath chair. The rest of it made you fit for one for the rest of your natural life …”91 Her description of the unfinished road points towards the modernising future, while her description of the surrounding terrain records the world that was about the vanish: “… banks of varied beautiful tropical shrubs and ferns, behind which rise, 100-200 feet high, walls of grand forest, the column-like tree-stems either hung with flowering, climbing plants and ferns, or showing soft red and soft grey shafts sixty to seventy feet high without an interrupting branch.” Elsewhere she writes, “I, as an ichthyologist, am in the wrong paradise. What a region this would be for a botanist!”92

This account of the natural abundance around Mount Cameroon raises another question when one remembers that when Mary Kingsley first saw this area it had been inhabited for perhaps as much as four thousand years.93 Was this abundance simply the result of high rainfall and volcanic soils? Was it – like the pristine wilderness of the Americas – a recovered landscape of second growth covering the ruins of an earlier civilisation? Or did this biological wealth of the 1890s reflect the way that the peoples of Mount Cameroon, including the troubled Bakweri, had learned to live on the land?

As I was turning these questions over in my mind, I ran across a small table of population statistics from 400BC to 2000AD,

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91 A Bath chair is “a wheeled chair for an invalid”. Bath, in this case, refers to the English town of Bath, known for its hot-springs where invalids were often treated. Oxford English Dictionary, 1993.
92 All quotations are from Mary Kingsley, Travels in West Africa, (Macmillan,1897), p. 552-553 and p. 562.
organised by continents.\textsuperscript{94} I began playing with the numbers, creating graphs to compare the progress of each continental population to the evolution of European populations over the past two to three millennia. The graphs first show the Asian population towering over all other continents, with two sharp setbacks in its growth. The first setback in Asia occurred after the population peaked in the year zero before declining steadily until 600AD. Asia’s population then began to rise again, peaking this time in 1200 before falling once more. This second decline lasted 200 years until 1400 when it began to rise, turning sharply upward in 1900, continuing to this day. The European population history is the ‘little brother’ of Asia, but its peaks are later, with the first occurring in 200AD and the second in 1340, just before the Black Death. Since 1400, the European population has also been rising, although its steep curve began in 1750.

The Americas, both North and South, tell a different story. Their populations, as a whole, avoided the Asian epidemics and rose steadily between 400BC and 1500 when the first Europeans reached their shores. Then the population of the Americas suddenly crashed and did not recover for over 300 years. It is this population crash that allowed the landscape to re-grow, inspiring the myth of the pristine wilderness propagated by the early European settlers in America. Beginning in 1700, the North and South American populations recovered slowly until 1850, when growth began to accelerate, turning most sharply upwards in 1950 as the great innovations in public health were distributed more widely.

For me, the most mysterious graph is that of the African population. In the first place, it was the only population that the author, the demographer J.N. Biraben, believed did not crash from 400BC to 2000. Secondly, for a thousand years, from 600 to 1600, the African population was larger than the population in Europe and steadily growing, with cities and trading links that covered thousands of miles. This was, by the normal biological measure of increase, a successful society. However, Africa’s success began to falter in 1600, just when the Atlantic slave trade began to expand. From 1600 to 1850, the African population stagnated and even

declined slightly, falling far behind Europe’s rapid increase. There was nothing precipitous in this decline, but the growth of Africa was halted in its tracks, only rising again once the slave trade had been brought under control in the late nineteenth century. Like the Americas, Africa’s population growth also turned sharply upwards from the 1950s onwards.

This African population graph reinforces Basil Davidson’s argument that the slave trade disrupted the evolution of African society. But it begs the question of Kuva’s defence even more forcefully: what evolution was interrupted? What kind of society was developing in Africa when the slave trade began? Would it have looked like Europe or Asia or Latin America? Or was some other social and political form beginning to emerge? Alternatively, what might this region have become if the slave trade had ended, but no colonial occupation had then marched in? Would African societies have coalesced into something resembling European states? Or might they have developed a very different system altogether?

**Madame Dugast’s Map, Again**

Much of Africa’s oldest knowledge is oral, built in stories, genealogies and proverbs. Its written record begins with the accounts of North Africans and Europeans who filtered their observations through their own experience and assumptions, including the belief that human societies are organised around states, city-states, nations and empires. But what happens if we peel away this Northern filter of the state? What do we see? There have certainly been African societies resembling states and empires. Just as often, however, we find vast areas with only the names of Mme Dugast’s intertwining cultures covering the terrain. Scholars have usually assumed that each of these small cultures was a potential nation, the way a small child is a potential adult. But it is equally possible that each name on this map never was a nation in the making, but one element in a vibrant larger whole. Moreover, it seems this whole may once have constituted a complete and distinctive political system of its own with a strong bias towards local autonomy. When any large effort was required – for defence or long-distance trade, for example –relationships and alliances were formed.
Recent studies in African agriculture, archaeology and political science are beginning to outline a few radically different political and ecological assumptions that once existed and may still exist in Africa. Archaeologists studying West African human settlements at least 5000 years old reveal a political history based on persistent decentralisation. Richard Dillon, an anthropologist working on the Bamenda Plateau in Cameroon, believes that the pre-colonial society of the Metá represented a very successful and relatively peaceful political system that was, nonetheless, decentralised, stateless and “acephalous” (literally, “without a head”). Jan Vansina uses linguistic evidence to imagine the ancestral culture of the Bantus who colonised the Congo River basin. These people were, he believes, deeply knowledgeable of local ecosystems and highly autonomous. Their political system was based on small units – the House, the Village and the District – that formed alliances as they were needed. As this system evolved, the basic network structure remained, as did the premium placed on local autonomy.  

What makes these ideas so interesting is the possibility that a similar localised, networked system might have been responsible for the abundance of wildlife found on Mount Cameroon and elsewhere in Africa before Europeans arrived. Perhaps this was the evolution that was interrupted by the slave trade and then colonisation. Perhaps this was the society that Kuva and the Bakweri runners defended and hoped would survive. If so, how much of this tradition remains and what might it suggest for ecological societies today?

It is my hunch that we are only just beginning to understand the knowledge of African peoples. James Fairhead and Melissa Leach, for example, tell us that islands of trees in the West African savannah have usually been described by Europeans as the remnants of larger forests destroyed by human occupation; after all, this was the history of European forests over several thousands of years. However, in *Misreading the African Landscape*, the authors argue...
that human occupation over several generations first planted then sustained forests around savannah villages, thereby creating a new complex ecology. These deliberate village forests, together with other changes in land use, meant that there were more forested areas in 1992 than had existed forty years earlier when the French government first took aerial photographs of the region. This research suggests that elements of Africa’s interrupted evolution have endured and may still be able to teach us something today.

All these studies make me wish I had spent more time exploring the Bakweri Co-operative Union of Farmers and its village affiliates. I suspect that the institutional memory of small societies linked in larger networks of exchange and obligation is a powerful legacy in Africa. It may also be a form that re-emerges, with greater sophistication, as Africans find ways to modernise their own society in harmony with their remembered past. Such an evolution would not arise out of quaint institutional nostalgia, but out of the bitterness of conflict and the necessities of local people. In the process, it could create a healthier connection between the intricate sorceries of local ecologies and the complex demands of the wider world. This institutional invention could even prove to have such power that it would travel North, influencing the lives of people throughout the world.

Perhaps the Cameroonians behind the Bakweri website – or the local chiefs of Niger – are among those inventing this modern political form. They might be doing this simply to grab more resources; on the other hand, we might see the old CDC plantations become one of Africa’s experiments in ecological living, drawing on all the cultural traditions of Mount Cameroon. If so, it may turn out that Mme Dugast’s 1949 map, that great mosaic of names weaving in and out of each other, has more in common with Cameroon’s future than Johnson’s 1970 mirage of a solidly unified and uniform modern state.

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**The Rabbit’s Long Ears**

Over the past twenty years, I have continued to correspond with Cameroonians I met in 1982 and with others I have come to know in London. It remains a society and a people for whom I have profound respect. They are feeling their way through great minefields of trouble with unsurpassed humour and intelligence. In doing so, they can draw on the learning of several worlds. Many are people who grew up in village cultures that still honour the customs of the past, but were trained in Western schools and universities serving the global economy. Many have worked with international organisations both in Africa and overseas. They are better travelled and linguistically more accomplished than anyone in my own American family. They are rich in the confusion of competing languages and ideas, having experienced several different ways of being in the world. They also have the skills – too often lost in societies which rely on mass media – of working face to face with small numbers of people they have known a long time. They are individuals equipped to imagine a wide range of futures for themselves and their societies, even when conditions are harsh and confusing. These are riches I can only envy.

Each time I have travelled in Africa, I have needed to test my own openness to strangeness and search for the internal logic of what is bewildering. I have met lonely and alarming moments, but found in them the gifts of revelation. Such moments have been exhausting and frightening but also very rich, touched by the discoveries and fears that underlie all human adaptability and survival. In Laurenti Magesa’s book on traditional African religion, he notes that a good leader is like a rabbit because he has ‘long ears’ and can hear what people are saying. Given the challenges we are facing, it seems to me that we all need to have very long ears. After all, none of us knows whose knowledge, based on what history and beliefs, will help to ensure our survival as the crises of the twenty-first century tumble through our doors. But can we learn to hear the wide range of voices speaking today? Can we accept that all traditions are wise for some part of the time? Who will we recognise as our teachers now?

Figure 1: Mme Dugast's Map (I. Dugast, Inventaire ethnique du Sud-Cameroun, 1949)
Chapter Five

Two Curves

In late 1983, I realised my PhD work was likely to finish sooner than I had expected. It was a most depressing thought. I had enjoyed being identified with SOAS while free to do my own research under the guidance of an excellent supervisor. I would now have to look for work in the middle of a serious economic recession. I was nearly thirty-five, single and childless. I had no recognisable career in mind and, as an American, had no right to remain in Britain once my PhD was done. Perhaps it was time to go home. But ... I had just gambled ten thousand borrowed dollars on a PhD thesis in geography, a discipline most Americans did not understand, using fieldwork in Cameroon, a country most Americans did not know. Ineligible to stay in Britain, I feared that if I did go back to the States, I would never fit in. The best I could do was look for work in both places.

Over the next year, I contacted about a hundred and fifty people in a stubborn effort to earn my living. I lacked the patience to be a good academic and wanted to stay with developing countries and international business. I applied to aid agencies, banks and multinational companies, answering every advertisement and following up every lead. I hoped to find work that used good research in decision-making, but soon realised many employers disliked anyone with a doctorate. No one, I was once told, ever had more than twenty percent of the facts they needed when making a decision, so what could a researcher add? In several places, I was too old to be a ‘young professional’ and too young to be taken seriously. Elsewhere, I was just too peculiar; in return, I found these organisations remarkably uninspired. I kept looking for people in practical settings who were open to good research and the risks of original thinking. As I wrote each letter, made each phone call, I worked on instinct, doggedness, luck and strong coffee; at times my own foul moods were the biggest obstacle of all.

In the end, a string of introductions beginning with a cold call to an organisation in Paris linked me to people in New York, Boston and London where I met with two men from the planning
department of Royal Dutch Shell. One man was English, the other from Pakistan. Both were working on new long term scenarios of the global business environment. We met for lunch one sunny day on the terrace of the Royal Festival Hall. We spoke together quickly and comfortably, three people with a lot in common. But, said the Englishman regretfully as we stood up to leave, “We have no money, so there is nothing we can offer you.”

When someone in a large and wealthy organisation says he has no money it means that his departmental budget is all used up and he cannot ask for more. I, however, was still living on money from an American grant and this was the first and only meeting where a mutual recognition of strengths and interests had occurred. About a week later I wrote to suggest they give me an assignment to do without pay. If they liked my work, they could hire me.

Over another lunch with the head of the scenarios team, Peter Schwartz, I was given my test assignment: identify the next newly industrialising countries based on their cultural characteristics. The question was uncomfortably close to old stereotypes of barbaric Africans and fatalistic Asians, but it addressed a very real corporate task: the need to foresee which countries would require energy investments over the next 20 years. Western companies had already been surprised by the sudden rise of Taiwan, Singapore, South Korea and – above all – Japan. No one wanted to be caught out again. But could anyone anticipate which countries were likely to grow quickly and which were not? And did culture have anything to do with it?

What threw me most about this assignment was that it came after several years of privately rejecting all development theories. Now I suddenly needed an alternative framework of my own. I wanted to honour what I had seen while travelling, but needed to find some pattern that might anticipate where and when industrialisation, including the activities of a oil company, would fit in. I had been told that energy demand was correlated with economic growth, but what was the relationship between economic growth and culture?

98 For those who are unfamiliar with the term, scenarios in this context are two or three alternative descriptions of the future business environment. They are not forecasts, but imagined conditions the business might have to face.
My answer to this question became the 1984 paper, “The Social Foundations of Economic Development.” Unlike the slippery rocks of a traveller’s perplexities, these ideas have turned out to be a solid dry stone on which to stand. They arose out of patterns of change observed in the late 20th century experience of countries seeking to transform themselves as rapidly as possible from agricultural to industrial societies. These simple patterns not only helped me explain the experience of developing countries, and later of pre-industrial England, they still provide rough rules of thumb for thinking about the invention of ecological societies today. None of this, however, was apparent at the time; I just needed work and wanted to answer Shell’s tricky question in a way my academic colleagues could respect.

Visiting Geneva

I began in the SOAS library among the alien basement shelves of development economics, some two floors away from the familiar studies of Cameroon. One by one, I took different books off the shelves, skimmed them quickly and then put them back. Some were too old, others too specialised. Some used queer cabalistic formulae I failed to grasp. Several were so fat, they were hard to hold; others fit neatly into my hand, but their titles promised more than their contents provided. A few were brand new, stiff with fresh proud bindings. These outshone the dog-eared classics whose pages had been greased by thousands of thumbs. As I worked my way down the aisles, I was surrounded by the development theories of every blind master who had ever touched the legs, trunk and hoary hide of this particular elephant.

Among all these was a small modest book published in 1972: *Contents and Measurement of Socioeconomic Development* by D.V. McGranahan and others from the Statistical Unit of the United Nations Research Institute for Social Development (UNRISD). I liked it immediately. It was small and neat, a tidy concise little character of a book. Rather than theory, it offered a practical diagnostic tool which identified and used the best indicators of development. One of these indicators was literacy. Literacy, I

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reasoned, was the product of education and education was linked to culture. Here was a place to begin. But the book was then twelve years old. Had the authors done any work that was more up to date?

Over the next few days, I established that the UNRISD Statistical Unit was still functioning in Geneva and persuaded Peter Schwartz to send me there to see what I could learn. I spent about a week with Donald McGranahan, Claude Richard and Edouardo Pizzarro, trying to understand what they had done and how it might be used in Shell. They were surviving on a shoestring, working with dedication and persistence on a collection of statistics few people bothered to understand. Their work had started in the 1960s when Donald McGranahan asked a very simple question: of all the statistics collected from national governments by the United Nations, which ones actually measured development? Of these, which statistics were so reliably collected and so consistently defined that changes from one decade to another could be monitored and countries could be compared?

To answer these questions, the team had visited statistics departments around the world, revisiting them with every new census. They had spent hours ensuring that every number in their database was reliably recorded and consistently defined. About a quarter of their statistics measured the level of health and education in society: adult literacy and school enrolment, life expectation and access to clean water, for example. Another quarter monitored changes in employment and the productivity of labour in agriculture and manufacturing. A third large group of indicators measured economic activity, such as investment and foreign trade or consumption of steel and energy, while the rest tracked communications through newspapers, telephones and televisions. Unifying them all was a novel system that linked each statistic to a common development scale of one hundred and ten points.100

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100 Life expectation measures how long a newborn baby born can expect to live and in measured in years. GDP (gross domestic product) on the other hand, is usually measured in American dollars. When such different units are used to measure phenomena, it is hard to compare them. By linking each indicator to the same scale, however, comparisons are much more easily made. For a full discussion of the methodology used by the UNRISD Statistical Unit, see Donald McGranahan, Claude Richard, Edouardo Pizarro, Measurement and analysis of socioeconomic development: an enquiry into international indicators of development and quantitative interrelations of social and economic components of development. United Nations Research Institute for Social Development (Geneva, 1985).
Altogether, there were fewer than twenty indicators that accurately described the development process. They did not cover everything, but they were completely reliable. In 1960, only fifty-seven countries were represented in the database; by 1980 there were one hundred and twenty. The team’s standards were so rigorous, however, that they only published statistics using population numbers from census data collected every ten years. Anything else, they argued, would only record the extrapolations of statisticians, not observed facts on the ground. This may have led to their downfall. Most people wanted semi-reliable yearly data rather than solid information every ten years. By the early 1990s, the Unit was closed.\textsuperscript{101}

The week I was there, Donald McGranahan, Claude Richard and Eduardo Pizarro were generous with their time and ideas. They explained how they had tested several statistical techniques before inventing their own system. They shared with me the diagrams that revealed interesting patterns. They offered their own observations on what they had seen in the data and suggested that I should look closely at those countries whose economic indicators lagged the social ones. In such countries, they said, rapid economic growth had often been seen in the following years. They also noted a curiosity: many indicators, notably the economic ones, rapidly accelerated after a country reached 68.3 years of life expectation. They did not offer an explanation for this turning point – it was so bizarre they did not know what to make of their own data. But it could be a useful signal of imminent high growth and industrialisation. As I prepared to leave, they gave me a diskette of their data, an armful of unpublished papers and several more very good ideas.

\textit{A Story of Two Brothers}

As I read through the various papers I brought back from Geneva, the beginnings of an explanation of the turning point began to take shape. I began to notice two very different patterns in the diagrams that plotted the relationship between each indicator and life expectation. One pattern was created by lines that travelled more or

\textsuperscript{101} A few years later, however, the basic research of the UNRISD Statistic Unit influenced the development of the Human Development Indicator which is now widely used.
less diagonally from the lower left to the upper right hand corner of each social indicator graph. These lines showed that countries where more children went to school, more people had access to clean water, and more adults could read, were also the places where fewer infants died and everyone could expect to live longer lives. The gradual slope of the lines suggested that these were changes that took place together, step by step, over an extended period of time, lasting at least a generation.\(^{102}\)

Another group of lines described economic activity. These were more like right-angle, elbow-shaped corners than a gradual slope. They first rose vertically as life expectation improved, then turned sharply to the right after life expectation had reached the magical number of 68.3. At this point, economic activity began to grow quickly, shown by the lines shooting to the right. These marked a rise in steel and energy consumption, increased productivity in agriculture and manufacturing, and rapid growth in investment and trade.

I looked at these two patterns over and over again. Diagonal lines versus ‘elbow’ lines. What did they mean? I took the diagrams to show two people at Shell whose team I had loosely joined. One of them, Arden Brummell, was a geographer from the planning department of Shell Canada, just finishing a two-year assignment in London. He looked at these patterns and immediately said: “But that is a double-S curve,” quickly sketching it on a white board on the wall. First he drew a lazy, sloping “S” which travelled up from the lower left to the upper right corner. This was the social line. Underneath that “S”, he drew another one, a very upright “S” with a long tail and short flat head like a snake poised to strike. This was the economic line. The two lines ran parallel to each other at the lower start of the double curve, then separated in the middle, before coming together again in parallel lines at the top. They were like the footpaths of two brothers walking together through a valley, then climbing a hill separately, before meeting again at the top. As the younger brother played in the stream bed, building experimental dams and bridges, the older boy took a slower, gradually rising footpath to the top. Once the younger one could see that his elder

\(^{102}\) To be perfectly accurate, the diagrams did not show changes over time, but simply showed the distribution of country data for 1970. Similar diagrams drawn since then using time series data have justified using this distribution pattern for a single year to describe changes over time.
brother had reached the ridge, he took a quick direct scramble up the hillside, meeting him in time for a shared leisurely walk to the pub at the crown of the hill. If the elder boy’s gradual ascent resembled the social development of a society, then his kid brother’s playful delays in the valley stream followed by a rapid upward climb was akin to the experiments and rapid catch-up of a developing economy.

I took Arden’s idea home with me and began thinking about what it might mean. In fact, these two lines were not separate footpaths, but two interlocking developments. I drew his sketch again and began to wonder about the relationship of the two lines, testing them against what I knew and what I had seen. I began by thinking about the top end of the curve, those flat, parallel lines where both social and economic development seemed to have slowed down – that point where the brothers were walking wearily side by side on the crest of the hill. Certainly the old house in Bloomsbury and the silent confusions of the SOAS bar allowed me to imagine British society as one that – temporarily, perhaps – had paused. There was a kind of fatigue in society, a noticeable lack of dynamism and a tired reluctance even to think about what should be done next.

This sense of having no where to go was echoed in some of the conversations I heard during my visits to Group Planning where people were debating the causes of the economic recession of the early 1980s. The slow growth in Europe was particularly worrying, causing people to speak in gloomy tones about “Euro-sclerosis,” as if all European society had degenerated into the rigidities of old age. The top of the Development Hill may have offered a very grand view to these older residents of Mature Societies sitting comfortably in the ‘Development Pub’, but there was something distinctly unsatisfying about the experience.

But what of the beginning of the double-S curve? Here the two lines of social and economic change were also flat and parallel, seemingly incapable of any change at all. I thought of my travels across the Sahel in 1976 and 1979. I knew from the UNRISD indicators that in 1980 Mali and Niger had some of the lowest social and economic indicators in the world – less than 10% of adults in Niger could read, for example. I remembered the card game in the
bush, where an unresolved history and struggle for authority had slipped into aggressive and nasty teasing. Was it possible that the capacity for political agreement needed to be in place before basic literacy could improve? After all, how could all adults become literate if there were no agreement on who should pay for education and who should benefit? Perhaps the two flat lines at the beginning of the curves did not represent a period of stagnation, but the construction of basic political foundations. If so, the very placidity of their flatness hid intense rivalries and heated conflicts over the evolution of new goals and rules.

If this were the case, I could imagine my two metaphorical brothers were not walking amiably beside the stream bed at this point. They were quarrelling fiercely over which was the right path to take and who should decide. Was it their quarrel that had led to the parting of the ways? This idea of hidden arguments was consistent with what I had noticed not just in the card game, but also while researching the banana trade of Cameroon. In light of these scenes, the first stage of the double-S curve was a dynamic period when fundamental agreements about society’s goals were negotiated one by one, argument by argument, fight by fight.

But what was happening between the conflicts of Basic Agreements and the placidity of Mature Societies? What was the interaction of social and economic activity as the footpaths diverged? The diagram suggested two different dynamic stages here. The first began as the brothers started to talk to each other again after going their separate ways. The younger boy may have begun to climb out of the valley, but not yet found a clear path to the top. Instead, he kept experimenting with one route after another, helped by his elder brother’s wider perspective from above. In societies, people who enjoyed better health and education would also have a sense of wider possibilities and be more willing to experiment with new risks and ideas. At this point, the economy would start growing thanks to their new knowledge and strength. As the economy grew, the new wealth would be reinvested to provide better health and education for even more people. This second stage could be described as Creative Economies as rising health and education supported the economy which supported better health and education.
Eventually, the whole adult population would be able to read and most parents could expect their new babies to survive, causing the dynamics of change to alter again. By this time, the older social boy would be standing impatiently at the brow of the Development Hill, cheering on his younger economic brother as he climbed up from the stream. Now they knew what needed to be done: the younger economic boy must climb rapidly upwards to meet his social brother. Together they would look around and see a fast short route – the industrial path that the advanced nations had already blazed. Urged on by his impatient sibling, the lagging little brother would scramble up. At this stage, industrial investments would begin to expand and productivity in agriculture and manufacturing would rise, as everyone began rapidly climbing the Development Hill. Along the way, they would begin to buy the goods their neighbours in the Development Pub were already enjoying. This third stage was therefore that of New Consumers as people demanded a better standard of living before relaxing over a beer while admiring the view.

So, Basic Agreements set the goals that led to Creative Economies where social improvements fed economic growth which paid for more social improvements. This led to the third stage of New Consumers as the economy grew to meet the demands of the modern population. Once these demands were met, the slower pace of Mature Societies settled in.

With these ideas of how the curve might work, I experimented with the UNRISD data. I sorted countries according to their position on the double-S curve in 1970 and looked at their economic growth in the following decade. Many countries fit the pattern I was expecting. Rapid economic growth was frequently seen in countries where the social indicators – such as health, education and access to clean water – were more advanced than the economic ones such as the consumption of steel and electricity. Clearly, strong social foundations created the conditions for rapid economic growth. Obvious as this conclusion seems now, it reversed a long-standing business assumption that health and education were ‘luxuries’ a country bought once it was wealthy enough to do so. For me, however, the biggest surprise was that there was a pattern and a sequence of change. Not everything was the product of uniqueness,
history and circumstance. At the same time, this simple diagram was personally satisfying because it represented what I had seen as a traveller when there were no visible patterns at all.

My immediate colleagues in Group Planning liked the work because they had been busy exploring the role of values and cultural differences in economic systems and behaviour. These simple graphics gave their arguments greater credibility by offering them a statistical basis for seeing learning and culture as precursors of economic change. The statistics were especially important because Shell was, and is, a company of engineers, economists and accountants. They describe the world and discuss its future in numbers, explaining their ideas to each other with statistical comparisons and graphs. Anything too metaphorical, too based in literary language, is foreign and easily rejected. So the creation of a statistically-based drawing to explain the role of social change in an economy gave my struggling colleagues in the socio-political section of Group Planning a great boost. Just as important for my own prospects, the work was endorsed by the head of the planning department, Arie de Geus who had managed Shell’s company in Brazil for a number of years. “This,” he said after I presented my material, “is what we have all seen in developing countries, but never had so clearly explained.” The double-S curve reinforced his own views, published later in the Harvard Business Review and elsewhere, that the only real advantage a company had in times of change was to learn faster than its competitors.103

Which Wave?

The big debates in the scenario team did not, however, revolve around my work. Instead, they puzzled over the meaning of the 1980s recession in Europe and North America. This reflected the geography of Shell’s business and the preoccupations of Peter Schwartz who led the scenario team after Pierre Wack retired. Pierre Wack and Ted Newland had introduced scenario thinking in Shell using a combination of mystical philosophy and sharp political insight. Peter, on the other hand, was fascinated by the impact of new technologies, many of them from the buzzing frontiers of

Northern California. The central question in Peter’s mind was how much these technologies were likely to change societies and businesses over the next twenty years. He was particularly interested in whether they might provide the basis for a new wave of economic growth in the Mature Societies of Europe, North America, Japan and Australia. In 1980, these countries had about a quarter of the world’s population, but were producing roughly three-quarters of the world’s wealth.\footnote{104} It was this wealth that had created and sustained Shell’s businesses in previous decades – not the economically insignificant countries still struggling up the Development Hill.

Peter’s thinking was also conditioned by the revival of theories suggesting that there were long waves of economic growth driven by changes in technology. If these theories were right, the deep recession of the early 1980s – like the depression of the 1930s – could be interpreted as a period of ‘creative destruction’ of businesses and technologies which were no longer needed. As these businesses failed, their destruction made room for a new kind of economy, driven by the adoption of new technologies. Previous long waves in industrial economies had been associated with the arrival of transforming technologies like the steam engine, electricity or petrochemicals. According to this theory, as the new ways of doing things penetrated an existing economic system, everyone would find a way to use the innovative technology in their own work. As they invested more, the economy would grow more quickly. Such growth, however, eventually slowed down once everyone had adopted the new tools and demand for them declined. At this stage, factories and businesses would be forced to close and people would once again lose their jobs. Another period of creative destruction and economic decline would set in until the next technology wave took off. Such cycles, said these thinkers, lasted about fifty years from the arrival of the new technology through rapid growth, decay and reorganisation.

These ideas were central to the debate in Group Planning in 1984. Did such long waves exist? Were we at the end of one such technology wave in 1984? If so, what was the next wave and where would it lead? Would it be based on information technologies?

\footnote{104 Data from \textit{1998 World Development Indicators} on CD-ROM, World Bank, 1999.}
Were they as transforming as steam engines had been? If we were at the start of a new long cycle based on information technologies, when would the next period of rapid growth begin?

As I listened to the debate, it was clear that these theories were based on the history of the industrial revolution. They did not describe countries that had not industrialised. Rather, they were cycles noticed by people in the Mature Societies who had already scrambled up the Development Hill. It was a view of the world through the eyes of our senior doyens of the Development Pub, postulated while they sipped their drinks and admired the landscape they had navigated when they were young. But their discussion of technology waves – which was clearly important – ignored that scrambling pair of brothers who were about to arrive in the Development Pub, footsore and ambitious, with daydreams of their own.

While I listened to my colleagues at Shell debating fifty-year technology waves, I kept looking at the UNRISD record and the rapid climb of new societies up the development curve. I began to see the double-S curve as marking – not a fifty year cycle – but a 250-year cycle, beginning with the English industrial revolution in the 18\textsuperscript{th} century. Moreover, since the 1960s, the Mature Societies with their declining share of the population, had been enjoying their drinks in comfortable isolation on top of Development Hill. Now they were about to be joined by a new throng of holiday makers who would soon be crowding around the bar calling for refreshments of their own and chairs in which to sit and admire the long view.

To test this idea, I played with the UNRISD data in order to identify how many countries with how many people were at which stages of development in 1984. I kept wondering what changes might be brought about by the new presence of all those people now scrambling up the slopes of the Development Hill. The more I looked at the numbers, the more my story of the future did not begin with technology, but with the millions of people in Asia, the Middle East, Africa and Latin America who were healthier and better

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\textsuperscript{105}This hunch is supported by a graph appearing in volume III of Fernand Braudel history. The graph compares the Kondratieff cycles of roughly 50 years, to what Braudel calls the “secular trend” – a long-term rise in British prices between 1710 and 1950. See p. 81, \textit{Civilisation and Capitalism, 15\textsuperscript{th}-18\textsuperscript{th} Century, Volume III: The Perspective of the World}. University of California Press, (Berkeley, 1992).
educated. Some of their societies were already important economic actors in the world. As more joined them, I could imagine a time when the societies of the South would begin to compete with the mature nations for international influence, power and economic success. Out of this competition, what was likely to emerge? What experience, philosophies, skills and ambitions would the newly strong societies bring in? How would they be received by those maturing residents of the hill who had become accustomed to the certainties of their own point of view? In my story, the whole world was about to enter an awkward, adolescent time.

This was not the only possibility I puzzled over at my Bloomsbury desk. Another obvious consequence of global economic development was that more people now expected to enjoy the material standards of living that my Anglo-American societies have known for generations. However, development follows the model of the industrial revolution, that English accident which thrived on the illusion of abundant British coal and North America resources. If everyone’s aspirations were now to be met, the technology wave I saw needed to make efficient use of natural resources, which were – after all – still finite. Given the sheer numbers of people joining the world population, the demand for new technologies and the human skills to achieve this efficiency was likely to be on an unprecedented scale. That is why I found myself looking not at the start of a new fifty-year wave, but at a new 250-year transformation of the way we live now. This ecological revolution will be as profound as the shift from agriculture to industry. Not only do we need to use resources more efficiently, we must restore the damages of industrialisation and learn to repay nature’s subsidy so we can call on it again.

For me, therefore, 1984 was the year I imagined this second very long double-S curve. The technology waves of the industrial system will not stop as this curve advances, but they need to be part of a larger project. This is the task of learning how to shift towards a new human system that supports both mankind and the natural world. No longer can we assume that the rest of life on Earth will always supply us with clean air and water, abundant fuels and fertile soils for our crops. Instead, our human activities need to support the Earth and all its creatures so that they can sustain us. This requires
not only new technologies, but also new philosophies, knowledge and social agreements which might emerge in any corner of the world. It is already a transformation being driven by necessity – as stark as the forces that brought the plague to Europe in the 14th century and took advantage of a beachcomber’s coal.

I believe we are only just beginning to understand the ecological challenges we are facing and what it might mean to live ecologically. Looking back from the top of the Development Hill we can see the many hazards and complications we successfully negotiated in the past. If we turn around to consider the future, however, we find ourselves facing an unknown country through which we must travel without reliable maps and very few guides. Compared to scrambling up the Development Hill, this journey will be like scaling the Himalayas, a feat so daunting that the Development Hill will one day look like a fossilised sandbar in very distant plain.

Twenty Years On

In 1984, I twice presented the double-S curve of social foundations, first to Shell’s scenario team, then to the planning management. For the managers, I also described the challenge developing countries might pose to mature societies and outlined the emerging curve of resource efficiency in a finite world. Of these three messages, only the social foundations story made an impact. People only hear what they are ready to hear and there is no advantage in being ahead of one’s time. Peter Schwartz’s information technology story was both more timely and important for a company with large markets in Europe and North America.  

The social foundations curve, however, secured me a full time job for two years in Shell. While my contract was being negotiated, I wrote up my presentation, but never published the paper. I was not wholly convinced by my own work; there were too many exceptions to the rule. A number of countries grew rapidly in the 1970s without solid health and learning, thanks to the high price of oil or other resources. Elsewhere, countries were socially strong, but lacked the

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institutional rules to encourage their economies, or were caught in conflicts they could not resolve. Better health and education were not enough on their own. Other building blocks were also required: sound macro-economic policies, good transport and communications, reliable institutions with good rules and the capacity for political agreement. All are critical – as is dumb luck and good timing – but the capacity for political agreement remains the most mysterious building block of all.

Recently, I used three World Bank statistics to see if the double-S curve was still visible. It was. Not only that, but in most parts of the world, people are healthier and more literate than twenty years ago. Many believe that the wealth of the Development Hill is within their grasp. And yet, there is a sense of something wrong. The glittering development promise of the 1970s is dull and less convincing, with many people either underpaid or unemployed.

More fundamentally, what is the first double-S curve measuring? Our statistics define our goals, measuring those things that give us pride and prestige. The UNRISD statistics defined success as more goods and money for more people who are more literate and live longer. These goals, however, leave out any mention of the natural world which has supported human ambitions so far. Any future ecological society will need to put the natural world at the centre of our dreams. But what indicators will monitor ecological economies? What statistics can track the health of habitats and ecosystems, the use of land, or the degree to which our activities support all life, not just our own? Is there any accounting unit for comparing the ecological record of all organisations: a church, a government department, a school and a business? What might be their ‘profit and loss’ statements in an ecological age?107 Can markets support ecosystems? If so, using what price signals? If not, will prohibitions and sacred groves, penalties and moral judgements suffice to defend the integrity of the planet? Either way, what might define a man’s prestige and his society’s triumphs in an ecological age?

107 The Global Reporting Initiative (GRI) has begun to develop such a record, but it only applies to businesses and does not seem to have yet created anything as simple as profit and loss statements, which are the backbone of stock market analysis and comparisons. See http://www.globalreporting.org/
I don’t know the answers to these questions, but I still use the indicators chosen by UNRISD when I work in a new country. I also use the ideas behind the double-S curve to think about the social foundations of ecological societies. Above all, I keep wondering how we will learn to agree on new goals and new definitions of success. Early English society may have been weak technologically, but had a fine instinct for innovative agreements and rules. Our challenge is the other way around: we are rich in technologies, but still struggling to invent effective ecological agreements. So where will we find this political capacity and how will we measure what we agree to achieve?
Figure 2: The Double-S Curve suggests that social change takes place gradually over time while the economic system grows most quickly once the social foundations are strong enough to support it.

Figure 3: The diagram imagines four stages in the development of 20th century industrial economies. “Basic Agreements” is where the capacity for political agreement is created. “Creative Economies” begin as stronger social foundations create stronger growth which can be invested in stronger social foundations. The “New Consumers” stage occurs when the economy grows to meet the demands of a healthier and better educated population. “Mature Societies” are reached when consumption is saturated and both social change and economic growth slow down.
Chapter Five: Two Curves

The Next Revolution
Reversing the subsidy from the natural world

Figure 4: As the global population rises and expects a higher standard of living, a second double-S curve will be needed to create ecological economies from both industrial and agricultural societies.
Chapter Six

Darwin’s Face

I don’t now remember the day I began working full time at Shell. I remember being struck by the contrast between the homogenized façade of Shell Centre and the broad thinking I often found inside. However, oil companies are also clumsy, complex organisations, so reliant on sophisticated technologies and bureaucracies that people spend much of their time just managing the system. That is one reason Shell assigned long term thinking to the scenarios team which included outsiders like myself and managers on two to three-year assignments. Our job was to prod, cajole, trick and stimulate the business people to think about the future. We told different stories of futures the managers might have to face, then asked them to imagine their responses. Gerhaardt Schwartz, who did a similar job in the Netherlands, identified the boundaries of our work: “There is an area, a band of tolerance, among any management team. Fall below it and nothing happens; go above it and they kill you.”

When my two years in Group Planning ended, I did not try to find a permanent job in Shell, but went independent. By that time, I had led a major scenarios project on the future of China and a similar project for Shell’s chemicals business in Japan. Work with Shell Chemicals continued after I was self-employed, on Japan, Latin America and Northern Europe. Then the work with Shell was over. New clients were hard to find, however. When I left Shell in 1987, I believed that large companies needed long-term thinking. By 1990, I realised that a need was not the same as a market and was struggling to pay the bills.

As a way of staying busy and encouraging new work, I organised a meeting at SOAS on the social and economic impact of AIDS in Africa. It took a year to persuade six international businesses to attend, but in April 1992, half a dozen business people spent a day with others from voluntary organisations, the British development agency, the World Health Organisation, and several

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108 Personal interview, 1993, with Gerhaardt Schwartz, Rijkswaterstaat, the Hague.
British universities. It was an unusually successful meeting, pulling together the limited knowledge of 1992 and led to the formation of BEAD, the Business Exchange on AIDS and Infectious Diseases. It was also the start of my own interest in the changing profile of epidemic disease and its possible effects on society.

Over the next few years, my practice grew and by the mid-1990s I was well-established. There was one extremely busy year when I had more work than I could handle, all of it with companies in the Far East. By this time, I was outgrowing my office at home and moved my work into a pair of late 17th century rooms overlooking Gray’s Inn Square. Two assignments came with me into Gray’s Inn in January 1998. One was with the World Business Council for Sustainable Development as one of a team working with about fifty large companies to imagine the future of sustainability for the next fifty years. It was the first time I had worked with corporations on anything relating to the ecological future. The other assignment was with the Society for International Development (SID), facilitating the development of public scenarios exploring different futures for Kenya. This project took me to East Africa repeatedly over the next five to six years, first to Kenya, then to similar jobs in Tanzania and Uganda. While corporations work to survive in the world as we know it today, both of these assignments forced me to think more deeply about living ecologically and the possible futures of post-colonial societies in Africa, two themes of this book.

That may be why, as the 1990s ended, I began writing this book and started to look for the role of health and education in the invention of the English industrial revolution. In 2000, I covered one wall of my Gray’s Inn office with small fragments of paper, each one carrying another historical fact, colour-coded and dated. I began with one long black line that represented the rise, fall and recovery of the English population from 1100-1800. Gradually, cutting across that jagged population range a slowly rising line of purple notes began to track the growth of schools and literacy in the population at large. A horizontal line of pale turquoise also cut across the range. These were the notes of university learning, of new concepts, philosophies and knowledge. Both supported the idea that better education preceded the industrial revolution – by
centuries. However, scattered like exploding landmines every few decades were bright orange notes marking the dates of epidemics in one town or another. What did that mean? What might these epidemics teach us about living ecologically today? What was the role of disease in the systemic invention of the industrial revolution? How did disease re-shape the relationship of conquering and conquered peoples? What does any of this history suggest about the possible impact of AIDS today?

**The Schools of Clerkenwell**

Soon after starting at Shell, I left the house off Queen Square and moved to Clerkenwell, then an unfashionable, forgotten corner of central London. Here I found a much older history of the city hidden behind the dereliction of mistaken urban planning and economic change. This history provided important clues about the connections between learning, rebellion and disease. As I began walking around, the first clue I came across was the New River Head on Rosebery Avenue. In the early 17th century the New River Company was formed to bring water from Hertfordshire to the City of London. I slowly traced the remnants of the New River on my walks, thinking that access to clean water was not just a good indicator of 20th century development, but also of pre-industrial London.

The New River was not the only development indicator I found, however. One afternoon, an older friend and I walked up Rosebery Avenue to St John Street, looking for Owens School. Founded by Dame Alice Owen in 1610 for the children of Clerkenwell, my friend had enrolled here as a ten-year old school boy in the early 1930s. Then the school moved to the suburbs in the 1950s; by the mid-1980s, the high brick school building we found was empty, waiting to be torn down. Owens School, however, prompted me to discover half a dozen other ancient schools established in and around Clerkenwell between 1509 and 1702. While all have left central London, most are still functioning several centuries later, providing strong evidence that better education preceded industrialisation in England.109

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109 St Paul’s School was founded in 1509 in St. Paul’s Churchyard by John Colet, Dean of St. Paul’s Cathedral. It moved to Hammersmith in west London in 1884. Christ’s Hospital was created in 1553, just west of St. Paul’s, when King Edward VI donated the buildings of the Greyfriars Monastery to found a hospital for orphan children.
For a good decade or more, these neighbourhood residues of early schools were the only evidence I had that adult literacy had increased before England’s industrial society was invented. Then, through the millennium year, 2000, I began working on my wall of health, literacy and learning in pre-industrial England. As I collected every scrap of information, I kept returning to the year 1300, stubbing my toe on its solid magical roundness. Like the year 2000, it was a year of invisible well-being in Europe when (as far as we know) nothing happened. Yet, less than fifty years later, the Black Death arrived. In 1300 there were perhaps six million people living in England. One hundred years later, only two and a half million still inhabited the country, with thirty to forty percent of the population dying in 1348-49. It was a fall so steep and so fundamental that the population did not recover for another 450 years. The Black Death of 1348 makes 1300 stand out like a stubborn solitary peak of population and well-being.

Today, there are many similarities between the year 2000 and 1300AD. The two centuries leading up to 1300 were years of expansion and prosperity in Europe. In England, the population was growing and settlements were spreading into wetlands and wastes, acre by acre, town by town. There was an exceptional absence of disease, and warm weather supported healthy crops that fed the expanding population. England’s trade with continental Europe, the Mediterranean and Asia was also growing, with wool and coal among England’s exports. After 1300, the climate grew cooler and more unpredictable. Crop failures and widespread disease in farm animals brought hardship to many. Yet such crises did not lead to...

This school is now in Horsham, Sussex, to the south of London. Owen’s School, once near the Angel, was founded by Dame Alice Owen in 1610, but moved north to Potter’s Bar the 1950s, and even further north to Hertfordshire in 1973. The Charterhouse School, founded in 1611, was also given the former buildings of a monastery, the Charterhouse monastery near Smithfield. This school moved to Goldaming, Surrey in 1872. The Graycoats School was established by the Church of England in 1698 to offer the children of the working poor free elementary education; it seems to have vanished from the neighbourhood, but so far I have found no record of where it went. Finally, in 1702, the Society of Friends transformed an old workhouse in Corporation Row, Clerkenwell, into a school for Quaker children, teaching basic literacy and skills. This school moved to Saffron Walden in Suffolk. Information has been taken from Richard Tames, Clerkenwell and Finsbury Past. Historical Publications, London, 1999, p. 30 and 33; and from Ben Weinreb and Christopher Hibbert, London Encyclopaedia, Macmillan, 1983, p. 783.

110 Mark Bailey, “Population and Economic Resources” in An Illustrated History of Late Medieval England, edited by Chris Given-Wilson. Manchester University Press, 1996, p. 42-43. “Establishing the trends of population ... is ... problematic .... There was sustained and rapid demographic growth between c. 1100 and c. 1300, although there is less agreement over the size of the population at its peak or its timing; on balance, we might speculate that there were close to 6 million people in c. 1300, after which the population ceased to grow. The Black Death of 1348/49 killed around 40 percent of England’s population, and successive epidemics in 1361, 1369 and 1375 sapped any immediate demographic recovery.”
any great social innovations. Instead, the roots of social invention were first flung down in the warm dry centuries leading up to the prosperous anonymity of 1300.

One of the deepest roots were open secular schools, the earliest of which date to the 12th century. In Anglo Saxon times, monasteries kept records of their property in land-books using an elaborate ceremonial Latin. From this a simpler document emerged: a letter written in English and authenticated with a lump of wax stamped with the Great Seal of England. Such writs, as these letters were called, were originally used only by the most powerful to record changes in land ownership, but as England’s population soared, writs became more common; by 1300, peasants holding less than half an acre were recording their land transfers in writing.\textsuperscript{111}

From the lofty peak of 2000, these early land records become an important motive for starting the first open secular schools in England. Writs, after all, were only useful if there were people able to read and write them. Such people needed to be trained. As land grew short, more land records were required. As the writs were needed, the demand for literate clerks also grew. The demand for clerks then created the demand for schools. These schools were open to anyone and were independent of priestly control, endowed by local patrons so that even the poor could attend. Over the next six hundred years such voluntary open schools spread from cathedral towns to smaller market towns and even into the villages, taking the skills of literacy to the wider population. In this quiet and very gradual way, that magical and secret skill of priests and princes – the ability to read and write – came to be shared by anyone with the desire to learn.\textsuperscript{112} By the 15th century, there are paintings of saintly women reading and teaching children to read. In

\textsuperscript{111} Christopher Brooke, \textit{From Alfred to Henry III 871-1272}. The Norton Library, 1961, 1969 printing, p. 76-77 on the earliest writs. See M.T. Clanchy, \textit{From Memory to Written Record: England 1066-1307}. Blackwell Publishers, Oxford, 2nd edition, 1993, p. 52-53. “If in many parts of England, as is probably, and not just on the Peterborough abbey estates [where records survive], single acres and half-acres were being conveyed by charter by 1300, the number of peasants’ charters produced amounts to hundreds of thousands or even millions.” These documents were known as Cartae Nativorum. Quotations from Clanchy, p. 50.

\textsuperscript{112} Nicholas Orme, \textit{Education in the West of England 1066-1548: Cornwall, Devon, Dorset, Gloucestershire, Somerset, Wiltshire}. University of Exeter, 1976, see chapter 1, passim. “…the twelfth century may be said to have begun a new era in English education, being the first century to possess numerous schools exhibiting major features in common with those of today. … The largest and most prominent of the secular school in the middle ages were those that served the general public. They were not restricted to any particular group of class of people, but stood open to anyone whom the master accepted and could pay the fees he charged.” Quotation taken from p. 1.
these images, reading has become both a religious and a domestic ideal.\textsuperscript{113}

From such beginnings, many things followed, including the development of universities where masters and students gathered together to learn.\textsuperscript{114} The two centuries before 1300 were a time when men travelled freely across Europe. They carried new ideas with them and brought back what they had learned abroad, inspiring the formation of first Oxford and then Cambridge University. Thus, by 1300, the petty schools of England taught small boys to read, the grammar schools taught the older ones Latin and grammar, while the universities introduced the classical learning of Arabs, Romans and Greeks. The universities also brought a habit of Socratic teaching that survives to this day in English tutorials – \textit{lectio et quaestio} – read and question.\textsuperscript{115}

There are two things that I find remarkable about these institutions of learning in early England: their durability and their autonomy. Their durability is remarkable because schools and universities have survived every extreme event or silly fashion that history has thrown at them. Both Oxford and Cambridge University were formed around 1300. The Inns of Court in London, where people still receive legal training, may have begun even earlier.\textsuperscript{116} All three continue to function as educational institutions today. Schools have also endured. Smaller and more precarious than the universities, the open secular schools came and went, but the desire to create and run schools survived; as some failed, others replaced them. The durability of open education at all levels is the first remarkable fact in the story of English inventiveness: the persistence of places to learn.


\textsuperscript{114} Jack Good argues that without literacy, the rational revolution was impossible, since literacy creates written records which can be studied and compared. In oral traditions, such comparative analysis is virtually impossible as sound vanishes (or did before sound recordings were possible.) See Jack Goody, \textit{The Domestication of the Savage Mind}. Cambridge University Press, 1977, p. 43-44.


\textsuperscript{116} See George Makdisi, “The Guilds of Law in Medieval Legal History” in Zeitschrift fur Geschichte der arabisch-islamischen Wissenschaften vol I. Frankfurt am Main, 1984, p. 244.
The second remarkable fact is that so many of these educational institutions were self-organising and self-governing. No state or church ordered them into being, although both kings and bishops sanctioned them and used them for training the people they needed. Instead, men and women decided that schools and universities were needed and endowed them for the wider good of their towns and the people they knew. This created an unusual degree of popular access to education. During the first seventy years after its founding in 1379, over fifty percent of the students at New College, Oxford, were from small rural holdings. Between 1570 and 1630, a similar proportion of students at Oxford University were ‘plebs’, meaning small farmers, traders, glovers and cloth workers. This was not universal education as we know it today, but it was relatively open and relatively independent, characteristics that have survived during the past eight hundred years.

But what was the contribution of these places to invention in English society? After all, educational establishments have just as frequently been instruments for conformism and control as they have been centres of learning and new ideas. What made the difference here? First, many of the early schools were not established for the benefit of the church or state. Instead they were largely local initiatives responding to local needs. Second, schooling was not imposed on anyone, but chosen as it was found to be useful and affordable. Third, the universities stimulated invention by offering new tools to question existing beliefs. Knowledge became revolutionary as the assumptions of the Mediterranean classics competed with the assumptions of Christian thought in open university debates in the 13th century.

Over the following centuries, the habit of questioning remained a critical tool of higher education, forcing students toward independent thought. In this, Aristotle’s rules of logical reasoning

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117 See Nicholas Orme and Jacques Verger’s work, cited above.
119 Jacques Verger, p. 273-4. “...the principal universities of the thirteenth century were centres of debates of exceptional scope and extremely fruitful intellectual activity, practically without precedents in the west since Antiquity.” p. 273
were, and are, a tool anyone could use to defend his own ideas or to oppose a conventional wisdom that was no longer valid. In time, these rules helped develop new conceptual frameworks for understanding the world, including Isaac Newton’s mechanical philosophy. Literacy was also augmented by the skills and traditions of oral society. While the spread of literacy allowed written records to be studied and compared, oral arguments tested any conclusions, face to face, in rapid debate. Together, society’s oral and written skills created a powerful dynamic for learning.

This educational revolution of medieval times was one of the most important creations of prosperity before 1300. The subsequent survival of schools and universities then runs like a seam of rare metal right through the mountain of 1300, establishing reading and learning as qualities anyone might attain. Popular learning was further encouraged by the rise of English as an official language after 1350 and by the arrival of the printing press in 1476. In 1500, perhaps ten percent of men and two percent of women could read and sign their names to a document. In 1600, twenty-eight percent of men and nine percent of women were literate. One hundred later, forty-one percent of men and nearly a quarter of all women could read and sign their names. By 1750 when the industrial revolution took off, over half of the male population and roughly a third of women in England were able to sign their names to a document.\textsuperscript{120} They in turn taught others to read, or read aloud to family and friends to share news, entertainment or information.

In short, the same early rise of literacy seen in the developing countries of the late 20\textsuperscript{th} century, also took place in England, but over a longer period of time. This strengthens the broad argument that strong educational foundations precede systemic change. What the English history adds, however, is the realisation that the universities of the 13\textsuperscript{th} century offered new intellectual tools for identifying and addressing new issues. Reading on its own might have been a recipe for blind obedience; reading, logic and

\textsuperscript{120} Ability to sign taken from \textit{Literacy and the Social Order} by David Cressy, Cambridge University Press, numbers read off graph on p. 177. By 1900, after national schools were created, nearly all men and women were literate in England. Nigel Whealey estimates that another third as many people could read but not write. Nigel Whealey, \textit{Writing and Society: Literacy, print and politics in Britain 1590-1660.} Routledge, London and New York, 1999, p. 22.
questioning, on the other hand, inspired and spread myriad inventions across every aspect of life.

**Newton’s Neighbourly Windmill**

While there is a solid parallel between literacy and learning in early England and in the developing countries of the 20th century, no such parallel exists where health is concerned. In the late 20th century, life expectation usually rose to more than sixty-five years before a developing country experienced rapid industrial growth. In contrast, early English society did not learn how to limit disease until long after industrialisation had begun. Instead, from 1541 to 1781 life expectation figures rose and fell in a narrow band between thirty-five and forty years. In fact, from the time of the Black Death in 1348 until 1800, there was no sustained improvement in life expectation in England. How did it happen, then, that this same period saw immense social creativity in England? What was the role of disease in social invention?

In the 16th and 17th centuries, “Good neighbourliness [was] perhaps first in the criteria by which … an individual … was measured.” It was valued highly in the same era when epidemic disease was common and both literacy and elite learning were spreading more widely through the population. Where the elite learning of the gentry and the popular practical learning of the common folk met was in the many simple, reciprocal obligations of the neighbourhood. Project by project, day by day, popular knowledge and new abstract concepts mingled and tested each other in the slow intimate societies of small towns, villages, guilds, churches and workshops.

One of the people developing the elite knowledge of his day was Isaac Newton, the English scholar who provided the world with new concepts for understanding light, gravity, motion and mechanical power. When his *Principia* was published in Latin by the Royal Society in 1686, it ‘almost at once became the reigning

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121 See the data in: E.A. Wrigley, R.S. Davies, J.E. Oopen, R.S. Schofield, *English Population History from Family Reconstitution 1580-1837*. Cambridge University Press, 1997, Table A9.1, Appendix 9, p. 614. This is quinquennial demographic data produced by generalised inverse projection. There are no comparable figures for the years before 1580, but there are repeated reports of epidemic disease.

orthodoxy among natural philosophers. Coincidentally, Newton’s mechanical philosophy arrived just when the problems of fuel in England were becoming acute. Coal may have been plentiful, but could not reach many places because it was too heavy to transport overland. Energy, therefore, was the great puzzle of the 17th and 18th centuries. It was a problem that affected every household and every activity in society, giving Newton’s new mechanical philosophy an immediate practical test.

All of this is neatly symbolised in an image I think of as “Newton’s neighbourly windmill.” Newton’s father died before Newton was born, leaving him to be raised by his maternal grandparents, an educated family who sent him to school in Grantham in the 1650s. What the people of Grantham later remembered of this odd school boy was “his strange inventions and extraordinary inclination for mechanical works,” among which was the model of a windmill being built on the outskirts of town. Because of its novelty – water mills were more common than windmills at the time – the inhabitants of Grantham would walk out to watch its construction, Newton among them. Observing closely and consulting a book that described how windmills were made, young Newton’s model was ‘as good a piece of workmanship as the original,’ according to his biographer, Richard Westfall.

It is not the image of the curious young model maker that is important here, rather it is the town’s inspection of the windmill. It was a project that several local people probably financed and would certainly have relied on all the skills and knowledge the town could command. “Newton’s neighbourly windmill” is thus the image of a society in which elite learning, popular literacy and the oral knowledge of practical traditions were working together. The intelligence of abstract ideas is here repeatedly engaged with the insights of intelligent hands. Precisely because literacy spread slowly from 1500 to 1900 the pragmatic coexistence of the practical and the intellectual, the rational and the mythological, the literate and the oral lasted a long time. It was this conjunction of different

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124 Only in 1700 would the rivers be linked, while the canal system took another one hundred years to build.

types of knowledge applied to practical neighbourhood needs, that I believe created the industrial inventiveness of England. It may even have influenced Newton’s own thinking about matter and light because it was a revolution not just of mechanical philosophy, but of common mechanical things.

Many factors created this innovative neighbourliness. In the first place, the neighbourliness of Grantham was not just a nice thing to do. It was necessary. For centuries, even before the Norman Conquest, English government had been highly devolved. It was “self-government at the king’s command.” Major local investments depended on local finance and organisation, relying on the endless compromises of competing interests and traditions to complete, face to face, one project at a time. In “Newton’s windmill” the need for energy has attracted new ideas and finance from educated men while mobilising the practical mechanical knowledge of local hands. Similar successful innovations were written up, printed by publishers and sold widely throughout the country. By 1700, two million volumes a year were being distributed. In this way, inventiveness became as natural as breathing, thrashed out with each new bridge, school or windmill a neighbourhood required.

However, neighbourliness was more than “self-government at the king’s command;” it rested on long-established customs. Between villagers that sense of mutual obligation may have begun in the need to share eight oxen and a heavy plough in order to work heavy clay soil. However, inventive neighbourliness was also the successor to the mutual obligations of lords and peasants, where deference to a superior was rewarded with paternalistic support in which conflicts of class tangled with mutual dependence and varying degrees of personal respect. Just as importantly, neighbourliness was an accidental consequence of the custom of primogeniture,

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126 Keith Wrightson’s work introduced me to the concept of neighbourliness. However, he uses the word to describe an essentially horizontal relationship of mutual obligations based on living in the same neighbourhood. This neighbourliness functioned at all levels of society, linking people within each class in horizontal obligations. He also describes relationships of paternalism and deference, the descendants of mutual obligations between lords and their local populations. These horizontal and vertical systems of mutual support, together enforced codes of acceptable behaviour, both creating and diffusing tensions in society. I have merged both sets of obligations into the single concept of neighbourliness, as it was the combination of the horizontal and vertical relationships which gave rise, in my view, to inventiveness in society. See Keith Wrightson, English Society 1580-1680. Routledge, London, Chapter 2, “Social Relations in the Local Community”, passim.

under which only the eldest son inherited a family’s wealth. While families helped their younger children establish themselves, most young people were obliged find their livings away from home by taking apprenticeships, reading law at the bar, or serving in wealthier households. Their mobility was their higher education which was eventually put to use when they settled down in one place to raise their families. All on its own, primogeniture re-mixed society with each new generation, promoting neighbourliness with each new turn.

Finally, neighbourliness may have been yet another by-product of a high rate of disease. Among the elite, titles and lands fell to new branches of a family when one line died out, increasing social mobility. More generally, by 1400, fifty years after the Black Death, two broad words of respect were in common use: gentleman – for a man with property and education – and yeoman – to describe a man with a prosperous farm. Perhaps the death of so many from the plague made fine distinctions of rank and distain impossible to maintain. The Black Death may also have unconsciously inspired the customs of late marriage and life-long celibacy which kept families small and the population low. However, the population was also kept down by recurrent epidemics. By 1750, the English population was still less than six million. Social networks were highly personal and even large cities were small by today’s standards. The social skills of this still oral society were paramount, awarding trust (or mistrust) based on a person’s reputation and character. In such a climate, a man who was trusted was more likely to be given an opportunity to try something new.

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128 This custom developed from an 11th century Norman law that ruled a knight’s property could not be divided among his children, but had to descend to his eldest son. Later, it became a common form of inheritance throughout society. The purpose of the Norman law was to ensure that every knight had enough wealth to contribute men and material to the king’s army. Apparently, the Norman kings of England were one of only a few rulers able to enforce the rule of primogeniture in Europe. Christopher Brooke, From Alfred to Henry III: 871-1272, Norton, third printing 1969, p. 101.

129 See Alan MacFarlane, The Origins of English Individualism, Basil Blackwell, Ltd, 1978, reprinted, 1989. In this book, Alan MacFarlane does not discuss neighbourliness, but looks at primogeniture and other aspects of English social and economic organisation to argue that as early as the 13th century, English society was based on contracts rather than status or family ties. Contracts around land tenure and inheritance based on primogeniture were particularly important. He also argues that late marriage and the movement of young people was already in place during the century before the Black Death.

130 “In any three decades of the 17th century, a third to a half of [gentle] Lancashire families lost their status, financially ruined or failing to produce male heirs.” Nigel Whealey, Writing and Society. Routledge, 1999, p. 26.

So, neighbourliness married necessity to become the hard-working parents of social invention. Each practical project, however, relied on the willingness (no doubt grudging at times) to work together across great social divides, employing highly developed skills of social negotiation. These skills were another foundation of invention in England, but raise a hard question: how did the traumas of the Norman Conquest in 1066 become the working respect of pre-industrial England? This question is more than idle historical speculation; it is at the heart of human affairs today where once again conquering and conquered peoples are struggling to negotiate new agreements around social, economic, and ecological dilemmas of profound importance to all. Here, once again, epidemic disease played a critical role.

_Wat Tyler’s Handshake_

If I stand in the shoes of my first travels in West Africa, and look again at the three hundred years after the Norman invasion of England in 1066, a double image appears. Just as Kuva was defeated by the Germans and the Tuareg leadership was decapitated by the French, in 1066 the Anglo-Saxons lost half their nobles at the battle of Hastings, with the remainder crushed in subsequent years. To this day, the English word for a meat that is eaten is nearly always a Norman French word, while the animal which produced it is often named in the Old English language of its conquered Anglo-Saxon keepers. “Pork” and “beef”, for example, come from the French “porc” and “beouf”, while “pig” and “ox” are descended from Old English words. As one historical geographer wrote: ‘The Normans were not village-dwellers, but village-owners.’

Their ownership was recorded in 1086 when William the Conqueror ordered all taxable land and property in England to be recorded in a book. The book became known as the Domesday Book because, according to FitzNeal in the 1170s, “…its decisions, like those of the Last Judgment, are unalterable.”

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132 Simon Schama, _A History of Britain: At the edge of the world? 3000BC-AD 1603_. BBC Worldwide, 2000, p. 68. The figure of “half” was given during the television programme of this book. The book itself states, without a percentage “…some 4000 or 5000 thegns [Anglo-Saxon nobles] had been made to vanish and authority, wealth, men and beasts had been given to foreigners. You could survive and still be English. You could even speak the language. But politically you were now a member of the underclass, the inferior race. You were a peon. You lived in England, but it was no longer your country. And that change, by any standards, was a trauma.”

Saxons to the status of subservient people. Like the Europeans in Africa and elsewhere, the Norman conquerors were lords from the outside, bringing their rules and ideas to a society that already had well-established rules and ideas of its own. In the course of resolving this trauma of conquest, the tough negotiations of social innovation were born. This suggests that today’s post-colonial societies might also transform conquest into the creativity of unexpected invention. But how might that happen?

This question brings us back to Smithfield, destination of one of my favourite walks around Clerkenwell. Now covered by a cast-iron Victorian meat market, this was once a ‘smooth field’, the largest open field close to the gates of medieval London and a regular site of markets, jousts, tournaments and fairs. Just south of the meat market is St. Bartholomew’s Hospital, founded in 1143 and still treating patients today. East of the market is Charterhouse Square, an old plague field where victims of the Black Death were buried in 1348 and ‘49.

My route to Smithfield still takes me through Sans Walk, one corner of which was still a World War II bomb site when I moved to the area in 1985. At the time, this corner was an archaeological site with traces of a medieval nunnery emerging from the rubble and overgrown buddleia before being covered again by a block of flats for elderly people. After leaving Sans Walk, my route crosses Clerkenwell Green to Jerusalem Passage, a narrow alley that once led into the precincts of St. John of Jerusalem, another Clerkenwell monastery. After the priory was closed in the 16th century, this became a public square until the new Clerkenwell Road cut it in half in the 19th century. Now St. John’s Square is no more than a nonsensical street sign on a noisy roadway. Here I wait for the traffic to clear before walking through St. John’s Gate on the other

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134 Rosamond Faith writes that the earliest use of the name “Domesday Book” comes from the Dialogue of the Exchequer by FitzNeal, written in the 1170s(?). The quotation here comes from the article by Rosamond Faith, “The ‘Great Rumour’ of 1377 and Peasant Ideology” in The English Rising of 1381 edited by R.H. Hilton and T.H. Aston. Cambridge University Press 1984. The durable sense of having lost rights in the years since the Norman Conquest may have been part of the motive for the Peasants’ Revolt of 1381, as folk memory of ancient rights was deep and respected. Rosamond Faith, in the same article, describes how a group of peasants in Hampshire used 400 years of oral history of their rights to complain in 1364 that their current landlord, the Prior and Convent of St. Swithun, was exacting services they had not previously been obliged to do when their land was held by King Edgar in 972. As impressive as the act of collective memory is the fact that their clam was upheld by Edward III who wrote to the Prior of St. Swithun’s. “The tenants … have shown us how you have demanded from them other services than those which their ancestors used to do ….” p. 56.
side. This gate, rebuilt in 1508, is all that remains of the ancient priory of St. John.

Just inside the gate, there used to be a bronze plaque telling passers-by that an earlier gate was destroyed by Wat Tyler and his peasant rebels in 1381. They had invaded London from Kent and Essex in protest at the second poll tax in four years. What the plaque did not say, was that the prior of St. John’s was also the king’s Lord High Treasurer and much hated in that role. A few days before the gate was destroyed, he and several others were dragged by the rebels from the Tower of London and hacked to death on Tower Hill. The mob then came on to Clerkenwell where they sacked the Priory of St. John and burnt down the gate in a fire lasting three days.  

The Peasants’ Revolt, as it was known, took place in 1381, a generation after the Black Death. Thirty years had passed since schools started teaching in English in 1350. The law courts had been using English for almost twenty years, since 1362, and radical clerics were about to finish translating the Bible into English, making it accessible to all in 1382. Many of the rebels who had attacked various manors before reaching London were able to read. They could identify which records, known as rolls, documented the terms of their villeinage—an unfree medieval status which allowed lords to control their labour. After the Black Death, working men was scarce and hard to control. New laws made it a crime for a man to ask for more wages and he could be branded on his forehead for seeking better wages elsewhere, but the laws were inherently unworkable. As the rebels marched through Essex and Kent towards London in 1381, those rolls detailing men’s bondage were thrown onto large bonfires, symbolically ending the servile status of working men. Their literacy had become a tool of rebellion as the men chose which documents to take out and burn.

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136 Nicholas Orme, Education in the West of England 1066-1548: Cornwall, Devon, Dorset, Gloucestershire, Somerset, Wiltshire. University of Exeter, 1976, p. 22. “It is well known that teaching was carried out in French until the middle of the fourteenth century and in English afterwards, but this probably applied only to the younger boys. Older scholars, like their undergraduate seniors, seem to have studied and conversed in Latin.” Dates for English in the courts and the translation of the Bible from Eric R. Delderfield, Kings and Queens of England, New York, 1972, p. 54.

On 15 June 1381, shortly after the mob murders on Tower Hill, Wat Tyler led his followers onto Smithfield to meet and negotiate with King Richard II, then just fourteen years old. The king was backed by a frightened retinue of citizens and lords, while the rebels gathered under the king’s banner of St. George to show their continued loyalty to the king. At their head rode Wat Tyler “mounted on a little horse so that the commons might see him.” In his hand, he held a written list of radical demands: abolish lordship, divide the Church’s wealth among the people, free all men from the bonds of villeinage; “… no lord should have lordship … excepting the king’s lordship …; there should be no serf in England … but that all should be free and of one status.”

The king agreed to everything Wat Tyler demanded, but the mayor of London was outraged by Wat Tyler’s insulting tones. He knocked Wat Tyler off his horse and stabbed him with a dagger before the King’s men rushed forward to beheaded the rebel. The crowd, angry and dismayed, charged the young king who stopped them, crying, “Sirs, will you kill your king? I am your captain. Follow me!” He then led them north into Clerkenwell where they were defeated by the king’s army and forced to surrender. Later the king revoked all of his promises to free the villeins, saying they had been obtained under duress. “Villeins you are and villeins you will remain,” he said dismissively.

So the rebellion failed. Or did it? The hated poll tax was never reinstated. The trials for rebellion largely respected the rule of law and very few of the rebels were executed. Just as importantly,

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138 The demands of the peasants were recorded in the Anonimale Chronicle and are quoted in Steven Justice, Writing and Rebellion: England in 1381, University of California, 1994, p. 147. The description of Wat Tyler on a ‘little horse’ comes from Simon Walker “Civil War and Rebellion” in An Illustrated History of Late Medieval England, Chris Given-Wilson, editor, Manchester University Press, 1996, p. 233.


140 “In the proceedings against the rebels, legal process was generally observed and punishments were lenient: a remarkably small number of rebels suffered death.” J.A. Tuck, “Nobles, Commons and the Great Revolt of 1381” in: R.H. Hilton and T.H. Aston, editors, The English Rising of 1381, Cambridge University Press, 1984, pp. 200 and 202. According to the Macmillan Encyclopedia, new edition, 1986, a villein is “an unfree peasant … holding land from the lord of the manor in return for labour. Villeins were the most numerous class in England from the
the folklore does not remember the rout of the people’s mob by king’s troops in Clerkenwell. Instead, the paintings and stories all recall Wat Tyler speaking directly with the king, face to face, publicly equal, his written list clutched like a magic talisman. Two chroniclers even describe Wat Tyler shaking the king’s hand, “hard and strongly (durement et fortement) and addressing him as ‘brother’.” Respect here has not been granted by the king, but demanded by his subjects as a right backed by violence and secured with the threat of future violence. It is the same violence that Kuva threw at the German soldiers approaching the high Buea hedge. However, unlike that battle where two mutually alien cultures clashed without speaking, this is a very intimate story. Here in Smithfield, with the plague field in one corner and the hospital in another, two men met each other face to face amid the nervous breath of a nervous crowd. Near them stood people they knew and worked with every day. There were no intermediaries and no one was neutral; just a group of people in society facing the many sides of themselves.

I went looking for the story of language, literacy and rebellion in 1381 because of the books of Ngugi wa Thion’o. When Ngugi was in school in the 1950s, Kenya was still a British colony and English was the only language the boys were allowed to use; they were punished for speaking anything else. In these conditions, an ambitious boy could only succeed at school by hiding his own family’s language and culture. Not only did this force the aspiring students to begin their careers in a slippery state of cultural schizophrenia, it forced the wisdom of their own societies into hiding, cutting the future off from a potentially creative source of experience and ideas. This education, wrote Ngugi in 1986, “…was like separating the mind from the body…” He concluded his essay with the announcement that he would no longer be writing in English, but instead in the two African languages of his birth: Gikuyu and Kiswahili. He wanted, he said, to “restore the Kenyan child to his environment … [w]ith that harmony between himself, his language and his environment as his starting point …”

11th to the late 14th centuries, when many villains acquired written titles to their holdings following the Peasants’ Revolt.” p. 1268.
I have been raised in the traditions of non-violent protest and Ngugui’s linguistic rebellion, like Wat Tyler’s list, makes complete sense to me. The violence of the peasants’ rebellion, however, needs a different defence. Frantz Fanon was a psychiatrist from Martinique who worked in Algeria during the 1950s’ war to end French colonialism. In 1961, he published a book known in English as *The Wretched of the Earth*, where he argues that colonisation began with an act of violence and can only be overturned with a comparable and equal violence. Rereading his book thirty years later, the violence he describes is grim and fatalistic, but what I had remembered of his book as I travelled through Africa was the link he made between violence and self-respect: “At the level of [an] individual, violence is a cleansing force ... it makes him fearless and restores his self-respect.”

Ngugi wa Thiong’o and Franz Fanon caused me to look for the connections between language, literacy, violence and self-respect in Wat Tyler’s story. Now, each time I walk through Smithfield I picture the rebellious horseman with his English list confidently meeting the adolescent king. The image of these two facing each other directly in the middle of a hot crowd in June is a monument to a self-respecting people who had learned to speak up and to a young king who had briefly decided to listen. The soul of this encounter lies in the handshake of the literate old rebel and the young arrogant king. Such a handshake acknowledges the danger and reluctant intimacy that attends any attempt to cross a great social divide. It represents the willingness to engage –through gritted teeth, perhaps – that later became the essence of inventive neighbourliness in industrialising England. Here, in Smithfield, everyone had something at stake and something to trade. However, it was the devastating extremities of recurrent disease that had created this new balance of power.

**Darwin’s Face**

As I write, I have in front of me a postcard from the last century. It is the yellowing portrait of an old man whose white head and shoulders are framed in a dark oval background. His eyes are

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ancient and deeply shadowed, sinking beneath the deep lines of his brow. His expression is sad, thoughtful and steady, a formal pose soaked in fatigue. It is a portrait of Charles Darwin who died in 1882. His signature is at the bottom of the card, with a wavy brown water stain running through it. It is one of those bits of ephemera that come into our lives casually and can just as easily disappear. In 1849, Darwin’s favourite daughter, Anne, was ill with scarlet fever, as were her two sisters. While her sisters recovered quickly, Anne failed to thrive so her father took her to Malvern to be treated by Dr. Gully, whose water cure had once done Darwin considerable good. Tragically, Anne, aged nine, not only did not improve, but got worse, developing intense fever and vomiting. ‘Oh my own’ wrote Darwin to his wife, ‘it is very bitter indeed’. A few days later their daughter died. On the death certificate, Dr. Gully cautiously gave the cause as ‘bilious fever with typhoid characteristics,’ unwilling to admit that typhoid might be to blame.144

The sadness of Darwin’s face, forces me to ask why, one hundred years after the take-off of the industrial revolution – that marvellous invention of an intelligent and creative society – was there so little practical understanding in England of the causes of disease? Why was it that each remedy was often little more than an educated stab in the dark? Why did Darwin’s much-loved daughter die of a disease that is relatively easy to control? Why was Darwin as bewildered as any other parent of his day? He was a man whose knowledge of biology and the natural world was so detailed and insightful that it continues to haunt our lives, yet he did not know enough to keep his daughter alive.

The puzzle is even more perplexing when we realise how many of the elements that compose our Western germ theory of disease were available in London by 1720. The first piece of the puzzle appeared in 1616 when William Harvey described the circulation of blood in a lecture at St. Bartholomew’s Hospital in Smithfield. By 1660, Dr. Thomas Sydenham was teaching his pupils to observe closely the symptoms of illness because ‘Nature, in the production of disease, is uniform and consistent.’ Each collection of symptoms, he argued, was the signature of a different disease. In the

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1670s, Antony van Leeuwenhoek, a draper in the Netherlands, built his own microscopes, using them to look inside a droplet of water. There he discovered numerous small *animacules* which he described in letters to the Royal Society in London. ‘I now saw very plainly that these were little eels, or worms, laying all huddled up together and wriggling … This was for me, among all the marvels that I have discovered in nature, the most marvellous of them all …’ During the same years, two early members of the Royal Society – John Graunt, a haberdasher, and William Petty, a natural philosopher – laid the foundations for demography and epidemiology when they began discovering patterns of disease in the London records of mortality. Finally, by 1717, Lady Mary Wortley Montague, wife of the British Consul in Constantinople, had written to a friend describing how Turkish peasant women performed inoculations against smallpox in annual parties among friends. 

All this information was collected and heard in the Royal Society where it might have been understood as a unified problem around the table one evening over dinner. Yet no record of such insight survives. Instead, there was no systemic understanding of the causes of disease until 1879 when Robert Koch in Germany published his paper on the bacterial origins of infectious disease. 

In 1850, no one could treat Anne Darwin because no one really understood why she was ill. There was no conceptual framework that helped people to understand the workings of disease in the same way that Newton’s framework had simplified the workings of the mechanical world.

So was better health one of the foundations of industrialisation in England? Or did English inventiveness exist despite the predations of disease? It seems that both conclusions are true. Higher life expectation in England did not precede economic development to the same extent seen in the late twentieth century, but it did not stagnate either; it simply rose in a more modest way. However, unlike the 20th century, better health was not the result of direct human intervention. Rather, it was the unforeseen

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consequence of unpredictable natural histories and petty human choices about what to drink, what to wear and how to use the land.

For this reason, the New River Company of 1603 was not the evidence of cleaner water and healthier citizens I thought it was. In fact, the long open aqueduct of the New River quickly became as polluted as other sources of water in town. A far better indicator of health would have been the many pubs one finds everywhere in London and the countryside. Between 1400 and 1800 the English rarely drank water, preferring instead to drink beer and later, tea. In the mid-sixteenth century, John Aylmer compared the drinking habits of continental Europeans to those of the English: “They [continental Europeans] drink commonly water: and thou [the English] good ale and beer.” In general, beer was cleaner than water; when made with hops, it had antiseptic properties that helped the population resist intestinal disease. Tea had similar antiseptic virtues. Health in the British Isles also began to improve with the arrival of cotton and especially cotton underclothes. Cotton was more easily washed than traditional woollen clothing, making it harder for disease-bearing lice and fleas to survive. Finally, as the marshes were drained and converted to agricultural use, English malaria began to die out with the last case being reported in 1911.

So, life expectation rose after 1790, but not because of medical knowledge. Instead, it was the accidental consequence of changing ecologies around human habits and the production of food. At different times in our history, this ecology has worked for us or against us, often without our knowing it was working at all. It is an ecology of small differences, seemingly insignificant variations from one place to another, one culture to another, one era to another. In the English case, these variations had surprisingly large effects, as they helped to establish a modest life expectation of 37 years in 1750 which was considerably higher than life expectation in France at the same time – a mere 27 years. All this supports the principles of

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148 The incidence of malaria in England, for example, declined with the increase of drainage. See G. Melvyn Howe, People, Environment, Disease and Death: A Medical Geography of Britain throughout the Ages. University of Wales press, 1997, p. 41-42.

the double-S curve as better health contributed to the development of English industrialisation. But this same improvement in health was an accident of ecology, not the conquest of disease celebrated today and made possible by Robert Koch’s fundamental insights of 1879.

So where was the intellectual frontier in the two hundred years between Leewenhoeck’s animacules and Robert Koch’s bacteria of the 1870s? Why were Koch’s insights so late to arrive? One answer may be that many natural philosophers of the 18th and early 19th century were struggling to understand the nature of life itself. As Roy Porter put it ‘investigators … probed the gap between the living and the inanimate.’ They wanted to explain the whole of the living world with Newton’s stunning mechanical insights. This was not a purely scientific investigation, but one that tested each individual’s Christian beliefs, turning their scholarly enquiries into deeply personal questions of faith. Just as importantly, by looking for explanations in mechanical philosophy, the scholars of the day were radically misled because disease is not a mechanical process. It is a biological one that interacts with every living and non-living thing it encounters, a dynamic complexity of multiple simultaneous events.

For hundreds, even thousands of years, men and women have used science and superstition interchangeably to comprehend the workings of disease in their everyday lives. In 550, a disease called the ‘Yellow Plague’ appeared in Wales and was described at that time as a “loathly monster.” “It appeared to men as a column of watery cloud, having one end trailing along the ground, and on the other above, proceeding in the air … Whatever living creatures it touched with its pestiferous blast, either immediately died, or sickened for death.” To describe an epidemic disease as a horrifying living thing, roaming the land and killing everything it touched, was only to recognise a vivid, devastating fact of life. This was not metaphor; epidemic disease was palpably monstrous and mysterious, dreadfully alive, but impossible to trap and control.

151 Charles Darwin, for example, was aware of how profoundly his work challenged existing beliefs, and was worried about the effect of his own thinking on his wife, whose faith in Christian beliefs was particularly strong. Janet Brown, Charles Darwin: Voyaging. Pimlico Edition, London, 1996, see p. 396-399 and 438-439.
152 G. Melvyn Howe, People, Environment, Disease and Death: A medical geography of Britain throughout the Ages. University of Wales Press, 1997, p. 82-83.
153 Peregrine Horden argues convincingly that when the saints of medieval Europe did battle with dragons they were confronting the imaginative embodiment of malaria. “The dragon makes its home in fields or standing water
In 1972, some fourteen hundred years after the ‘loathly monster’ of Wales and one hundred years after the germ theory of disease, a collection of essays by J.D. Chambers was published posthumously by his colleagues. Chambers was a demographer and was particularly puzzled by the arrival and disappearance of various diseases which affected the rate at which people died in society. ‘The disappearance of the plague,’ he wrote ‘is one of the greatest puzzles of epidemiological history.’ It was not a puzzle he was able to solve. Instead he concluded that the rate of death in society depended on “… random biological causes …” Disease and death were autonomous forces, shaped by the mutations and adaptations that help all microbes to evolve and survive. As William McNeill put it, “We will never escape the limits of the ecosystem. We are caught in the food chain whether we like it or not.” Germ theory alone cannot handle this complexity because disease is not just an enemy germ; it is an ecology of relationships often beyond our control.

**The Sugar Valley between Dry Hills**

In early 2001, I met the chairman of Shell Southern Africa. That year, Southern Africa had the worst rates of HIV prevalence in the world and he was worrying about the business consequences of AIDS. This chance conversation led to a six-month assignment during which I travelled frequently to South Africa, moving between Johannesburg, Durban, and Cape Town. For me, the hardest part of the assignment was crossing the racial, geographic and economic divides of the country. Whenever possible, I took walks on my own, stopping to talk with people I met. I also took a two-day bus ride from Durban to Cape Town, passing through the former black homelands of Kwa Zulu and Transkei, then crossing the Kei River.

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154 J.D. Chambers, *Population, Economy, and Society in Pre-Industrial England*. Oxford University Press, London, 1972, pages 103-4, 82, 86-7. “We are now brought face to face with the irrecoverable fact which historians have been loath to recognise, the fact of the autonomous death rate …”


156 Our principle academic partner on this study was HEARD, the Health Economics and AIDS Research Division at the University of Natal in Durban. This unit works throughout the world and is headed by Alan Whiteside, one of the leading economists on the impact of AIDS.
and Ciskei before driving through Grahamstown, Port Elizabeth and the European vineyards of the Cape. I stared out the window constantly, observing the geographic legacy of South Africa’s conquest and apartheid, a legacy now challenged by migrants flooding towards cities and towns. In the cities, I never bothered to drive, but instead relied on taxis, small buses, and company cars. Wherever possible, I sat up front to talk with the driver; the Shell drivers were particularly good teachers, helping me understand social dynamics I would not otherwise see.

The overlap of colonialism, apartheid and AIDS was vividly illustrated in a question I was asked repeatedly, usually in the privacy of a taxi or car: “Where does this HIV come from?” Most virologists believe HIV, the virus which causes AIDS, originated in Central African monkeys then jumped to humans in the past fifty to sixty years. What no one yet knows is how that jump took place. In the absence of an explanation, the rapid spread of HIV since 1990 led to rumours that the disease had been released by white South African security forces to reduce the black population. After Nelson Mandela came to power in 1994, the rumour died down, but the question to me suggested it was rising again.

One of the Shell drivers in Johannesburg was an older man whose grandfather had been a traditional healer, an inyanga, in the northeast of South Africa. Sam introduced me to his own healer in Alexandra Township and together we interviewed another man with a large shop of herbs and remedies. Later, on a walk in Durban, I followed signs leading upstairs to a long narrow hall divided on both sides into a dozen small consulting rooms, each one with another healer, many of them women. Many South Africans go first to a traditional healer to treat sexually transmitted diseases, including AIDS, so efforts to slow the epidemic need to include traditional healers and their concepts of health and disease.

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157 HIV stands for Human Immunodeficiency Virus. This is the virus that causes AIDS – the Acquired Immunodeficiency Syndrome. People who are infected with HIV can survive for years in good health, but as the virus multiplies it eventually overpowers an individual’s defences against disease, giving rise to a variety of infections, one or several of which eventually cause death.

158 The most dramatic – and contentious – explanation of this jump is given in The River by Edward Hooper. Alan Lane, the Penguin Press, 1999. He argues that live polio vaccines were cultivated in monkeys and transferred to sugar cubes for use in clinical trials of an oral polio vaccine in Central Africa in the 1950s. This spread HIV from monkeys to humans. The more commonly accepted argument is that the disease jumped species due to growing human encroachment of the wilds and the increased consumption of bush meat, including monkeys. In South Africa the story that elements of the security forces deliberated infected opponents with AIDS has never been proven. Nor, on its own, would it have led to the dramatic spread of disease that has been seen.
Despite that, the HIV prevention campaigns I saw were based on Western germ theory: people could stop the spread of HIV through abstinence, fidelity and condoms which kept the germs at bay. This advice, however, co-existed with different explanations of AIDS. Some said that HIV was a disease of bad blood that could be ‘cleansed’ with muti – traditional magic that would flush the virus out of the system. Others believed supernatural forces had been used by their enemy to bewitch them with HIV. In that event, traditional healers needed to identify and heal the social disharmony behind the accusation. Such explanations come from a world where disturbance in one corner of the universe has consequences in another. It is a philosophy that reflects the complex relationships of an ecosystem and carries an instinctive appreciation of interlocking change.

In South Africa, both germ theory and the more intricate explanations of disease have failed to stop HIV/AIDS. In germ theory, apartheid cannot be a cause of AIDS because apartheid is not a germ. However, the spread of HIV has been accelerated by conquest’s segregation with its distorted allocation of land, resulting rural poverty and the migrant labour that followed. This intricacy is missing in germ theory. At the same time, HIV is a lethal virus that can be avoided through abstinence, fidelity and condoms, but traditional explanations help people avoid the hard choices this advice requires. In short, the epidemic exposes the failings of both Western and African societies, requiring new honesty on all sides.

Even with such honesty, HIV/AIDS may remain outside of human control, particularly in the context of South Africa’s history and economy. There is first the rapid mutation of HIV, the virus that causes AIDS. Not only are there at least eight or ten subtypes of HIV1, there are numerous varieties within each subtype and within any individual infected with HIV. These exist because the virus is an autonomous biological life, adapting and changing all the time.

When HIV arrived in the late 1980s, it found a society where men and women left their families in the homelands to work in the

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wealthier economy of white South Africa. This separation was required under the apartheid laws, but the homelands were also where African culture adapted and survived, a centre of emotional and cultural gravity. While the European economy assumes land is a resource to be exploited and transformed, African assumptions have located the sacred in the ground; one must be buried in one’s homeland, close to the family that has provided sustenance, meaning and support. As poverty and its disciplines drove people toward the European economy, the loneliness of separation and independence met the hard rules of migrant lives, making safe sex a nearly impossible goal. In this way, the reckless autonomy of HIV was amplified by South Africa’s unequal distribution of land and the complex dialectic of African and Western lives.

As I took the bus from Durban to Cape Town, I passed AIDS funerals taking place on the hilltops of Kwa Zulu Natal, in the former homeland areas. Our route then turned north, driving along a road between two separated regions of the former Transkei homeland, now marked by new provincial boundaries. The road followed a valley of sugar plantations before turning west into the Transkei with its dry marginal lands. This rich valley sits between the poorer hills of divided Transkei, deliberately excluded from otherwise contiguous African territories. It is an image of the lingering geography of apartheid and silently argues that so long as this queer relationship to land survives, the HIV epidemic will continue to thrive.

We presented our final report to Shell’s management in December 2001. Perhaps our most startling conclusion was that an over-reliance on Western models of economic growth and disease could accelerate the spread of HIV/AIDS. A modern regional economy with intense competition would increase unemployment, migration and inequality, while an exclusively germ theory explanation for AIDS would foster rejection and misunderstanding. The only future in which HIV rates would fall was one we described as “Communities of Survival”. In this scenario, every educated person became a teacher, while every individual and organisation accepted some personal responsibility for reducing the burden of

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AIDS. In many ways, this scenario was closer to an African social ideal of ‘exchange and redistribution’ than to a Western economic ideal of ‘accumulate and transform’.\textsuperscript{162}

Our recommendations to Shell Southern Africa reflected many of the lessons of English history. We used English statistics of life expectation to argue that while illness and death may be inescapable, ignorance was not. The company needed to invest in education, so that even the orphans could continue to learn. We also recommended that the company hire a traditional healer to include the most effective African concepts in their response to HIV/AIDS. Much of our advice built on the idea that neighbourliness is a necessity in times of crisis, not just as an organisation, but as individuals, with the company encouraging employees to be engaged. Above all, we recognised that effective management of AIDS in South Africa would increase company costs and reduce profits, posing an acute dilemma for the management team. At the very least, shareholders needed to appreciate the choices Shell Southern Africa was facing. More radically, I could imagine this local African epidemic provoking a change in Western shareholder rules.\textsuperscript{163}

As I worked on this project, I was struck by the parallels with early English history. In the four hundred years since Europeans first conquered the peoples of South Africa, African societies have adapted and survived. In the past decade, the violence of the anti-apartheid struggle has established new terms of respect, forcing people to shake hands across great social divides. Today, over half of South Africa’s adult population are literate,\textsuperscript{164} and South Africa’s universities are increasingly open to all groups in society. There are now eleven official languages, nine African ones plus Afrikaans and

\textsuperscript{162} I am indebted to the book \textit{Africa Works: Disorder as Political Instrument} by Patrick Chabal and Jean-Pascal Daloz for describing Western and African economies in these two ways. “It is, therefore, entirely possible that the continent’s economic outlook will remain unconventional: an economy of exchange … (barter, even), rather than the more orthodox economy of accumulation, investment, transformation and production predicted by Western theories of economic development.” p. 147 They argue that “power is personalized and … legitimacy continues primarily to rest on practices of redistribution.” p 2. African Issues, 1999.

\textsuperscript{163} In coming to this conclusion, we assumed that anti-retroviral treatments would not be affordable or deliverable to most people. See the full report at \url{http://www.redribbon.co.za/documents_v2/shell/SSA_AIDS_report1.pdf}. \textit{The Shell HIV/AIDS Market Impact Study}, January 2002, Appendix 1: Assumptions about Medical Interventions. Our social and economic diagram also appears in this report. The report covered six countries in Southern Africa: Namibia, South Africa, Lesotho, Swaziland, Botswana and Mozambique, but our scenarios concentrated on South Africa where the bulk of Shell’s business is found.

\textsuperscript{164} \url{http://www.projectliteracy.org.za/}
English. While many of the habits of conquering and conquered peoples still linger in thoughtless manners and the geography of apartheid, the political structures of conquest have been changed.

Amid these deliberate reforms, the AIDS epidemic in South Africa is bringing competing views of the world into the open. We are reminded of nature’s power as viral mutation and the intricate ecology of infection make this epidemic too complex to completely control. Another South African rumour reported that some infected people were deliberately infecting others, saying “I will not die alone.” In the face of such despair, a calm willingness to accept and care for people with HIV will slow the spread of disease more effectively than waiting for a vaccine to appear. The Ugandan epidemic diminished in part because of such generosity: “You will not die alone, because we will be there.” Technology may have been the greatest legacy of the industrial revolution, but AIDS reveals the limits of our knowledge and the failures of our economic rules. It reminds us of the latent power of ordinary compassion in the face of natural disaster.

As we presented our final report and recommendations, I wanted to believe that a creative response from all sides in South Africa could transform the traumas of conquest and AIDS, stimulating cooperative inventions elsewhere. I hoped that in learning to manage the disease, some of the deeper instincts of African philosophies would be proudly shared. For years, this faith in connections has been hidden in secret societies and initiation ceremonies. Now I imagined an African view of our intricate world challenging the destructive convictions of divided lands, resource exploitation and economic control. I could see Africans shaping the invention of ecological societies by defining man as the unifying element in complex ecosystems and then creating wealth by respecting that role. If all that came to pass, then the extremity of HIV and AIDS would have caused not just the death of many, but stimulated the recovery of our world as a whole.

**Entering the Hall**

My father will be 83 this year, my mother 80. In the past five to ten years they have both survived illnesses that might have killed
them in another era. There is no single technology that is responsible for their survival, just an accretion of shared knowledge on the many mysterious frontiers of life and disease. Unusually, they still live in the house they bought when I was twelve years old. It is a large square house with a wide summer porch on the north side. Like any place one family has shared for a long time, the house and garden have developed a character of their own, a personality that breathes along with the history of the family. It is a body filled with old projects, small jokes and silly irritations, a place of round tables where friends and relations, visitors and neighbours have gathered for years. We circle the kitchen table when it is cold, but shift to the porch when the weather is too hot to stay inside. Summer begins when the porch table comes up from the basement and ends when it rolls back downstairs.

When I arrived in London in 1981, I imagined I might marry and settle down with a new family of my own. In fact, I have only half-settled and never married. Instead, all the intimacy of long and tangled family affections remains in New York where my parents and siblings still live. I go home as often as I can; an independent life is a stranger’s life, forever partially outside, so my American family has been the anchor of these travelling years. Yet, when my parents depart, our connection with this place will end. We will leave behind an empty house painted in colours that others will change and hung with wallpaper someone else will tear down. Once we sell the house, the new owners may even destroy our old place to make way for their own grand ideas. So far, that day has not yet come, but each time I step through the side door, I wonder how much longer I will be able return to this hall, this house and this garden. Each day is touched by a sense of pending loss and fugitive calm. Month by month, my two brothers, sister and I spend more time at home, helping my parents as they age and learning that a good death is one to be prized.

When the house finally breaks up, each of us will carry some piece of it away – a piano or chair, a few books, a game, a picture or an old-fashioned bed. These remnants will connect with some event or affection that lives on in that particular thing, fragments of the house carried forward into a new time. What will survive, I wonder, the triage that follows the end of my parents’ generation? What will

Chapter Six: Darwin’s Face
become of the heavy oak dining table that stretches to seat eighteen of us, elbows tucked into our sides, as we tackle the feasts of Christmas and Thanksgiving? Who will next play my grandmother’s piano? Who will hang my brother’s pastels on what wall when my parents’ house is empty? Forty years in one house, the forty years of my adult memory. What will we keep and what will we remember? What will travel to new places and what will vanish when my parents’ generation is gone? When we close the house, my anchor of twenty years will shatter in one inescapable transition of human affairs.

In just the same way, our societies are recurrently shattered by normal shocks. AIDS is one of those extremities, as are floods, fires, droughts, wars and invasions. All societies and ecosystems have been altered by such events. Day to day, however, most of us don’t think of extremes. Instead, we manage our lives according to averages, guided by the norms and habits of everyday affairs. Only now are we beginning to understand that all of us can be profoundly shaped by cataclysms – those wild cards of intricacy and the unexpected that occur when some invisible threshold has been inadvertently crossed.

When I began writing this chapter, I wanted to unpick the interplay between the shock of the Black Death and the roots of invention thrown down in the centuries before that disaster arrived. I wanted to comprehend how crisis and learning fed on each other and how both contributed to the originality that gave us today’s industrial societies. Because of that work, I now see the world’s rising literacy as one of the roots of self-respect, new dialogues and new learning. I see the scientists of ecology creating a new conceptual framework that links ancient and modern knowledge. I notice that scholars and activists are recognising local languages and oral traditions as important sources of biological understanding. I see once conquered and conquering peoples being forced by violence to speak with each other and being forced by disease to accept uncomfortable ideas. I don’t know if any of these will become the foundations for ecological societies, but am willing to believe they may.
Less articulately, my attention has been shaped by the unbearable similarities between two round magical years: 1300 and 2000. In the same way that I enter my parents’ hallway with simple cheating pleasure, I see my own societies entering each new day with a silent prayer that any crises building up now will hold off for another month, another year, another decade or two. As I watch, I wait for the inevitable extremities of change. I notice the accelerating pressures of our failing technological age, and study the AIDS epidemic from the perspective of the 14th century. I keep trying to imagine the process of coping and recovery, of working with each other and carrying on. I want to understand how people survive and learn because I believe our own inventiveness will soon be tested again by shocks we can neither wholly anticipate or ever control.
Chapter Seven

Nature’s Voice

Since the late 1990s, London has been the pivot of an unexpected life on three continents. Thirty years ago, when I stood at the back of my grandparents’ woods and wept over an ugly little house by my brothers’ pond, I did not know I would find myself here. Nor did I know that one day I would wander across the Sahel after a great drought, touching on the damages of slavery and conquest through the queer complicities of the development game. During that first African journey I glimpsed the remnants of a rural life where living ecologically was an immediate necessity as herding peoples followed the rains and grasses of the nomadic zone. Greater understanding of both conquest and ecological living then followed my PhD work in Cameroon and more recent assignments in South Africa, Kenya, Tanzania and Uganda.

That first Sahelian journey also led me to England to study, work and write. Here, beneath the façade of today’s modernity, in the old neighbourhoods of central London, I found a history of social invention. In this history, conquest yielded to engagement after epidemic disease gave common people the opportunity to demand and receive new respect. This respect was vital to the successful experiments of good neighbours who built on strong foundations of literacy and learning to address the need to find new energy and fuels. Out of this combination of extremity and respect, necessity and learning, grew a dynamic capacity for social invention. This created the accident of the English industrial revolution which has become a global ambition in the past fifty years. As nation after nation has industrialised, the path of the double-S curve has been reaffirmed each time stronger foundations of literacy and health have preceded rapid industrial growth in a sequence of events first seen in England long ago.

None of this was visible, or even imaginable, as I stood in that dusty Connecticut road and looked at the damage of our childhood woods. Yet I am still perplexed and still grieved by each careless replacement of ecological intricacy with hard tarmac and square, infertile constructions. Since that day in Roxbury, Connecticut I
have watched many landscapes become unlovely and unloved, mere builders’ yards of hasty goods thrown together by the same raw logic of economic growth that drives the HIV epidemic in southern Africa today. With each thoughtless project, I wonder why – especially in nations that are already wealthy – larger homes and more things are chosen over the biological abundance of a woodlands, wetlands or well-managed farm. It is a choice we make without thinking, guided by rules so deeply engrained that they have the status of natural laws. But how did these rules become so embedded? When did our ideas of order become committed to the economies of consumption that drive our world today? What might be the politics of changing things now?

**The Memories of Stones**

In 1998 I moved my office from home into a pair of 17th century rooms in Gray’s Inn Square. The ceiling is high, the windows are long and full of light, the floorboards are as wide as an old pine forest. I reach my rooms by climbing three flights of stairs. The newel posts and railings are freshly painted, but have been chipped and scarred by different tenants over time. On each landing, I pass the doors of neighbours, barristers who argue in court. Like me, each barrister is self-employed, but each of them belongs to a set of chambers where office expenses are shared.

This old brick building is part of a complex owned by the Society of Gray’s Inn, one of the four Inns of Court which began in the 12th century. Each Inn has a garden, a dining hall, a chapel and a library because each Inn is a College of Law. Every person who wants to be a barrister must first join an Inn. On completing his training, it is the Inn which calls him or her to the Bar. All four of the Inns of Courts are a short walk from one another, close to the courts and midway between the financial world of the City and the political world of Westminster. Although I am not a barrister, I often take coffee with the members of chambers next door. Over coffee, I listen to the chat of a small society of people learned in the arcane knowledge needed by lawyers today. I hear the casual assumptions made among competing individuals working in the shared cooperative structures of the Inns, the Courts and the Bar. I listen as a person’s reputation is formed by the heat of courtroom
performance, daily manners or the quality of professional judgement. As I listen, I become a passive witness to the working survival of custom and oral tradition in a literate and scientific age.

Custom has always been part of English law. “What usage has approved become law without writing,” wrote Justice Henry de Bracton in the 13th century, about the same time that Henry III, brought local customs together in a single body known as the king’s Common Law. This respect for local custom and law was a critical spur to the inventive neighbourliness of pre-industrial England, where new practical ideas grew out of the needs of each place and time. Often these ideas were – and still are – ratified through petitions and private bills presented to Parliament for approval. So, for example, the person who invented a technology for coking coal would apply to government for a monopoly patent on the business involved. When a group of gentlemen wanted to drain the Cambridgeshire fens they applied to Parliament for a local bill giving them permission to do so. In each instance, the experimenters would have called on lawyers, available for hire at the Inns of Court, to act as advocates for their applications. In this way, localities, companies and other organisations did not have to wait for the central government to arrive in their midst to solve their problems. Instead, they could work at their own solutions and have them ratified by Parliament through private bills with the force of law. Today, as I walk up to my rooms each morning, the memory of learning and invention ratified by law lingers in each tread of the stair.

Westminster Hall is another great medieval survivor. It stands at the entrance to the 19th century Houses of Parliament. It is a great covered piazza, with pale stone walls over two metres thick. As long and wide as a short city street, it is functionally neutral today, an empty stone space of echoing footfalls. In medieval times, the opening cry to announce a new Parliament was made here; this is where Parliament began. It was the continuation of the council used by Anglo-Saxon kings and known as the “Witan” – plural for ‘one who is wise’. After the Conquest, however, Norman barons and bishops “stepped into the shoes” of the Anglo-Saxons’ Witan to

continue its advisory role. For the next several hundred years, these barons, bishops and abbots were the Parliament of England, advising the King and administering his justice. While the clerics decided issues of equity and conscience, the barons judged disputes about land, money, covenants and crime. Their courts were set up in the great piazza of Westminster Hall, symbolically placing the King and his judges in a single venue.

Each time Parliament met, all the principal interests of the kingdom assembled. In the mid-14th century, a typical Parliament included just under 300 men: 52 clerics, over 80 peers, 74 knights representing rural communities and about 150 burgesses representing the trades and communities of the town. Perhaps 20 judges would have also been there. Everyone here drifted in and out of Westminster Hall as meetings assembled in nearby rooms. This was not politics based on a separation of powers, but the gathering of all interests and communities involved in the kingdom’s affairs. Today, the stones of Westminster Hall still contain a great open space, a place where all interests might gather when hard issues need to be resolved.

If justice was one of the great activities of the king, war was another, but war was an expensive affair. Normally, kings were expected to live on the income of their own lands, but by 1198, the knights of shires were dunning their neighbours to help pay for the king’s wars. In 1254, a small number of knights from each shire were summoned to Parliament to advise the king on what money could be raised. By 1275, in recognition of the rising prosperity of the towns, four to six leading citizens, or burgesses, were also asked to attend. Together, these knights and burgesses came to be called the “Commons” in Parliament. Wealthy, influential and independent, these men were often deeply involved in the

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169 Because the Norman kings of England came from France, the 400 years 1066-1492 were a period when French & English territories were linked through the English king. Because of his territories in France, he was a vassal to the French king in France, but autonomous in England. As a result, the English kings repeatedly raised taxes in England in order to pay for the wars that allowed them to keep or extend their territories in France. In times of peace, the king was expected to live off the revenues from his lands, feudal dues and the profits of justice, i.e. fees paid into the courts. See David L. Smith, The Stuart Parliaments, 1603-1689. Arnold, Hodder Headline Group, London, etc. 1999, p. 56.
administration of local affairs. They were the translators of the
king’s command in local areas and of local needs to the king, the
linchpins of order in society, authorised by their neighbours to grant
money to the king. This power of the purse was their principal
strength, but it took a particular courage to know how to use it and
when. In 1375, they found that courage in the Chapter House, a
third medieval remnant of echoing stones.

By 1375, King Edward III had been on the throne for forty-
eight years, but had become old, lame and inattentive. Twenty-five
years had passed since the Black Death, but landlords were still
struggling with the unpredictable weather of climate change and the
rising wages of labourers. Despite these domestic troubles, the
Hundred Years War continued in France and the king summoned
Parliament to ask for money. After stating the reasons for calling
Parliament, the king’s ministers ordered the Commons to discuss
matters first among themselves and then with the Lords to decide
how to meet king’s needs.

The squires and burgesses of the Commons went across the
road to the Chapter House in Westminster Abbey for their debate.
According to a contemporary chronicle, all the knights “sat down in
a circle, each one next to the other” and agreed that their
proceedings would be secret, so that they could speak freely with
one another. One spoke of the king’s “disturbing” request for
money. “It seems to me, that this is too great to grant …[besides]
… all that we have granted for war for a long time … has been badly
wasted and falsely spent.” They deliberated for ten days before Sir
Peter de la Mare summarised their points, which all agreed should be
reported to the king. The Commons then walked back to the
parliament house where Sir Peter de la Mare told the king’s
representative, the Duke of Lancaster, that “what one of us says, all
say and assent to,” and requested that all the Commons be present.
Thus united, the Commons asked to meet with a committee of
twelve Lords, saying that they were “so simple of wit and wealth”
that they needed the counsel of wiser men. They also needed
political allies, having decided to reject the king’s new taxes unless a
handful of corrupt ministers were removed.

27-28. Between 1558-1603, 67% of the Commons also served as local Justices of the Peace. One hundred years
later, 1660-1689, 85% were JPs.
When the Commons met with the Lords, they noted the cost of previous payments to the King and said they were beset by the “pestilence of servants” (i.e. high wages), the death of their animals, and the failure of their harvests. They pointed out that if the king’s officers had been more prudent, this request for money would not have been necessary and added detailed charges of corruption. The Duke of Lancaster was not pleased. Who did these “degenerate knights” think they were? “They are not common people as you have said,” the duke was told, “but men powerful and strenuous in arms.” After several weeks of exceptional negotiation, the Commons won. Several of the King’s ministers were impeached, tried by a group of Lords, and finally removed from office. A new King’s council was formed and a new procedure, impeachment, came into political affairs.

One dark autumn afternoon, I sat in the Chapter House and remembered this story. The Chapter House is a simple octagonal room, with tall bright windows and three tiers of narrow stone seats circling the wall beneath them. There is a single entrance that is easily controlled, allowing confidential conversations to remain uninterrupted. It is a room in which unity of purpose seems part of the fabric of the walls. It is also physically separated from the political heat of Westminster Palace, a room borrowed from the monks of Westminster Abbey. Here, in this graceful octagonal room, the Commons came to their agreement. At the time, they had no formal role in Parliament but were influential outsiders the King and his government had to woo. As men “powerful and strenuous in arms” they understood the powers they had and were willing to act as one.171

The story of the Chapter House illustrates an essential principle in the politics of invention: directness and necessity. There were no lobbyists covertly representing absent interests. Instead, people met face to face to discuss the issues that directly concerned them. Everyone in Parliament had something at stake and something to trade. They were obliged to negotiate with each other and were willing to keep talking rather than resort to violent argument or

171 This story is taken from Ronald Butt, A History of Parliament, the Middle Ages. Constable, London, 1989, p. 349. It first appeared in Anonimalle Chronicle, written in York, shortly after the events described here. It is one of the few early records of a parliamentary session.
arms. These were not simply “degenerate knights”, but men who expected respect from both the Lords and the king and were in turn prepared to respect them. This story also reminds us that no one rules alone. When the Magna Carta was signed between the king and his barons in 1215, the king was put on notice that he could not rule on his own. In 1375, the Commons reminded the king and his council that they could not rule alone, either; they needed the help of the gentry who governed affairs in the shires and towns. Six years later, Wat Tyler and his rebels reminded the gentry, the Lords and the King that it was the peasants’ labour that produced the wealth they all enjoyed. No one can rule alone.

The problem of the king’s money, however, did not go away. In the 1640s it was at the core of arguments that led to violent civil war and the execution of King Charles I in 1649. Even then, it took another forty years before the issue of government finance was resolved. In 1688/89, Parliament granted the king a permanent income and established a Commission of Public Accounts to oversee his spending. With this regular income as security, government borrowing grew, creating new financial skills and institutions and a powerful ability to finance war. This became the foundation of today’s nation state, forceful guardian of our industrial economies, but a state whose role may now need to change.172

The stairs in Gray’s Inn, the wide emptiness of Westminster Hall and the tall windows of the Chapter House hold memories of political wrangling and consent, reminding us of simple political principles. The stones and bricks carry a silent, but implicit promise of order as well as the promise of change. So what contribution might the principles of these ancient stones make now? What new political order might be found in a new evolution of custom and law?

Footpaths and Fears

Jane Ellsworth Grush. In the graphics of this genealogy Josias Ellsworth is the great patriarch – founder of an impressive lineage. In fact, he was just seventeen when he arrived in Windsor, Connecticut a decade after the town began. As he travelled from the coast to Windsor, Josias Ellsworth would have heard the stories of local Indian wars and rumours of Indian peoples devastated by disease. On his way through the woods, he would have seen no roads or castles, no reassuring churches or any fences, hedges or stone walls. His trail would have crossed a landscape covered with fat game and thin footpaths linking Indian villages and fields, many of them abandoned and overgrown. The rough dwellings, violent epidemics and random wars must have been chaotic and unnerving to a young man raised in the civilisation of old stones, particularly to one escaping his own wars.

As I picture this journey, I imagine Josias Ellsworth joining some five hundred colonialists in Windsor, Connecticut with all the ambitions of a man longing for wealth, order and control. In 1654, he married Elizabeth Holcomb. In 1657, he and sixty-four other men were made ‘freemen’ of the Connecticut Commonwealth, a privileged, voting status given to only 229 men by 1662. When he died in 1689, he had nine children and an estate worth £655, including property on both banks of the Connecticut River. New England had been good to him, both financially and biologically.

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174 The record of becoming a freeman appears in *The Public Records of the Colony of Connecticut, from April 1636 to October 1776*, ..., transcribed and published in Hartford: Brown & Parsons. 1850-1890. 15 volumes. All pages have been digitalised and are accessible on the web at [http://www.colonialct.uconn.edu](http://www.colonialct.uconn.edu). See also Jones, Mary Jeanne Anderson, *Congregational Commonwealth: Connecticut, 1636-1662*. Wesleyan University Press, 1968, p. 82. The author quotes Albert E. McKinley who “conservatively counted only 229 freemen in Connecticut between 1639 and 1662, out of what he estimated was a total population of over three thousand. Less than one-third of the admitted inhabitants of the towns [i.e. people entitled to vote in Township affairs] achieved freemanship.” To qualify, a freeman needed to own £30 in real estate, to be recommended by the deputies of his town, and to receive a vote of approval from the General Court of Election. Two years later, the property regulations further restricted the number of freemen in the Commonwealth. Women, children, indentured servants and the ‘few Indian slaves’ were not eligible to become freemen at all. (Jones, 1986, p. 81)

175 Stiles, Henry R. *The history of ancient Windsor*. Facsimile of 1892 edition, Somersworth, New Hampshire Publishing Company, 1976. Vol 1, pages 88, 101, 106, 148 155, and 229. For an estimate of the English population see page 106, for a map of Windsor, see p. 148. The value of J. Ellsworth’s estate appears in Vol. 2, p.210. In 1675, the tax assessors created 5 classes of taxpayers. The first, or wealthiest class, were all those men who had a family, a horse and four oxen. The second class had a family, a horse and two oxen, the third, only a family and horse; the fourth only a family and the fifth class were bachelors, most of whom had a horse. According to this assessment, Josias Ellsworth was one of the twenty-nine wealthiest men in Windsor, of the 147 taxpayers. His prosperity does not seem to have inspired any excessive generosity, however. During an appeal the following year for donations to poorer settlers who had suffered during the 1775/76 Indian war, he subscribed an unexceptional 3 shillings, far below the largest gifts of a £1.
But what does Josias Ellsworth have to do with political invention and the place of nature? Quite simply, he was one of the first English people to settle among the Indians of the Connecticut River; as an elector and leading citizen he shaped the encounter between English and Indian civilisations. Undermined by disease among the Indians, this encounter was a sad political failure throughout his lifetime. Outside the perilous alliances of war, there was little engagement of English and Native American peoples. Instead of learning, separation and harassment were common. Josias Ellsworth attended this rapid annihilation of one people by another and profited from their tragedy along the way. Today, the over-abundant success of my English ancestors with their absent-minded elimination of Indian rights, knowledge and rules has become one of the key turning points in our recent environmental history.

It is a turning point because New England was not an uninhabited land in 1646. Nor was it a recovered landscape whose populations had perished long ago. Coastal Indians had died in the previous century when European traders brought disease, but seventy to one hundred thousand Native Americans were still living in New England in 1600. Only as more European settlers and diseases arrived did Indian numbers fall dramatically, with terrible epidemics spreading through New England in 1616-17 and again in 1633-34. When Josias Ellsworth arrived, these deaths were still recent, leaving behind a land of spectacular biological abundance created by Native Americans over the previous 10,000 years. 176

William Cronon’s book, Changes in the Land, describes how the long interaction of peoples and wildlife created a patchwork of different ecosystems. In addition to forests and fields, New England had ‘quaking bogs’ covered with spongy sphagnum moss, salt marshes and rich oyster banks. Cronon quotes James Rosier’s 1605 account of walking up a river in Maine where he found areas of great oak trees growing in widely scattered open fields, as well as low thickets of dense shrubs and saplings. Another place ‘did all

resemble a stately parke, wherein appeare some old trees with high
withered tops, and other flourishing with living green boughs.’ In
the lowland valleys of large rivers were great groves of mature white
pine including giant trees over two hundred feet high with trunks
five to eight feet across, highly suitable, thought Rosier, as ‘masts
for ships of 400 tun.’

The words that Cronon uses over and over again to describe
this landscape are ‘mosaic’ and ‘patchwork’, the result of slow
evolution over millennia. Such landscapes are formed by countless
localised experiences of crisis and recovery. A patch of land is
cleared by some event – a fire set by lightening or man, an
exceptional flood, an attack of disease, or a period of cultivation that
is then abandoned. This patch then recovers through a new process
of species colonisation, growth and maturation. As this sequence
took place over 10,000 years in New England, starting at different
times and places with different initial conditions and evolutionary
speeds, it created a masterwork of evolution and diverse biological
abundance.

The New England Indians were intimately part of this
evolutionary process using a variety of simple principles and tools,
the most important of which was fire, usually lit in autumn and
spring. When set under trees, the fires cleared the undergrowth and
created the great parks Rosier admired. Fires also reduced
mosquitoes and other pests while recycling nutrients and
encouraging the growth of blackberries, blueberries and sweet
grasses. New England names like Springfield, Deerfield, Enfield all
once described fields that began as abandoned Indian gardens and
were turned to meadows by regular, deliberate fires. Such fields
attracted wild game, the effective equivalent of the settlers’ domestic
herds. After seeing the English animals, Indians began speaking of
deer as their ‘sheep’. An Oneida chief, speaking in the 18th century.

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said, “The Cattle you raise are your own; but those which are wild are still ours.” “Indians who hunted game animals,” writes Cronon, “were not just taking the ‘unplanted bounties of nature’; in an important sense, they were harvesting a foodstuff which they had consciously been instrumental in creating.”

Indian peoples were flexible, moving their living quarters each season and their fields every few years when soil fertility gave out. While the Indians of northern New England were wholly nomadic, the southern agriculturalists in Connecticut added planting to this system. They created mixed fields where beans used maize stalks for climbing while squash, pumpkins and tobacco covered the ground between the hills of corn. This hand-tilled style looked messy to English eyes, but had numerous virtues: the beans fixed nitrogen in the soil and benefited the maize, while the full ground cover kept weeds at bay and preserved moisture in the soil. In total, each acre gave a higher yield for a longer period than the monocrops of the Europeans.

As they moved between areas of summer crops and winter hunting, the Indians consumed what was abundant when it was abundant. During the spawning run in spring, they lived off the spawning fish. Migrating birds were consumed in spring and autumn. Larger mammals: moose, deer, bear, were eaten during the autumn and winter, adding protein to the stores of corn and beans. By eating those things only when they were abundant, each species had a chance to recover. There was also an acceptance that winter brought occasional hunger, especially to hunters away from camp. At such times, according to Samuel Lee, the Indians were “… very patient in fasting, & will gird their bellies till they meet with food…”

What Josias Ellsworth and other settlers saw when they arrived was a ‘primitive’ people. What they did not see, because it was invisible, were the sophisticated conceptual tools and intricate ecological knowledge that maintained this abundant system. This

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was oral knowledge, locked up in languages that most Europeans never learned. It was an intimate knowledge in four dimensions, nurtured in everyday interaction with the living environment over long periods of time. It was knowledge that was demonstrated and shared in the context of physical tasks, a field knowledge that dies once it is brought indoors.  

*Mosaic Rights & Column Rights*

The abundance of New England was created by more than knowledge, however; it was supported by a system of rights very different from those the colonists created. In a chapter titled “Bounding the Land” William Cronon makes a distinction between individual ownership and group sovereignty. He quotes – as many others do – the colonist Roger Williams’ statement that “the Natives are very exact and punctual in the bounds of their Lands, belonging to this or that Prince or People.” Cronon believes this exactitude “… defined a village’s political and ecological territory.” Within this territory, a variety of other rights applied. The rights to agricultural land worked by women, for example, only extended to the right to plant and harvest until such time as the field was abandoned; all other rights – to collect wood or hunt, for example – might belong to other people who would exercise them at different times. Around a particularly plentiful fishing site – such as a major inland waterfall during the spawning season – several villages might gather to collect fish, even though the waterfall was normally part of one village’s territory. Hunting rights were similarly broken up. Animals and birds that were very abundant were owned by whoever killed them, but when they were hunted by collective drives, all those involved in the hunt had an equal right in the bounty. Quite separately, the man who set winter traps owned the animals captured in them.

In looking at similar systems of rights in Africa, I have come to call this kind of property system “mosaic rights,” because different people can have different rights at different times on the same hectare of ground, creating a mosaic of rights in that land.

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Modern Anglo-American rights, however, are rarely mosaic rights. Instead, they are “column rights.” He who owns a hectare of ground owns the minerals beneath, everything that grows or is built on top of it, and the very air over the hectare itself. His ownership applies to every day of every year for as long as he holds the title. Column-rights societies rely on fences, hedges and clearly marked boundaries. Mosaic-rights societies have few fences; instead, footpaths criss-cross the territory linking people to different sites as and when they are needed.\(^{185}\)

Mosaic rights were also part of society in pre-industrial England. Even when the land was owned by one person or estate, mosaic rights could still apply, as we saw in the story of London’s Lincoln’s Inn Fields. Under the ancient forest laws, some people had the right to gather fallen wood for home fires, the King had the right to kill large game, villagers’ swine were allowed to forage for fallen acorns. Village commons had similar intricate rules. However, in a slow process, taking several centuries, individual owners in England fenced their land so that column rights increased and mosaic rights fell away. By the early 17\(^{th}\) century, more and more common land was enclosed, forcing many people to migrate to cities, towns and the colonies of North America.\(^{186}\)

When the first English settlers arrived in New England, the Indians were still living with an elaborate system of mosaic rights in a territory criss-crossed by footpaths. Several of the early land agreements that survive show an early English willingness to recognise these rights. Cronon quotes from a deed agreed on July 15, 1636 between William Pynchon, a fur trader, and the Agawam village on the Connecticut River. While the Agawam villagers gave Pynchon permission “for ever to trucke and sel al that ground” they also reserved a number of rights for themselves. Under this agreement, the Agawam villagers “… have and enjoy all that

\(^{185}\) Where fences do exist, they are usually used to keep animals from straying or to protect them from predators.

\(^{186}\) See David Cressy, Coming Over: migration and communication between England and New England in the seventeenth century. Cambridge University Press, Cambridge, 1987 and N.C.P. Tyack, Migration from East Anglia to New England before 1660. Unpublished PhD thesis, University of London, 1951. This migration was further encouraged by the fact that much of the monastic lands seized by Henry VIII in the 1550s had largely been sold off by 1600. Many of the rising gentry owed their improved status to the purchase of these lands, but by the time Josias Ellsworth was coming of age in the 1630s and 1640s, these lands were no longer on the market, forcing ambitious people to look for opportunities elsewhere. See Overton, Mark, Agricultural Revolution in England: The transformation of the agrarian economy 1500-1850. Cambridge University Press, Cambridge, 1996, p. 168-205.
cottinackeesh [planted ground], or ground that is now planted; And have liberty to take Fish and Deer, ground nuts, walnuts akornes and saschiminesh or a kind of pease.”

However, just as the common rights of English villages had vied with individual ambition in England, so too did the shared mosaic rights of the Indians stand in the way of ambitious English settlers and the territorial ambitions of the English crown. In 1629 John Winthrop, founder of the Massachusetts Bay Colony, expressed the primacy of fences over footpaths he would enforce as governor. “As for the Natives in New England, they enclose noe Land, neither have any settled habytation, nor any tame Cattle to improve the Land by, and soe have noe other but a Naturall Right to those Countries, soe as if we leave them sufficient for their use, we may lawfully take the rest, there being more than enough for them and us.”

At the end of his book, The History of Ancient Windsor, published in 1892, Henry Stiles reproduced the substance of twelve land agreements between the Indians and the English. He concluded, with added emphasis: “…that the whole of Ancient Windsor was honestly bought, and even rebought by our ancestors, of the native proprietors.” In fact, the agreements Henry Stiles published are of the “repurchase” of the land between 1660-1690 and all describe column rights without any reservations. The original agreements of the 1630s and 1640s are not published;

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188 The Royal Charter of the Massachusetts Bay colony, issued in 1629, is a model statement of column rights: To have and to houlde, possesse, and enjoy all and singuler the aforesaid continent, landes, territories, islands, hereditaments, and precints, seas, waters, fishings, with all and all ammner their commodities, royalties, liberties, prehemynces, and profits that should from thenceforth arise from thence, with all and singular their appurtenances, and every parte and parcel thereof, unto the saide Councell and their successors and assigns for ever. Quoted in William Cronon, Changes in the Land: Indians, Colonists and the Ecology of New England. Hill and Wang, New York, 1983, p. 71.


perhaps they were lost along with any mosaic rights the Indians may have reserved.  

But why did the mosaic rights of the Indians not survive? Why were Indians peoples not strong enough to defend their own rights as they defined them? Epidemic disease was perhaps the most important factor, flaring up each time Europeans met Native Americans for the very first time, with particularly fierce epidemics in 1616-17 and 1633-34. By 1674 Daniel Gookin estimated that the Indians of New England had declined from 72,000 people in 1600 to 8,600 by 1674, a loss of nearly ninety percent in seventy-five years. In Francis Jennings words, New England had become a “Widowed Land.”

In addition to disease, Francis Jennings lists four predatory features of English policy: 1) the incitement of Indian tribes against each other; 2) a disregard for agreements, treaties and pledges made with Indians; 3) the use of tactics of total extermination against some tribes in order to terrorise others and 4) a propaganda of falsification to justify their own actions. He also writes that the English forces believed that the Indians were “outside the law of [English] moral obligation.” When, for example, the trader, Mr Pynchon, was “questioned aboute imprisoning an Indian at Aggawam, whipping an Indian and freeing of him” the General Court of March 1637 was “willing to passe over failings against an Indian.”

The minutes of the General Court, which managed the Connecticut colony’s affairs, appear in the Colonial Connecticut Records. These minutes show the progressive loss of mosaic rights in Josias Ellsworth’s lifetime. In 1637, for example, Aramamett

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191 John Winthrop, Sr, the first Governor of the Massachusetts Bay Colony, wrote the History of New England, one of the prime sources for all historians. However, according to Francis Jennings, “The documents interpreted by Winthrop have had a high mortality rate. Especially as regards Indian affairs, his interpretations have had to be accepted in lieu of the prime sources because of the latter’s disappearance.” Francis Jennings, The Invasion of America: Indians, Colonialism and the Cant of Conquest. University of North Carolina Press, Chapel Hill, 1975, p. 182.  
194 http://www.colonialct.uconn.edu/NewCTScanImages/0015THEP/V0001/I0001/002900_downloaded 30/08/2002. This quotation and the others are from Volume 1, pages 17-20.
complained that a colonist had refused to let Indian people plant where they had planted the previous year. The Court ordered that the Indians “should plante the old ground they planted the last yeer for this yeere onely...,” assuming that English column rights would then permanently apply. The following year the Court required any Indians settling near an English plantation “to paye to the saide English” any damages caused to English animals by Indian “trappes, dogges or arrows.” In a mosaic system, the English would have penned in their stock at hunting times. In March 1645, Indians living among the English in towns, were allowed to stay if they were “willing to submit to the ordering and government of the Enlishe … .” Two years later, in May 1647, English settlers were forbidden to let land to Indians because “… diuers inconueniences fall out...” In 1657, the “pious Mr Eliot” gave a sermon to a group of Indians from the east bank of the Connecticut River, inviting them to “accept Jesus as a Saviour.” However, Henry Stiles wrote in 1892 that “… the intractable warrior chieftain, turning from him with great scorn, utterly refused, saying that the English had taken away their lands, and were now attempting to make them servants.”

The chieftain’s fear was well-founded. In 1675, King Philip’s War broke out and the Indians were comprehensively defeated. The October 1676 session of the General Court granted some land and hunting rights to Indians who had supported the English, including many of the Mattabesic Indians around Windsor. However, defeated Indians who surrendered were to be “used in service with the English” for ten years, sold by the leaders of Connecticut’s counties and towns “… unto such as they thinke most meete to eudicate and well nurture them, at such price as they judg equall...” In 1680, the town of Stratford marked out one hundred

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195 These quotations are taken from The Public Records of the Colony of Connecticut, from April 1636 to October 1776 ..., transcribed and published in Hartford: Brown & Parsons. 1850-1890. Volume 1, pages 13, 19, 140 and 149. All pages have been digitalised and are accessible on the web at http://www.colonialect.uconn.edu
197 See the Mattabesic history which appears at http://www.dickshovel.com/matta.html, downloaded on 18 August 2003, written in 1997 by Lee Sultzman, with the help of contribution from Dr. Blair Rudes. Lee Sultzman refers to a forthcoming book edited by Jack Campisi and William Starna, Varied Landscapes: 300 Years of New England Algonquian History, which will contain an article by Dr. Rudes titled “Holding Ground along the Housatonic: Paugussett Land Los and Population Decline from 1639 to 1899.” According to Lee Sultzman, “During the next century, almost all the Mattabesic lands in Connecticut were sold or taken over by the state – in many cases without native knowledge or consent.”
198 These quotations are taken from The Public Records of the Colony of Connecticut, from April 1636 to October 1776 ..., transcribed and published in Hartford: Brown & Parsons. 1850-1890. Volume 2, pages 289 and 297-98;
acres for Indian use, noting that “… the … Indians shall have liberty to make improvement of it, they the sayd Indians sufficiently fenceing of it.” Column rights were now in full control.

When Josias Ellsworth arrived in Windsor in 1646, the people of the town were governed by a short, straightforward agreement signed in 1638 by nineteen English colonists from the Connecticut towns of Windsor, Hartford and Wethersfield. Known as the “Fundamental Orders,” it is a short document with eleven original clauses based on broad principles of self-government. For many scholars, these “Fundamental Orders” are one of the founding documents in American history, one of the first written constitutions of a self-governing people. Yet, it also represents a conspicuous political failure on the part of my ancestor and his generation because there was no attempt to create a negotiated constitution in which both English and Native Americans had a voice and a role. Despite the wars and epidemics, there were Indian survivors with wisdom, knowledge and experience, but this is an English document for English people alone.

Today, we can see that by ignoring the Native Americans, the English denied themselves access to the knowledge of Indian societies. This intricate ecological wisdom and the mosaic rights that embodied it had created a landscape of notable biological abundance. In their rejection of Indian sovereignty, knowledge and rules, the colonists unwittingly destroyed the biological wealth they coveted and admired. Their own system of column rights then created the foundations for a global trading economy whose accumulated savings are still transforming the raw materials of the world. Today these rules continue to alter ecosystems everywhere, creating the financial riches we admire, while reducing ecological wealth so drastically that we risk our own well-being and survival.

At the time, the Puritan colonisers saw the hand of God in every epidemic disease and successful military campaign that

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website: http://www.colonialct.uconn.edu  The sentence of indentured servitude was one inflicted on English criminals at the time and was also a concession. The Court had rejected the option of sending defeated Indians into slavery on Caribbean plantations, a certain death sentence.

199 The Public Records of the Colony of Connecticut, from April 1636 to October 1776 …, transcribed and published in Hartford: Brown & Parsons. 1850-1890. Volume 3, p. 82. All pages have been digitalised and are accessible on the web at http://www.colonialct.uconn.edu .

200 See, for example, the web page of the University of Oklahoma College of Law, titled “A Chronology of US Historical Documents”. http://wqww.law.ou.edu/hist/
reduced or subjugated the Indian population. They believed that God had blessed their occupation and transformation of the land. Four hundred years later, I lack their faith. To me, their triumph has turned sour, the harbinger of a great disaster. What might we have learned if the New England Indians had survived? In time, would enough Indian and English people have learned to understand each other’s rules? Between them, could these translators have created new rights and conventions using the knowledge of both sides?

Shortly after finishing this research, I took a train up the east side of the Connecticut River on a cold winter’s day. In the late afternoon, as the light was fading, we went past Windsor. As I looked out, I could see the town on the other side of the river, just as a bald eagle was searching the open waters for his winter’s meal. Changes in New England’s economy have brought back much of the wildlife, but the Indians’ rich landscape is gone. It was their footpath rules that Josias Ellsworth walked over when he escaped from the English Civil War in 1646, but it was today’s American fences he left behind him when he died.

**The Mask of Order in Abundant Life**

The English Civil War produced a well-financed and powerful military state at the same time that the biological abundance of the Americas bred a profligate attitude towards the natural world. With each industrial and military success, British and European power grew. In the late 19th century, Europeans colonised Africa where policies of extraction continued. This profligacy still underpins our economic systems and is still backed by military force. Yet, I wonder: would our societies be so careless now if Josias Ellsworth’s generation had adopted the Indians’ technologies of abundance rather than perfecting their own economies of extraction? I don’t know. I do know that Europeans of the 19th and 20th centuries equally ignored the role of African knowledge in the abundance of African landscapes. However, unlike New England, African populations were not wiped out by conquest and disease. That means the possibility of creative engagement with African learning

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201 The most recent example of using military force to gain access to natural resources is the 2003 Anglo-American war against Iraq.
is still with us today. But what might African knowledge hold and has any of it survived conquest and modernity?

Sitting on the mantle in my Gray’s Inn room is a Makonde mask from Southern Tanzania. The mask is made of some light wood once blackened, but now worn and dusty. It is a very contemporary face, the image of a strong man in his prime whose large eyes glance slightly downwards. There is a broad nose between high cheekbones in a firmly round almost square head with two very tiny ears at the back. The eyes are solid, the black paint of the pupils still visible in a sea of brown with the remnants of something white just touching the eyelids. The mouth is half open, as if the man were just breathing or nearly smiling or just about to speak. Through this opening the masked dancer could see and shout, whisper and sing, not as a performer but as the voice and being of the living spirit within the mask. I sometimes wonder whether this mask still carries the spirit it was built to house. The eyes look in different directions at different times of day; the mouth moves with each trick of the light and – since the mask arrived – the old, double-faced post office clock no longer keeps good time.

I began travelling regularly to East Africa about five years ago, working for a young Kenyan, Arthur Muliro, who has now organised three national scenario projects in Kenya, Tanzania and Uganda. The people who joined us have been passionate, intelligent and curious, intrigued by the process and where it might lead. My job has been to design the workshops so that each group could identify and work with the critical issues in their country. Between our meetings, team members did the research, writing and testing of ideas to create a new story of the past and present. This story led was the foundation for stories of different futures each country might face. We sought to discuss the undiscussable, to imagine how key uncertainties might unfold and to discover ways of taking personal responsibility for society’s affairs.

202 Frank Herreman, “Face of the Spirits”, in Face of the Spirits: Masks from the Zaire Basin, Frank Herreman & Constantijn Petridis, editors. Koninklijk Museum voor Midden-Afrika, Tervuren, Belgie, Annalen Menswetenschappen, Vol 140, p. 14. “The mask is a medium through which the supernatural takes on a physical reality.” In the same volume: Marie-Louise Bastin, “The Akishi Spirits of the Chokwe”. “It is through masks that the akishi make themselves known. The akishi are ancestors, abstract beings or forces of nature that are honoured and respected quite as much as they are feared.” p. 79.

203 The Kenyan process, including development of the scenarios stories and their dissemination throughout the country, was completed by the end of 2002. The Tanzanian scenarios were launched in May 2003 and will be disseminated more widely in the coming months. The Ugandan team is still working on their scenario stories. For
When we began in Kenya, the process was new to all of us, including me. I had run similar exercises in large corporations, but never for a nation. From the start, my job was a delicate one. I was the only person who was not an East African and, as the facilitator, my own thinking had to remain in the background. I could suggest ideas, but I could not argue or defend them. Still, I kept hoping one of the East African teams would explore the ecological knowledge of African peoples. African societies are often described as needing to “catch up” with industrialised societies elsewhere, which implies they are backward and behind. But what if the future were not just industrial, but also ecological? And what if African societies had a finer legacy of ecological understanding than the admired Western world? Whose culture would be backward then? However, if I suggested that ecological issues might shape the future and that African traditions had something to offer, I was dismissed as romantic or resented as someone sending educated Africans back to the bush.

I was not wholly alone in my instincts, however. During one workshop in Tanzania, four of the team interviewed Joseph Nyunga, a thoughtful man and an inspired Makonde sculptor. “You believe the other culture is better than what we have here,” he told them. “Before you come back from the West they make you a ‘yes person’ or you don’t qualify. You become brainwashed. …Tanzanian universities should teach Tanzanian knowledge.” But what was this Tanzanian knowledge? What had inspired the mask in my room?

Two East African priests – Laurenti Magesa, a Tanzanian Catholic, and John Mbiti, an Anglican from Kenya – have written extensively about African Religion. They argue that across the many different social and political units of African society there is a brief discussion of the Kenyan scenario work, see chapter 6, “Kenya: Scenarios for a Country’s Future” in The Power of the Tale: using narratives for organisational success by Julie Allan, Gerard Fairtlough and Barbara Heinzen. John Wiley & Sons, Ltd, Chichester, 2002.

As I do not speak Swahili, this quotation comes from team reports of their interviews, recorded on a laptop as they were delivered.

core set of beliefs that have the same philosophical integrity found in any great world religion. They both describe a circular world where God and all his work sustain humanity who is morally obliged to sustain God and all his work.\textsuperscript{206} It is a world of interlocking forces linking the visible and the invisible, the animate and the inanimate, mankind and all other forms of life. In this world, nothing acts alone. “The world of forces is held like a spider’s web of which no single thread can be caused to vibrate without shaking the whole network.”\textsuperscript{207} It is a unified world of sacred relationships between five elements: God, mankind and those about to be born, all other forms of life, all objects and phenomena without life (such as rocks, mountains and rivers), and the spirits – who may be the spirits of nature or the spirits of people who have died. Powering the universe of this world is a vital force or energy which exists in every living thing. In the words of John Mbiti, “This … is a complete unity … which nothing can break up or destroy.” Man’s purpose in this world is to preserve the harmony of these elements as this will ensure the abundance of all life and therefore of mankind.\textsuperscript{208}

Within this world, the progressive linear time of the West has little meaning. Instead, traditional African time resembles an expanding universe where the present, \textit{sasa}, “feeds or disappears into” a deeper time, \textit{zamani}. \textit{Sasa} is an enlarged nowness, involving current events as well as people who are about to be born or have recently died. \textit{Zamani} is macro-time, deep time. It is “full of activities and happenings” which can explain the present. The ancestors and other spirits are found here along with everything that ever existed in the world. “\textit{Zamani} is the graveyard of time … the final storehouse for all phenomena and events… a reality that is neither after nor before.” It is a past that explains the present and contains the future.\textsuperscript{209}

\textsuperscript{206} This sentence is a short-hand description of a longer argument which appears in Laurenti Magesa, \textit{African Religion: The moral traditions of abundant life}. Orbis Books, Maryknoll, New York, 1997, p. 72-73.


\textsuperscript{209} John S. Mbiti, \textit{African Religions and Philosophy}, 2\textsuperscript{nd} edition. Heinemann, London, reprinted 1999, p. 22-23. This aspect of John Mbiti’s work has created considerable debate and not everyone subscribes to it. I find it aesthetically pleasing, but have no real basis for judging whether or not it is an accurate reflection of traditional ideas about time. \textit{Sasa} and \textit{zamani} are both words that John Mbiti had taken from Kiswahili to form his argument. More commonly \textit{zamani} simply means ‘the past.’
In this cosmology, the African spirits are the living mystical heart of things. As they are “invisible, ubiquitous and unpredictable, the safest thing is to keep away from them.” That, however, is very hard. They crowd into the landscape on all sides. Some are the human spirits of ancestors who recently died but are still active in the lives of their descendants as the “invisible police of the families and communities.” The mask on my desk may house such an ancestor. Others spirits are those who died long ago, people who are unknown, mysterious and dangerous. Still other spirits are not human at all, but linked to natural forces – the sun, mountains, seas, hurricanes and diseases – that are so powerful they are nearly divine, acting with the force of God. Other spirits take the forms of snakes, animals, plants or stones. All spirits are able to possess men and women, using them to speak. Such possession can be a torment, a vision or a source of coercive power; it is always a frightening instance of the “real, active and powerful relationship” between the spirits and human society.  

There is much in this cosmology that resembles an ecologist’s view of the world. For an ecologist, nothing stands alone because interlocking relationships create and constrain all forms of life. Like the ecologist’s world, the African universe is an intricate place of multiple and cumulative interactions, where human societies are subject to the same forces affecting all living beings. Similarly, while the structure of African religion is universal, the forms and particularities are wonderfully local; no two villages will have the same collection of spirits just as no two ecosystems are wholly alike, however much they resemble each other. Thus the spirits reflect the landscapes they inhabit and carry society’s intimate knowledge of the land. Such knowledge requires an enlarged concept of time. By appealing to the ancestors of five generations, the long time horizons of ecological change enter everyday affairs. Finally, the unpredictability of the spirits resembles the unpredictable disorders of nature: droughts, floods and various plagues. Like nature itself, the spirits may be responsible for crises and yet, paradoxically, will guard those places from which life is restored. As every ecologist knows, the seeds of mountain forests are among the first to regenerate a once flooded plain. With each crisis, human societies –
like the rest of life – experience dearth, hunger and violence as normal, if unwelcome, episodes in recurring cycles of constraint, decay and regeneration.

This is a philosophy for living, not comfortably, but resiliently with the hazards of the natural world. It is a philosophy for surviving limits that, when respected, can create biological abundance and diversity. It begins with the belief that life itself is sacred, sustained by the relationships between man, the spirits, God and nature. Instead of wealth, African tradition has sought the abundance of life in all its forms. At a time of huge ecological challenges, the principles of African Religion, like the echoing stones of London, have something vital to share; they might even help us recover the lost learning of Josias Ellsworth’s time.

**Searching for the Voice of Nature**

The last meeting of the Tanzanian scenarios team took place in July, 2002 as I was still puzzling over possible connections between development, ecology and African traditions. What might be the voice of nature in everyday affairs? What political power did the natural world have? Over our last lunch as a team, I raised this question with the others, asking where I might go to understand it a bit more. One week later, three of us, my niece, Rebekah Heinzen, myself, and Franco Mpangala from the scenario team sailed south to Mtwara, the province where my mask had been made.

Our next ten days were exceptionally successful. Rural buses were slow, but got us where we wanted to go; when we arrived, we found the people we needed to see and others we did not know were there. All of them gave us their time. Everywhere we went we asked the same question: who has the voice of nature in your society and what power does it have? The answer came in a variety of forms – histories of clan power, stories of spirits and streams, tales of witchcraft and politicians. Importantly, the question made sense to everyone. The natural world was not

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211 I am particularly grateful to the regional commissioner, Mr Nsa Kaisi, who gave us excellent support, and introduced us to a number of people who were extremely helpful, among them the team working in RIPS, Rural Integrated Project Support. Unless a published source is mentioned, all quotations in this chapter are from my notes of the Mtwara interviews. While many interviews were in English, all interviews in Kiswahili were translated by Franco Mpangala, so my notes are of his translations.
something to be taken for granted, ignored or thrown away. It was present in practical knowledge and the political history of local affairs.

After landing at Mtwara town, our next stop was Ndanda, where we interviewed Abbott Siegfried and met Paul Akiba Hatia, an administrator at the Ndanda Mission. Paul gave us a detailed history of his Makua clan, highlighting the positions of power and authority and linking each role to the natural world. He then introduced us to other elders, and took us to interview them. The structure that emerged from these interviews was of political power in three places: the chief, the elders, and the chief’s spiritual advisor – in this case, because the Makua are a matrilineal society, a woman, known as the Apwia Mwenye. These three were responsible for their people, but not accountable to them. Instead, they were accountable to each other, a self-perpetuating oligarchy of mutual oversight. “So,” I said to Paul, after he had outlined these roles, “each one is checked by someone else.” “Exactly,” he replied. “That is what it is. Accountability works in several directions.”

But who among them represented the natural world? According to Paul, responsibility lay with the chief. “The chief is chosen by keeping the order of society and order includes the order of the natural world … but the Apwia Mwenye advises and also has to have great knowledge of the natural world.” Dr Wembah-Rashid, a researcher in Mtwara from a Makua clan, also saw the chief’s role as essential. “A chief was … the custodian for the nature around them, because … the land must be kept alive for people to live. If the land is sickly, people are sickly.” The chief was able to exercise this responsibility thanks to his three roles: the distribution of land (the basis of all livelihoods); the resolution of disputes; and the leadership of rituals that asked ancestors for help when the clan’s survival was threatened.

In addition, Dr Wembah-Rashid said responsibility for the natural world existed in rules and restrictions that were taught by the elders of the clan. “…in traditional society…people would not kill certain types of animals because they were related to those animals – or trees – and it would be like killing one of your own clan. …
They had strict regulations on how to behave at a water source, including rules on the distance at which trees could not be cut down. There were birds one was not supposed to mock or kill.” In an important sense, therefore, the knowledge of what one was allowed or not allowed to do, was held by everyone as part of their ordinary education. The initiation rites organised by the elders were important schools in the rules of nature. During these rites, said Dr. Wembah-Rashid, “information was passed on and … the older people [were reminded] of what rules applied.”

However, the chief’s ability to keep order in society and the natural world depended on the respect he commanded. That in turn depended on his ability to invoke the power of the spirits, during important rituals in times of trouble – such as an epidemic or drought. Sometimes these rituals were conducted in the chief’s meeting place, at other times they were on a sacred mountain. “If there is a major problem,” said Paul, “especially for a drought, the chief and the wazee [elders] go to the mountain, to the cave ... it is a very complicated place, Hungungwe.... I know that sometimes when they go to the mountain, the rain comes.”

These rituals suggest that the spirits were the critical custodians of the natural world. “The ancestors and the land are the same thing,” said Paul, “so you have to respect it.” The discipline of that respect was reinforced in daily admonitions, but also reinforced by the use of masked dances. Sometimes the masks were used to satirise and entertain; at other times they deliberately inspired fear. That may be why the Makonde mask on my mantle is often frightening to my visitors in Gray’s Inn. While the chief had temporal authority for the land, in some ways it was the Apwia Mwenye – the spirit advisor – who had ultimate authority. In the history of Paul’s clan, for example, it was the Apwia Mwenye’s who removed an ineffectual chief in the early 20th century by ordering him to be murdered and another man put in his place. Even today she is the only one who can chide the chief. From small clues in our various interviews, I would guess that her ultimate authority comes directly from the powerful spirits of the zamani world, the deep reservoir of distant space and time.
If I am right about the authority of the spirit advisor, she is also the political voice of the natural world through her links to the spirits. Many spirits inhabit rocks, waterfalls, caves, mountains and forests. Others take the form of animals, birds, snakes or other creatures. Still others are the spirits of people who died long ago and can remember ancient ecological disasters. As the person who has contact with all these spirits, the spirit advisor is the guardian of the natural world, with all its intricacies and harsh thresholds of ecological change. While today the Apwia Mwenye is a quiet and unassuming woman with a strong handshake and calm gaze, in earlier times she held considerable power.

Paul Akiba Hatia introduced us to the political structure of his clan with its three leading roles: the chief, the elders and the spirit advisor, the Apwia Mwenye.²¹² The chief had secular responsibility for the land, the elders instructed the young in the rules of nature, while the Apwia Mwenye may have been the voice of nature itself. There was one final element in this unwritten constitution: the neighbours. Each clan was surrounded by neighbours who defended their own rights, people and ecosystems with their own chiefs, elders and protective spirits. As a whole – the clan structures plus the checks of the neighbours – created a political economy of biological abundance.

_**Stretched and Unstable**_

So what did we see when we travelled on the local buses of Mtwara region from the coast to Ndanda to Masasi to Newala, then back to Mtwara town and up to Lindi, Kilwa and the road to Dar es Salaam? Did we see a landscape of forests populated by screaming monkeys, or wide African plains dotted with lions, elephants and giraffes? No. The ancient landscape of abundant and dangerous life has been silently pushed away.

The process began soon after the Germans had defeated a great uprising in Tanzania in 1906-07, known as the Maji Maji War, but it has accelerated in recent decades.²¹³ Mzee Raymond Mrope, a

²¹² There was a fourth leader, the Nampanda, responsible for the military defence of territory, but this position is now obsolete.
wildlife officer and elder in Paul Akiba Hatia’s clan, told us that as peace and development were established in the early 20th century, “Trees were cut then and many animals were consumed.” His father, who was with us during the conversation had “...witnessed the disappearance of the animals year by year without noticing it. He thought it was temporary, that perhaps they had migrated to avoid people, or were eaten. ... But the loss of animals means a poor diet, while the loss of the trees means less rain and less firewood.”

The chief of a neighbouring clan, Mwenye Nkope, also described an area of rich dangerous nature that has since vanished. “We met a lot of dangerous and destructive animals, like lions. This village, Nasindi, is named after Shindi, which is a kind of animal, many of which were here when we first came. ... Once we settled, the animals ran away.” Another man, who served us breakfast each morning in Ndanda, told us that that when he was a ten-year old boy some fifty years ago, his own mother had been eaten by a lion. When his father had gone to revenge this death, he had been mauled by the same lion and killed.

In a more remote Makonde village, lying between the Ruvuma river and the bottom of the Makonde Plateau, the village chairman told us that when they first settled there in the 1960s, “we were just living in a clan system and there were not many people around. Some settled here, some far and the animals were in-between.” He drew invisible circles on the table in front of him as he went on. “So there was no problem and the rituals protected people. Plus there was traditional medicine which protected people from animals, especially snakes. ... So the swamp, at that time was fruitful for each and every thing...” Along with the loss of soil fertility has come climate change. “The rainy season used to be six months long; now it is only three months. ... the seeds germinate, then everything dries up and there is hardship.”

Thus, the landscape we saw in early August 2002 was not a landscape of forests and lions. Instead, our Mtwara buses rattled pamphlet which tells the story of the war by quoting from German documents of the period and interviews from the 1960s conducted with elders who remembered the War. See also G.C.K. Gwassa, “Kinjikitile and the Ideology of Maji Maji” in The Historical Study of African Religion, edited by T.O. Ranger and I.N. Kimambo. Heinemann, London, 1972, p. 202-217.
along a road set in a roughly cultivated plain. As we left the coast, the villages were surrounded by coconut palms. Further inland, much of the ground was planted with cashew trees, thick spreading trees with dense dark leaves whose shade makes it hard for anything else to grow beneath them. Leaning against many mud houses were neatly tied bundles of thatching, ready to repair the roofs before the next rains. As the dry season lengthened, the rivers and streams were turning to sand, while everywhere, often at dusk, we saw women and children carrying water in colourful plastic buckets or bright yellow jerry cans. It may just have been the dryness of the season, but the landscape felt stretched and unstable, as if too much was being asked of the earth and waters beneath our feet. What had happened to the political economy of abundant life?

There are four critical, interlocking changes to understand: new religions, new governments, new health and new goals. The first change was religious, a fundamental challenge to the role of the ancestors. While interviewing Mwenye Nkope, one of the Makua clan chiefs, I drew a sketch on the ground showing a man at the centre connected in four directions to God, the spirits, the rest of biological life and the inanimate world. Had it once been man’s job to manage all these relationships and to keep everything in harmony? “Yes,” replied Mwenye Nkope. “But God was far away, remote. God was unclear and we thought that the missionaries had better access to God who was so unclear. We thought that they could bring God closer to the people.” Was man’s relationship with the spirits and the natural world lost when people followed the missionaries? “At that time, there were very few people, so it was easy to manage the environment and people. As the population grew, it was harder to manage, but the communication with the ancestors was totally blocked up, except as individuals, because we were taught that communing with the ancestors is a mortal sin. … Now, you have to struggle on your own.”

To a Westerner, the loss of contact with the ancestors is just the dying away of an irrelevant superstition. However, Laurenti Magesa, in his book on African Religion, writes: “If we compare the interaction of vital forces in the universe to a spider’s web, then in
day to day life the ancestors form the principal strand without which the fabric collapses.”

As the new religions undermined the spiritual foundations of abundance, European colonial administrations and their successor, the independent state of Tanzania, attacked the role of the chiefs. This has been the second critical change. Governments weakened the chiefs’ power by taking over many of their functions. According to Mwenye Nkope, “Since government has taken over, we have no responsibility, but have a certain kind of role in minor problems in the community.” The new governments took ownership of the land, leaving the chief’s authority to function in the grey light of half-tolerated ‘customary law.’ In the process, the modern state adopted Western column rights, rather than mosaic rights defined by local needs. This is why the administrators of national parks assume that nature is only safe when protected from the human world by fences. Local people, however, often still live in a world of footpaths, where local knowledge and mosaic rules act as fences. These two different philosophies wrestle with each other in Tanzania today; as a member of an Mtwara rural development team observed: “Village knowledge may exist, but will government accept it?”

The third important force altering the traditional political economy has been investments in health and education. As more children have survived, Tanzania’s population has trebled in thirty to forty years, straining the capacity of the traditional agricultural system. During one of our meetings in a Makonde village near the Ruvuma River, an elder told us, “The fertility of the land is so poor. We had shifting cultivation, but now all of us have been in this place for ten years, so what do you expect the result to be?” This failure of the agricultural system to feed people has led to a loss of confidence in traditional ways. “In [the past], when they were having problems, they made rituals, but this time, it doesn’t work.” Reading and writing, classic foundations of modern economic development, have also undermined traditional knowledge. In theory, literacy should not reduce the value of oral knowledge, including knowledge of the natural world. In fact, as Mzee Ayubu, the leader of a neighbouring village observed, “Now there is no

expectation of turning back to [traditional] communities if you have a nice education.” Nor, we were repeatedly told, can one mix the two. “You cannot succeed by mixing. … the modern and the old ways cannot mix.”

The fourth critical factor undermining the web of traditional beliefs and political economy has been the goals of development. Many policy makers measure development in financial terms; in popular eyes it is measured by possessions – clothes, phones, houses and cars. Where traditional societies sought the abundance of life and resilience in times of crisis, modern societies have pursued the increase of money and things. This goal explains why we did not see forests or giraffes along the Masasi Road, but instead endless plantations of cashew trees. “I encouraged people to plant trees to get money,” said Abbott Siegfried of the Ndanda Mission. “Then the price broke down … and it has still not recovered.” “A lot of forest was cut to make plantations and fields,” said Babu Alfons. “Cashew nuts … made people rich, so we didn’t notice the loss of the trees.”

In a mere one hundred years, new religions, national governments, modern healthcare and education have set a new social goal: the increased possession of health, money and things. As people and governments have reached for that goal, they have created a different relationship with the natural world. In the process, the abundant life that supported African societies for thousands of years is rapidly slipping away, while the villagers of Mtwara remained stuck between traditional and modern ways. “We are still hanging,” said the chairman of the Mpilipili village. “We are still using the old system [which] is not working … [but] we don’t have money for modern things.”

Just weeks before the Tanzanian scenarios were published, the traditional concept of interdependent relationships was added to the draft. We called it the “Utu Net”. “This ‘utu’ is lived in the rites of birth, initiation, marriage, and death; in the wedding and funeral committees that reinforce these connections, in our elders who keep the peace. … We [Tanzanians] are also a people with a strong connection to the land and its life – plants, animals, fish, and birds. … our net also includes this wider world … For some, utu explains
why we fail to develop. For others, this utu is deep, enduring and is the essence of who we are."²¹⁵ With these words, I heard Tanzanian knowledge openly enter the modern public realm and silently prayed its influence would endure.

**Feeling for Stones**

The East African teams helped to answer the Sahelian question of thirty years ago: how do we outgrow our histories? One way, clearly, is to tell new stories of the past. In Uganda our first two meetings had delicately danced around a post-colonial history of civil war and unpredictable violence. During our third meeting, at a hotel near the headwaters of the Nile River, Arthur and I decided it was time to push through that delicacy. One afternoon, we sent everyone out to talk with people and bring back ‘artefacts’ of their journeys. Each artefact was then labelled and laid out on a long table. The next morning, five or six people silently arranged the artefacts and explained the story the objects told.²¹⁶ This first story was not enough, however, because everyone in the room had something to add, moving the objects up and down the table as the story changed. As tradition and modernity, violence and order found different meanings and places on the table we created a new story of Uganda’s past.

I have also tried to tell a new story. My history begins when new social foundations of literacy and philosophy were laid down in England in the centuries before 1300. Then, after so many people died of epidemic disease, new political forms were created as old habits of power were forced to change. Together, the new politics and new social foundations stimulated practical neighbourly engagements around experiments and learning. These experiments created the industrial revolution which was further supported by the abundance of British coal and the natural resources of the American colonies. However, the English settlers did not realise that America’s abundance had been produced by the people they conquered. Instead, with the help of empires and military force, they created a profligate economic system based on an implicit subsidy.

²¹⁶ I first saw this technique at work during the Business Arts Forum of the London International Festival of Theatre, and adapted it to the Ugandan process.
from the natural world. Now, in the name of development, this English accident has become a global ambition. It has been realised wherever societies have laid down strong social foundations of health and education and had access to nature’s subsidy of raw material, clean water and air. Now, the very success of this system is forcing us to change. We already face new necessities and new extremities of climate, hunger and disease. As happened before the year 1300, we are once again inventing new foundations based on new engagements, new necessities and new ideas.

Among these foundations are all the formal experiments of intergovernmental institutions: the Kyoto Protocols backed by the Intergovernmental Panel on Climate Change as well as new treaties like the Biodiversity Convention and the ILO Convention on the Rights of Indigenous Peoples. These coexist with new global trade agreements made in the WTO, the World Trade Organisation. In and around the new treaties, multinational businesses are feeling their way, working with the World Business Council on Sustainable Development, the Global Reporting Initiatives and the Global Compact of the Secretary General’s office in the United Nations. There are also thousands of organisations outside of governments, international institutions and big business. Some are large environmental institutions, some altruistic groups working on human rights, agricultural development, health, education, water or trade.

However, when I think about the foundations of the coming ecological age, I do not think first of global treaties. Instead, I think of the people I have met who are passionate about the work they are doing in some small way. During our first meeting in Tanzania, for example, I heard of a project working with villagers to protect the red colobus monkey, a species that only survives on the remnants of the Jozani forest in Zanzibar. In September, 2001, I went to Zanzibar where I met Ali Mwinyi in the Forestry Department. 217 “So” he summarised, “the monkeys were dying and the forest was being depleted … It was a fight. There was no agreement and we were working like police.” In the mid 1990s, however, a new community project began sharing tourist income with the villages around the forest. “We wanted to see that everyone

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217 I am indebted to the assistance of Mzee Maulid Mzee, who met me by accident at the Zanzibar ferry port and introduced me to the people I needed to see.
was equally benefiting. …we became friends with people, and we learned from them. Without the community we cannot protect the monkeys.”

Ali Mwinyi’s enthusiasm was catching, but the story of his own learning is what I still remember and think about today.

Another East African project has been running for at least twenty years on the shores of Lake Baringo in Kenya’s Rift Valley. Murray Roberts is an Englishman who grew up by the lake during the 1950s and 1960s. At independence, he did not leave the country, but stayed on and married Elizabeth Meyerhoff, an American anthropologist working in the area. Together they created the RAE project, Restoration of Arid Environments, and added a third member to their team, Paul Parsalaach, who also grew up by Lake Baringo. These three neighbours – an Englishman, an American and an African – together manage RAE. Both Paul and Murray can remember when the grasses came up to their waists and the elders of the semi-pastoralist Tugen, Pokot and Njemps peoples managed the cattle grazing on the shore. However, the elders’ authority was gradually eroded and no new system of grazing rights replaced it. By 1997 when I first visited Lake Baringo, much of the grasslands had been destroyed through over-grazing, exposing bare red earth that washed away in widening gulleys with each season’s rains.

As they watched the decline of the landscape and their neighbours’ livelihoods, the RAE team began collecting seeds, looking for any species that could quickly cover the bare ground. Only one of the thousand seeds they collected succeeded, a grass found in the garden of Murray’s childhood home where his mother continued to live. They learned that by scraping out a ‘pan’ of earth surrounded by ridges seeded with this grass, the rains would collect in the pan and water the seeds. Within a year or two, the pan itself would be covered with new grass, valuable as fodder, thatching and cover for a variety of small animals and birds. The first field was rehabilitated in 1982; since then, others have followed.

On its own, this simple technique of land restoration was rapid and impressive. What was equally fascinating to me, however, were

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218 This project follows the lead set by the Campfire project in Zimbabwe, which was started in the 1980s by ecologists working for the Zimbabwe National Parks in the 1980s. See http://www.unsystem.org/ngls/documents/publications.en/voices.africa/number6/vfa6.08.htm and http://www.cc.colorado.edu/Dept/EC/Faculty/Hecox/erichecox/kenzim.html.
the discussions among residents around the lake. These lengthy negotiations established which areas would be reclaimed and decided who could fence in the new grasses. Negotiations also decided who else could use the grasses and on what terms. In short, a new system of rights, blending both column rights and mosaic rights was being negotiated, agreed and protected.  

These are East African examples. What of the other two continents in my life today? Quite by accident, while flying from San Francisco to Calgary, I sat next to a man who got on the plane after me, his jacket pocket weighed down with a copy of the Scientific American. His name was Dwain Morse, and he turned out to be an energetic and passionate inventor whose small company’s mission was “to understand the structure of water.” We talked without stopping for the entire flight. His company was small, innovative and supported by financial angels. Their technology used bubbles to attract contaminants and float them off for disposal before returning clean water to the environment. The science of their work was fascinating and published in highly reputable journals. What intrigued me, however, was the way Dwain had integrated scientific research into his business model so that he and his team never stopped learning. Dwain told me of a lettuce packing company in California’s Central Valley which he had approached repeatedly, asking them for permission to demonstrate their equipment. He said he did not expect to make a sale because the company had invested in another system, but “I wanted his data.” In fact, Dwain got his data and also got the sale by working closely with the company to solve a problem no one had previously solved. At a food processing plant I visited later, the operators were deeply impressed by Dwain’s team. “They never left, but stayed with us, working harder than we did to make it succeed.”

In the early 1990s, I worked with a government team in Scotland on the use of scenario processes in the public sector. There I met Campbell Gemmell, a Scottish geographer and committed environmentalist. During that assignment, Campbell’s energy and humour kept the rest of us going. Soon after we finished our report, he left Scottish Enterprise to work with another government-funded

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219 See the Baringo project website at: [http://www.michna.com/rae/about_us_home.htm](http://www.michna.com/rae/about_us_home.htm) and [http://network.idrc.ca/ev/php](http://network.idrc.ca/ev/php)

220 See the company’s website at [http://www.cleanwatertech.com/index.html](http://www.cleanwatertech.com/index.html)
project now known as the Central Scotland Forest Trust. Their mandate was to use forestry to transform the landscape between Edinburgh and Glasgow, an area much damaged by two hundred years of coal mining and its related industries. The Central Scotland Forest includes both rural and urban areas, farms as well as forest plantations and abandoned industrial zones. Campbell and his team negotiated with numerous government departments as well as business people, farmers, foresters and the population at large. Many people living in the area had little interest in the health of the landscape, yet Campbell and the Forest Trust not only improved the physical environment of Central Scotland, but also improved the knowledge of wildlife and ecology in society at large. This year, Campbell became head of the Scottish government’s Environmental Protection Agency. In an article for the magazine, Corporate Scotland, he wrote “The environment is, and will continue to be, the underpinning of Scotland’s economy ….”

Campbell Gemmell is using the powers of government to link the environment to the economy. Dwain Morse is using the private sector to create a business he hopes will succeed. Ali Mwinyi and Murray Roberts are working with communities on the ground learning to negotiate with people who are simply trying to survive. All of these people know that the way we do things now has to change. I have met them when they were dogged by discouragement, but have also heard the excitement in their voices as they explained to me what they were trying to do. All of them are crossing the river by feeling for stones, learning how to shift from today’s social and economic systems to new systems we can barely imagine.

Their experiments – and many others like them in government, business, voluntary organisations and international institutions – are creating new foundations for an ecological age. But nearly everyone faces a big knotty challenge none of them has solved: markets and money. When we visited the Jozani Forest after talking with Ali Mwinyi, we found that the tourist income did not suffice and the project was dependent on the generosity of international donors to survive. The Lake Baringo work has kept going for years on the

unpaid time and belt-tightening of its team while scrounging financial support from any reputable source to be found; they too are dependent on the generosity of donors. In his work, Campbell Gemmell relies on the power of persuasion, backed by a government budget and government rules. Dwain Morse and his innovative companies also struggle with a market that sees no financial advantage in investing in clean water. One of his team, Rafael Jovine, once told me a story of visiting a manager he had met before. Rafael expected the manager to decide finally not to invest in the clean water technology because it would not improve his company’s profits. As Rafael watched, the manager agonised over the decision, chewing his fingernails “until they began to bleed.” Only then, did he turn Rafael away.

Rafael’s story is the critical one here because it demonstrates that the fear of fines and regulations is not as powerful as the pursuit of profits and rewards. At present, we try to protect the natural world with penalties. But my own excitable imagination – and the example of the Jozani Forest – suggest that markets might support ecosystems if people were rewarded for creating an abundance of biological life rather than penalised for destroying it. That is why the experiments of the Jozani Forest – and others like it – are so important. I believe that a market system based on mosaic rights could create the incentives to encourage people to restore and protect the natural world, while bringing new prosperity to rural peoples. However, the political example of the Makua clan is also important because such a system would need to be backed by a legal authority with the voice of nature. This would be an authority as powerful in contemporary affairs as the Apwia Mwenye was in the history of the Makua clan. If such a system were to be invented, the Inns of Court would need to broaden their education to include the legal rights of the natural world and a new Westminster Hall would need to call all interests together to negotiate directly on issues that concern them. If all this happened, we might begin to reverse the systemic inertia that first set in during Josias Ellsworth’s time.

But what might stimulate such profound reform? What extremity or necessity might ignite this revolution? I don’t know. However, during the summer of 2002, Central Europe experienced damaging floods blamed on climate change. As the waters receded,
the *Financial Times* reported that Germany, Austria, the Czech Republic and Slovakia had announced they might cancel their orders for new fighter planes in order to pay for flood control.\footnote{Defence takes second place as clean-up battle absorbs funds.” *Financial Times*, 29 August 2002.} Suddenly, the politics of nature became very clear: when natural disasters are more threatening than the hazards of war, nature’s own political power will begin to change.
Chapter Eight

Moving On

I would like to live long enough to see a time when we begin to live symbiotically with the natural world. But one lifetime – the remainder of my lifetime – will not be long enough. As Dr. Fuller wrote in 1662, “All things are not found out in one age…” and we have a long way to go. Our task is more daunting because of the acceleration of human activity in the past fifty years. Thanks to improvements in health, agriculture and industrial production – all of our proudest accomplishments, in fact – mankind has become an invasive species, monopolising the waters and nutrients of the planet. As the diversity of life diminishes with each human success, the resilience of the whole system declines and crisis become inescapable.

The American ecologist, C.S. Holling, tells the story of C.B. Huffaker’s classic 1954 experiment in population dynamics undertaken at the University of California, Berkeley. This experiment took place in a room divided into separate cells. In each cell, researchers placed a population of spider mites with their favourite food, an orange. They also placed a colony of spider mite predators in each cell. As researchers varied the number of oranges placed in different cells, they counted the populations of mites and predators to see how the populations changed as the amount of primary food was altered. Sometimes they ran the experiment with all the barriers between the cells in place. Sometimes they removed a few barriers but left others where they were; once they took all the barriers away, allowing both mites and predators to move freely anywhere in the room.

The results were startling. When all the barriers were up, some populations of mites and predators exploded with increased food while others died away when food was scarce. Overall, however, the number of mites and predators in the whole room was the same at the end of the experiment as it had been at the beginning. This was interesting all on its own, but the most disturbing result

came after all the barriers had been removed and the food source varied in the same way. This time something else happened. First, both populations of mites and predators began to oscillate, rising and falling in relatively modest swings. As the experiment continued, those oscillations became more extreme, swinging more and more wildly until the populations of both mites and predators crashed completely and died out. The researchers cautiously concluded that the barriers had created spatial variability which had created diversity and diversity had created resilience.224

I see this experiment as a metaphor for our world. The mosaic landscapes of medieval England, of the Sahel before the French arrived, of Mount Cameroon in Kuva’s time, of New England under the Native Americans, and of Mtwara province before 1900 were like that experimental room with all its barriers in place. Today, many people speak enthusiastically of a ‘borderless world.’ They expect great wealth and economic growth as trade, money and labour leap over the mountains, deserts, rivers and seas that once formed the spatial boundaries of our world. Yet, the more borderless our world becomes, the greater the risks of a very big crash.

Already extremities of new kinds have begun to strike us. These will increase in my lifetime. There might be more diseases, more frequent floods or droughts, heat waves or extreme cold. We could see an increase in crop failures or epidemics among farm animals, or the more rapid extinction of species that are commonplace today. Or, we might find ourselves facing a greater explosion of unwanted plants and animals in our gardens and farms. The world we live in – human and wild – is too complex for precise predictions.

What matters instead are two things: what foundations might we lay down now and how might we learn to recover and carry on? New foundations and our own capacity to learn will help us invent the ecological societies we need as necessity and extremity come our

way. Twice before human society has invented new social and economic systems, first around agriculture and then around industry. Now, in much less time, we need to invent ecological societies that support the diversity of life so that all life can support us in turn.

**Neighbourly Experiments, Necessity and New Learning**

But what might that invention involve? In pre-industrial England, new goals were identified and met as people with different knowledge and skills engaged with each other on practical projects to meet new immediate needs. This was the virtue of neighbourliness. In the 16th and 17th centuries, “*Good neighbourliness [was] perhaps first in the criteria by which ... an individual ... was measured.*” This neighbourliness allowed the tangible skills of craftsmen to express the new concepts of people who had studied mechanical philosophy and other novel ideas. They came together in the practical projects of everyday affairs – a new windmill, a road, a new school or an alms house for the elderly. As my grandfather kept the village accounts of Roxbury, Connecticut and my mother helped to pass the school bond issue, I absorbed the habits of neighbourliness in a practical way.

Today, similar neighbourly experiments exist around local ecological ambitions. In Zanzibar, the protection of the red colobus monkey in the Jozani Forest is developing new knowledge, new skills and new agreements. Around Lake Baringo in Kenya, people are learning to restore degraded land and create new agreements to protect it. Dwain Morse’s clean water technologies – and his efforts to sell it in today’s industrial system – are another important experiment, as are Campbell Gemmell’s negotiations in Scotland. More casually, one day I found myself walking by the Bleeker Street Community Garden in New York City. I stopped to admire its tiny plots crowded with flowers, shrubs, trees and birdhouses and read its modest rules posted on the gate: “*invest in tools ... attend meetings ... clean up sidewalks ... participate ...*. I have also visited the new London Wetlands, created on the site of former waterworks along the Thames. Here, for the first time in a long while, rare bitterns

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226 Anyone who wants to see this kind of neighbourliness in action should read *The Warden*, the 1855 novel by Anthony Trollope about a clergyman accused of dishonesty while managing an alms house.
were seen in the summer of 2003. All these experiments, and others like it, are among the early foundations of the ecological age.

Neighbourliness on its own, however, did not invent the industrial system and will not invent the ecological age. The industrial revolution also required new knowledge of many kinds: new skills, new concepts and new ways of learning. The great foundation skill of industrialising peoples – in early England and today – has been the ability to read, write and calculate. Critically, these were not elite skills, but popular skills. They have enabled everyone to contribute to the invention of the industrial age and to its maintenance and expansion today. These popular skills also supported a new conceptual framework: the rational and scientific world of mechanical philosophy, of logical reasoning, empirical observations and comparative analysis. For these new skills and new concepts to change a human system, however, a new kind of learning was needed in the pre-industrial age: lectio et quaestio. As people learned how to read and question, inventions grew out of new enquiries and debate.

All the skills of the industrial age are still useful today, but now there is a new conceptual framework shaping our ambitions: the concepts of dynamic systems, ecological relationships and the chaos of complexity. These concepts are forcing us to discover new ways of learning, including simulations, computer games and the open experience of climbing mountains or working in a village on practical needs. As our concepts are changing, so is our technology, forming another foundation for the ecological age. Such technology includes the resource efficiency that lowers fuel consumption in all our machines, but it also includes the technologies of habitat restoration like that around Lake Baringo or the London Wetlands. Such ecological technology exploits new understanding of the habits and habitats of particular species in particular ecosystems, such as the red colobus monkey in the Jozani Forest or the water birds seeking refuge in the London Wetlands. The technology of the industrial age is not replaced in the ecological age, but it seeks different goals, requires different popular skills and uses a conceptual framework of ecological relationships rather than the specialised understanding of isolated things.
Throughout, the style of learning through questions remains essential to systemic invention. In today’s organisations and neighbourhoods, it is easy to accept the prevailing assumptions that underlie all decisions. “I cannot change the system,” is an excuse I have often heard. Yet it is precisely our own assumptions that we need to question for the system as a whole to change. That is why I believe our work in East Africa has been one of my most important assignments, as we have learned to question the basic assumptions underlying East African societies and lives.

**Conquest and Survival, Extremity and Engagement**

Such questioning requires the self-respect needed to challenge existing power and cannot be separated from the experience of conquest and survival. This is particularly important today because reservoirs of ecological knowledge survive among non-industrial people and it would be folly to throw that knowledge away. Many such people live in regions with great biodiversity and many are in societies that were still colonies less than fifty years ago. For all these reasons, the experience of conquest, survival and creative engagement remains vitally important today and links the histories of the three continents I know. The Anglo-Saxons were conquered in 1066, the Indians of New England were replaced by 1700, and by 1900, most Africans were under European rule. The damages of conquest, the slave trade and colonial rule are not easily outgrown. Like the gris-gris I found on the streets of Dakar, its mischief can linger for generations, poisoning everything that follows. However, the English story shows us that the mischief of conquest can be outgrown, allowing all our societies to experience the relief of throwing that poisoned gris-gris into the sea.

However, for anything fruitful to follow a conquest something of the conquered culture needs to survive. Rosamond Faith describes how a group of English peasants in Hampshire used 400 years of oral history of their rights to complain in 1364 that their current landlord was exacting services they had not been obliged to do under King Edgar in 972. Kuva’s defence of Mount Cameroon, the social control imposed by the fear of zombies and the

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hunger to win the Mountain Race all show us a people fighting to maintain the magic of their own ways. The Makua clan history in Tanzania is another example of a pre-conquest culture adapting and surviving through the years. All traditions are wise for some part of the time, but if conquest kills off that wisdom, then there is nothing for anyone to learn. This is the tragic lesson of 17th century New England.

On its own, survival is not enough. For survival to shape the future, it needs to be backed by confidence and self-respect. When the Commons met in the Chapter House in 1375 and Wat Tyler and his peasants rebelled in 1381, existing powers were directly challenged to change. This challenge grew out of the extremity of the Black Death, but was only possible because men had the self-respect to meet the mighty on more equal terms. The Commons who challenged the king did so as “men powerful and strenuous in arms.” Wat Tyler’s list was the sign of a man whose literacy gave him the confidence to shake hands with the king as one horseman to another. However, confidence without the survival of one’s own culture remains a conquest. When Joseph Nyunga chided members of the Tanzanian team for having allowed themselves to be brainwashed, he wanted them to have both the skills of the modern world and pride in Tanzanian knowledge – the knowledge he expressed in his carvings and which I heard again when I went to Mtwara. When the idea of the Utu Net came into the report of the Tanzanian team, an older African knowledge entered the educated language of the modern public realm.

As once conquered peoples gain a powerful voice and engage with those who have set the rules, the goals of society begin to change. The Anglo-Saxon tradition seems to have been less deferential and less centralised than the tradition of the Normans. As those traditions survived and the voice of people became stronger, local traditions entered political affairs, creating the democratic forms we know today. Today, the statistics that formed the 1984 double-S curve express the development goals of the modern industrial state. They monitor the improvement of health and education, the growth of financial wealth and the increased production and ownership of things. However, according to Laurenti Magesa, man’s responsibility in African Religion is to
secure the abundance of life in all its forms. This is a different goal from creating personal wealth and the growth of economic goods and trade, but no one really knows how to measure it. One day – soon perhaps – the abundance of life will be monitored everywhere in the world, along with the quantities of money and things. Only then will I start to believe that the experience of conquest in Africa has been outgrown.

New goals on their own, however, will not invent ecological societies, because new societies also require new rules. This is the lesson of the squares of London and of the mosaic rights of pre-industrial peoples. Both have shown that the rules which govern our use of the land shape our social and economic affairs in profoundly important ways. They are the practical expression of society's implicit goals. Industrial society could not have developed without the invention of new property rights and rules. These altered our relationship with the resources of the land and our relationships with each other. In early England, the ability to rewrite the rules required great political and social skills honed on the experience of neighbourly projects. As new ideas were tested and debated, as experiments succeeded and failed, some individuals lost and others gained. With each gain and loss, social relationships were renegotiated, redefining mutual obligations as well as power and prestige. So where are today’s negotiations? Once again, they exist in the practical experiments of new ambitions. They are in the Jozani Forest, the London Wetlands, and the Bleeker Street gardens. They can be found in the negotiations around Lake Baringo or inside the Central Scotland Forest.

The history of pre-industrial England, however, reminds us that neighbourly experiments are not enough. They need a connection to power. A strong formal connection existed in Parliament, where the leaders of local government were often those called to attend parliamentary session. These formal links were backed by the informal connections of neighbourliness as members of society crossed social boundaries to achieve common aims. This worked well in a small society where, in 1603, roughly four million people in England were represented by 462 members of the House of Commons.
But what are today’s connections between neighbourly experiments and people in power? I would argue that in large societies these connections are extremely thin. In England there are now nearly fifty million people represented by 529 members of parliament, an average of 93,000 people per parliamentarian. What becomes of systemic invention when political distances are so great? How many neighbourly experiments can an individual know when he or she is representing 93,000 people? This also makes it much more difficult for large experiments in new agreements to be accepted. The Kyoto climate negotiations are one of the notable global experiments in new ecological agreements today. But those who negotiate are not personally connected to the neighbourhoods and organisations where any agreement must be expressed in practical terms. Without these personal connections, how easily can the system change?

Even with strong connections to power, systemic change might not occur. Often new voices need the accidental support of necessity and extremity to help them force powerful people to change. In the Chapter House in 1375, the king needed money from the Commons to go to war; their power of the purse forced the king to listen to the Commons’ demands. During Wat Tyler’s rebellion, the new value of the peasants’ labour created the opportunity to challenge old ways. This only happened because of the extremity of the Black Death. In the following centuries, sudden death and epidemics broke up rigid power as often as they took people who were valued and esteemed. It was thanks to the necessity for money and the extremity of disease that, in both 1375 and 1381, everyone had something at stake and something to trade.

What are the necessities and extremities we face today and how might they change the relationships of power that currently set the rules? Climate change is one of the challenge that will force existing rules to change. It also gives the non-industrialised societies of the world a source of new political power, as non-industrialised people can demand payment for maintaining forests that soak up green house gases, or for improving the habitats of threatened species. As climate shocks become more frequent, their power can only grow. These shifts in political strength come as the petroleum age is reaching its end. During the transition, the system will not
begin to change when the oil runs out, but as petroleum products, one by one, become more expensive than renewable fuels. If the costs of climate change are reflected in the price of fossil fuels, the use of alternative fuels will rise more rapidly, reorganising society along the way.

Disease could be another great driver of change. Over the past fifty years, we persuaded ourselves that disease could be controlled, but with the spread of HIV/AIDS, the rise of antibiotic resistance and the appearance of new epidemics, disease, once again, is a “loathly monster” often outside of anyone’s control. “Plagues are as certain as death and taxes,” according to Dr. Richard Krause. In trying to understand the impact of HIV/AIDS in Southern Africa our team tried to imagine who would survive the epidemic, since they will define the future as much as the loss of those who die. We believe that the well-educated, well-paid and those who think long-term are more likely to survive. People living in cohesive societies, including traditional societies, are also among the survivors as are the grandparents now raising their grandchildren alone. These thoughts led me to speculate that perhaps, the long term thinkers who survive AIDS will more readily accept the time scales of an ecological age. Even more speculatively, I could imagine African grandparents passing on some of the older values of African Religion, with its connections to abundant life. Perhaps, AIDS in Africa will be one of the extremities that forces ecological principles back into everyday lives.

Ecological Living

So what might it mean to live ecologically? Among other things, it means accepting the autonomy of disease and recognising that plagues are a part of life and diversity. It could also mean accepting shortage and hunger and re-learning the skills of compassion needed to respond. Rose Lyimo, one of the older members of the Tanzanian team, told me that mothers around Mount Kilimanjaro used to boil stones during a famine to persuade their children to sleep. As the stones bubbled on the fire, the mother would poke them from time to time, pretending they were potatoes:

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228 Richard Krause was testifying to the American Congress's House Appropriations Committee in 1982 as the director of the National Institute of Allergy and Infectious Diseases. He tells the story of his testimony in the Foreward to Emerging Viruses, edited by Stephen S. Morse, Oxford University Press, 1993.
“Ah!” she would say, “They are not quite done! Just wait a little longer ...” As they waited for their supper, the children would fall asleep, comforted by the promise of food. In my own family, I have watched my mother sleep more and more as her life fades away. One day I asked her whether she could feel it if I held her hand while she was sleeping. “A bit,” she said cautiously. “Would it be comforting?” I asked. “Oh, yes,” she replied.

This is all part of what it means to live ecologically: it means doing without and recognising that crises and death are normal. It also means – as with the AIDS epidemic in South Africa – that compassion is survival. The person you help today, may be the one who helps you tomorrow. That is why the women in Dakar shared their food with me. “La vie est très longue et le monde est très petit,” they said; life is long and the world is very small. Living ecologically also means understanding the disciplines of restraint, enjoying the bounties of abundance only when they are genuinely there – like the Indians’ harvest of spawning fish in New England. A friend of my grandmother’s once said she wanted to be rich enough to buy clothes in season and fruit and vegetables out of season. Now, as I learn to live ecologically, I find myself buying the fruits and vegetables of each local season, rather than rushing towards the exotics at any time of the year.

Living ecologically also means living in four dimensions: we cannot simply be bookish people, relating to the wider world through papers, films and screens. When reading, writing and arithmetic became the core skills of popular education, most people still lived on the land and already had a wide variety of practical skills. Today, industrial society has taken over the production of three-dimensional things, leaving most of us alone with the abstraction of our books and papers and electronic screens. This is not enough for learning to live ecologically; we also need the intelligence of our hands. We need to touch the world we live in, to walk around with the uneven shape of the earth beneath our feet, we need to smell the decay of leaf mould and of new blossoms in the rain, we need to understand soil’s grit in our fingers and be able to identify the songs of the birds.

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When my brothers and I took our small green metal lunch boxes into the woods, we entered the school of our ecological education. We were training our hands and limbs to walk in the woods as our eyes and ears learned to observe. We wanted to know the woods as intimately as we knew the rooms of our grandparents’ Country House. Today, those of us in urban, industrialised societies need to learn again how to live in the natural world, while those in rural societies need to see their unwritten knowledge is given the same value as the books of the modern age. As I tend my window boxes and plant tubs in Central London, I put the soil under my fingers again, learning how different plants respond to different types of light, water and soil. It is an active attempt to unite book learning with the unwritten intelligence of eyes, ears and hands, my own practical experiments in an ecological age.

Forty years ago, in Roxbury, we climbed around, but did not understand, the overgrown stone walls of an earlier age. These walls – like the ancestors of Africa – remind us that it is not enough to know a landscape in just one moment of time. Landscapes are older than all of us; they live and die and are reborn over much longer spans of time. Anyone who has known a landscape for more than ten years will know what this means. When I was growing up on Manhasset Bay, a friend and I took a rowboat out and sailed it down the bay with a beach umbrella. As any sailor will tell you, beach umbrellas are no use for sailing into the wind. Stranded downwind with an oar-less rowboat and a now useless umbrella, we walked our boat back through the shallows of low tide. To this day, I can feel the mud beneath our feet, slimy and dead, killed by pollutants coming into the bay. There were no tiny spigots of clams, no wading birds feeding on minnows, just a muddy slime. Forty years later, the birds are back, the minnows are back and the blue fish are running thanks to the Clean Water Act passed thirty years ago. At that time, in 1972, we could not imagine how much life would return to Manhasset Bay, yet this one law has revitalised the waters. It demonstrates that living ecologically means doing things now without expecting to enjoy the return; it means planting trees knowing you will never see them mature.

230 See http://www.epa.gov/region5/water/cwa.htm
For biologists, the great Holy Grail is the diversity of life. Each extinction is a cause of mourning; it is another broken thread of the spider’s web, another torn strand of the *Utu Net*. How many threads of the web of life can be broken before we are no longer supported? How much of the *Utu Net* can unravel before we fall to the ground, unable to rise? Several economists I know have said, “What difference does it make if we lose a few species?” I don’t know. I know that when I am stitching a needlepoint tapestry, I want the whole canvas to be covered. If one thread is missing, I have not done my job. The tapestry will wear out more quickly, the pattern will be broken and I will regret my own careless sewing.

The holy grail of diversity explains my fascination with the possibility that the property rights of living ecologically will have more in common with the mosaic rights of pre-industrial peoples than with the column rights of the industrial age. One day, I would like to invent a market that rewards people for keeping a species alive, rather than rewarding them for its demise. Today, for example, people are paid to cut down trees. Can we find a way to reward them for leaving a forest standing? Mosaic rights might help here. Imagine holding the rights to something like the swift, a bird which flies between England and Africa each year. In my imaginary market, those people who held rights in the swift would not earn a good living if the populations of swifts fell too far; they would only be paid well if the swifts survived to breed next year. Other people might hold rights in toads, spiders, elephants or even mosquitoes. Some of these rights might not be held by individuals, but by communities who earn their livings by protecting an entire habitat and everything that thrives in it. By protecting the habitat, the people of the community would learn to live ecologically in their own neighbourhood – a neighbourhood populated with every form of life the local habitat could sustain.

All this is just a daydream, but just as new rights were needed to develop the industrial system, so too will a new system of rights one day lead to an economy that rewards mankind for keeping the diversity of life alive. That economy will adapt some of the tools of the industrial age. New statistics will measure new goals and new market mechanisms will distribute the incentives and rewards. The Global Reporting Initiative, for example, is currently developing...
new statistics and may be another foundation of the ecological age. Reporting alone will not suffice, however. If markets are to learn how to support ecosystems, they will also need new regulators, such as biologists, ornithologists and those who love the macro-invertebrates of rivers and streams. It is also certain that any new markets – like our social systems today – will need a way to resolve disputes over rights and rewards while learning to apply new penalties for new wrongs.

So how will disputes be resolved in the ecological age? This is where the lessons of the Makua political economy become important. I see our leaders taking responsibility not just for the health of their human populations, but also for the health of the land. As Dr. Wembah-Rashid said in Mtwara “... the land must be kept alive for people to live. If the land is sickly, people are sickly.” Leaders, however, will need to be accountable and here I can imagine a court of ecological accountability. I see this as a hybrid institution combining the structural role of Africa’s spirit advisors with the power of the British House of Lords or the American Supreme Court. This court would be supported by similar courts at relevant eco-scales – a court for the local woods, a watershed, or the atmosphere of the planet itself. Such courts are important because we do not know what we are doing. We will often be faced with questions of judgement where we cannot know the right answer right away. We will need a way to learn from experience, to build on case law that helps us understand what succeeded before and what might succeed again. We need a place where the laws of nature and the laws of man can be finely debated and imperfectly grasped, but always aired publicly so we can all learn to find our way.

In all of this, what might be the political boundaries of the ecological age? Here I imagine living in Mme Dugast’s map. Others may dream of world governance; I dream of tribes, of neighbourhoods connected by footpaths, where we link with others at different scales through a nervous system of mutual review rather than the dictats of central control. Ecosystems are complex; human societies are also complex. When both are together, their complexity is greater than anyone can grasp except on a very immediate scale. That is why ecological living may mean a closer

231 See http://www.globalreporting.org/
personal relationship to smaller physical territories, where each of us bears some responsibility for the environment in which we live.

There is another reason for dreaming of tribes at a time of systemic change: small units of responsibility will multiply the experiments we try; with each experiment we will learn something new, while the accumulation of knowledge will help us all. As we imitate each other, we will build useful redundancy into the larger system while finding multiple ways of accomplishing the same ends. All this will increase our ability to adapt and change. Eventually, I can imagine such ecological neighbourhoods will restore to each of us a sense of place based on our personal relationships to each other and to the land. As this deep knowledge grows, we will protect our surroundings and strengthen social trust, creating the skills of diverse neighbourhoods while increasing the resilience of our world as a whole.

No one knows what will happen next. In my lifetime, I have watched our populations and economies grow, creating bigger institutions, bigger markets and bigger volumes of trade. In the process, we have accelerated our damage to the natural world and increased our exposure to the extreme crises of systemic failure. Yet, as the damage has grown, I have also seen the seeds of invention germinating on the margins. They have appeared in small places, among once conquered peoples or in passionate individuals with a different ideal, or in groups who trust each other as they try something new. I do not know how the tension between the efficiency of today’s large institutions and the inventiveness of the small scale will play out in the coming decades. It is likely – inevitable, perhaps – that accident and extremity will play their role. It is my hope, however, that in meeting the challenges of ecological invention, we transform ourselves from a hungry and invasive species to more modest mitochondria metabolising life throughout the whole world.

**Moving On**

As for me, it is time to move on. I want to take what I have learned here and make it come alive in new experiments that reach towards an ecological age. I do not know what those experiments
will be. I do know that while my life may seem exceptional to many, each step has started with what was there and what was needed. Since becoming independent, my work has followed an unpredictable path created as each new assignment came through the door. During this time, the basic principles of ecological thinking have been accumulating at the back of my mind, but usually been neglected in the work I do – they have not fit into society today. Now it is time to ask where and how those principles can squeeze in again.

A more important thing to do has already begun in my London neighbourhood. After fifteen years of urban anonymity, I have stopped to chat and share news with my neighbours. This began when several of us organised a picnic in the square. We provided tables, plates, cups and cutlery, then invited our neighbours to bring food and drinks to share. Over the past three years, in the centre of a vast city, we have been getting to know each other as villagers with common concerns. Like my professional life, I do not know where this will lead. But the square was there, and what we needed was a picnic. All the rest is yet to come.

Many people today are uneasy, sensing that fundamental things have to change. Many of us are afraid of what we might lose, of people who will oppose us or judge us as too extreme. Above all, faced with a task that is both complex and necessary, many of us do not know where to begin. However, we can all start noticing the natural world around us and begin to learn basic ecological ideas. We can share our thinking in the contemporary neighbourhoods of our complex lives. Then, if each of us, one by one and in the company of our neighbours, begins with what is around us and what is needed, we can invent the experiments of systemic change. As that happens, our unspoken fears will become the energy of creation, drawing on and renewing the abundance of life that has – so far – sustained us all.
Appendix

Outline of Main Arguments

For some, the personal story in this book has obscured the main arguments about the process of inventing ecological societies. This outline therefore describes the key points from each chapter.

Preface & Introduction

Our human institutions have evolved slowly over the past one thousand years, but the past fifty years have seen our demands on the natural world accelerate dramatically. The combination of rapidly building ecological pressures and slowly evolving human institutions creates an unprecedented challenge. One way or another, we are being forced to learn how to live symbiotically with natural systems we cannot control. No one knows how that will be done. Instead, we are feeling our way. We are “crossing the river by feeling for stones.” The introduction presents the scale of this task, comparable to inventing the industrial revolution, while the Preface introduces the style of the book. It is a style based on open questions and vivid images to help us grasp the interlocking origins of learning and invention.

Ch. 1: Generation & regeneration in the Roxbury Woods

The first chapter is a memoir of childhood in the Connecticut woods of North America during the 1950s and 1960s. It illustrates how a landscape changes over time and poses the question: how did we get here and what might be our way out? It also offers a simple image of generation and regeneration in the landscapes around us, an image that defines the underlying hope of the book.

Ch. 2: Conquest & invention as glimpsed in the Sahel

Chapter 2 describes the author’s 1976 journey across the West African Sahel. Three important questions arise here: How does any society live with the landscape it inhabits? How might we outgrow our histories of slavery and colonialism? How do societies invent new rules to govern themselves? These questions are provoked by observing an African society conquered by Europeans. The chapter illustrates how conquest and colonisation invented new rules and changed everyone’s relationship to the land.
Ch. 3: Accident & necessity from beside a coal fire

As the author moves to Central London to start a PhD, this chapter explores the origins of social invention in pre-industrial England. It draws a parallel between today’s situation and the expansion of England’s population between 1100-1300. The Black Death of 1348, when a third of the population died in two years, is described as an environmental crisis following the growth of trade and the settlement of woodlands and wastes. While the population eventually recovered, the woodlands did not, stimulating a need to find new land and fuel in 17th century England. These necessities created new property rights, increased the use of coal, and encouraged migration to North America. All three stories are told here. The chapter concludes with the observation that abundant resources in North America combined with the accident of abundant British coal, encouraged the idea that economic growth could be maintained perpetually. This myth has now spread around the world – an English accident that is now a global ambition.

Ch. 4: Memory & survival ➔ the future from Mt. Cameroon

Chapter 4 follows the author as she journeys to Cameroon for her PhD fieldwork in 1982. A story of the Cameroon Mountain Race that year leads to the suggestion that the European colonisation of Cameroon interrupted another kind of social evolution, one based on the networked governance of small societies, rather than nation states. This networked system may have created the ecological resilience and biological abundance of Africa before Europeans arrived. Such small societies could live intimately with the complexity of the local natural world while collaborating with each other at a larger scale. Perhaps, it is suggested, ecological societies of the future will resemble African societies of the past. People who still understand this older African system could help all of us recover from future environmental crises – if we can learn to listen to what they know.

Ch. 5: Personal capacities create two curves of change

Chapter 5 opens with the author’s 1984 search for work and her first assignment in Royal Dutch Shell. Many of her colleagues assumed that when agricultural societies industrialise they must first grow economically before improving health and education for the whole population. Chapter 5 turns this premise on its head. It demonstrates
that, in the past forty years, the creation of better health and education among the whole population often preceded rapid economic growth. Improved personal capacities – the ability of every individual to read, write and enjoy better health – encouraged social innovation and economic expansion. The relationship of social and economic development in the transition to industrial societies is described as a double-S curve. Chapter 5 argues that a similar double-S curve will shape the evolution of ecological societies, but wonders what new social foundations will be required.

Ch. 6: Darwin’s face - disease, rebellion & neighbourliness

In 1987, the author began to develop her own independent practice in long-range planning, working from Clerkenwell in central London. In this neighbourhood she discovered evidence of investment in better health and education during pre-industrial times. Was this pattern in early England the same as that of the late 20th century? Not entirely: while English literacy increased from the twelfth century, life expectation did not. Instead, disease was an autonomous force, linked to both rebellion and neighbourliness in English society. This neighbourliness became a major source of social invention as it enabled people of different skills, classes and knowledge to work together on local needs. However, new concepts were needed before neighbourliness became invention. While Newton’s mechanical philosophy was the new concept of its day, the principles of ecology are an important new framework for the 21st century. The author’s own experience of the HIV/AIDS epidemic in Southern Africa shows how disease is once again forcing us to accept our place in nature while also teaching us the value of neighbourly engagement.

Ch. 7: Nature’s voice, respect & the politics of invention

During the late 1990s, the author was living on three continents, with work in East Africa, her home in Central London, and family in New York. Chapter 7 explores the politics of invention in all three places while also looking for the voice of nature in political affairs. The chapter describes the political foundations of the English industrial revolution which were in place by the end of the English Civil War. This leads to the arrival of the author’s English ancestor in 17th century New England when the English colonists destroyed the society and knowledge of Native Americans while creating the property rules of today’s global system. In Africa, by comparison, considerable indigenous knowledge
still survives. The author describes looking for “nature’s voice” in the rural societies of Tanzania, where the natural world has had a central and powerful role. She also identifies in early Africa and New England a different concept of property rights – described as “mosaic rights” – which could shape ecological economies today. All three examples: England, New England and East Africa are histories of conquest, survival and renegotiation. In this chapter, the possibility of agreeing new rules between conquered and conquering peoples becomes a potent source of systemic invention.

**Ch. 8: Symbiosis & survival – generation and regeneration**

The final chapter recaps three important themes that emerge in this book. The first theme is the roots of social invention in neighbourly experiments, necessity and learning. The second theme builds on the experience of conquest and survival as another source of innovation. However, we are reminded that new relationships and new rules often can only be negotiated after some extremity – like the Black Death – has altered existing relationships of power. The third theme looks at what it might mean to live ecologically and draws on the lessons of mosaic societies where resilience in the face of extremity has been as important a goal for society as increasing production. The book ends by imagining the human race becoming modest mitochondria in the guts of the world, sustaining all life so that all of life can sustain us.
Barbara Heinzen is a respected leader in long-term strategy and scenario planning with a successful twenty-five year practice working with corporations, government departments and voluntary organisations in Asia, Africa, Latin American and Europe. She is a specialist in the strategic implications of investing in non-Western cultures with different business systems, able to link social and environmental issues to organisational opportunities and operations. Born in Kansas and raised in New York, she has been living in central London since 1981.