

Also by Paul Collier

Wars, Guns, and Votes: Democracy in Dangerous Places

*The Bottom Billion: Why the Poorest Countries Are Failing and What Can
Be Done About It*

The Plundered Planet

*Why We Must—and How We Can—
Manage Nature for Global Prosperity*

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CHAPTER 2

Is Nature Priceless?

THE INDIGNANT TEARS OF A CHILD command attention. Daniel, aged eight, has just learned about the Brazilian rain forest and it has moved him to his first expression of political outrage. It is directed at me, not as his father, but as representative of the generation of adults who are destroying something precious before he reaches the age at which he can stop us. Through sobs and rage he shouts, "Tell the president!" Having seen me on television, Daniel has a somewhat inflated impression of my influence. Eight-year-olds are not, on the whole, always repositories of good sense, and Daniel is no exception. But by chance his anger is right on target: son and father are ethically aligned in the battleground of natural assets.

First, the left flank. I agree with environmentalists that nature is special: at some level most of us recognize that. But why is it special? Mainstream environmentalists, such as Stewart Brand, offer one answer. Nature is especially vulnerable and that matters because, being dependent upon it, mankind is thereby vulnerable. But as

Brand argues, many environmentalists are carrying ideological baggage that needs to be discarded. For romantic environmentalists nature is incommensurate with the mundane business of the economy: it is in some way ethically prior. Echoing Baron d'Holbach's diagnosis of modern angst, they see industrial capitalism as having divorced us from the natural world which it is rapidly destroying. You can sense their discomfort with modern industrial society in the language that they use, replete with words such as "organic" and "holistic." For a recent variation on the theme of Holbach, watch Prince Charles delivering the BBC's 2009 distinguished Dingleby Lecture.

Perhaps man needs to return to a simpler, nonindustrial lifestyle. Prince Charles produces organic food, and he has created a village, Poundbury, in the style of the eighteenth century—the last age prior to industrialization. At the extreme end of romantic environmentalism the diagnosis is more radical: mankind itself has become the enemy of what is truly good. Reflecting these sentiments, there is now a considerable cult that relishes the prospect of the extinction of mankind. Only then can nature be restored. Portrayals of earth after man attract huge audiences. The romantic wing of environmentalists appears prepared to sacrifice industrial society in order to *preserve* nature; the extreme appears willing to sacrifice the human race.

Who Owns Nature?

I doubt whether Daniel is a romantic environmentalist. The source of his outrage cannot plausibly be traced to his being ill-at-ease with modern industrial society. I wish he were a little less at ease with it, for the detritus is littered all around his room. Of course, he was worried about the rain forest because it is irreplaceable. But he

was angry because he felt that his rights of ownership were being infringed. Children have a keen sense of property ownership; they know what is theirs and they usually want to keep it that way. But why does Daniel feel that he has rights over the Brazilian rain forest? After all he has never even seen it. He makes no such claim on our neighbor's new car, which he sees every day and which contrasts so unfortunately with our own battered specimen. It is because the Brazilian rain forest is a special sort of asset: a natural asset. What is special about natural assets is their ownership. *Natural assets have no natural owners.* This proposition has far-reaching implications, such as for thinking about climate change. But first and foremost it places government at the center of the action.

All rights of ownership over assets are social constructs, but with man-made assets the initial rights of ownership follow directly from their making: the firm which makes the car initially owns it, although they can then sell it to me. Of course, since all property rights are social constructs we can and do set limits to ownership. Although the firm that builds a vehicle owns the vehicle, if it sells it at a profit then some of that profit belongs to the government. The idea that the creation of an asset should confer rights of ownership makes a lot of sense both ethically and practically. Ethically, the creator has expended effort and value in creating the asset. Practically, if newly created assets were to be promptly confiscated by others, there would be no incentive to creating them. For these reasons vesting initial ownership rights in the creator of the asset is supported virtually across the political spectrum, with the exception of primitive communists.

So much for created assets. Natural assets are different. By definition, they are not man-made. Some people think that they were created by God, others by chance. Either way, their process of creation did not give any steer as to who should own them.

Recalling that natural substances only acquire value as a result of technological discoveries, should the discoverers of the technology have a claim on the resulting natural assets? Should Nokia, for example, the Finnish company that pioneered the mobile phone, be given the rights over African coltan? Should the world's automobile manufacturers own the world's oil? It hardly sounds like a reasonable ethical rallying cry. Natural assets simply do not have any natural owners and so societies are free to assign the rights any way they like. The process by which ownership rights over natural assets are acquired has potent economic implications both for the distribution of income, and for efficiency. Imagine a society in which government is absent. No authority would be able to construct and enforce property rights over natural assets.

In this society physical control of the asset is all that matters. This gives rise to three problems: mal-distribution, rent-seeking, and uncertainty. Mal-distribution comes about partly because the strong are advantaged over the weak, but it is compounded by chance: some territories are better endowed than others. If we imagine the population distinguished in the two dimensions of strength and luck, the natural assets are acquired disproportionately by those who are lucky and strong. "Rent-seeking" is the technical term for ways, including violence, to acquire ownership. Basic economics predicts that the value of natural assets, which technically are unearned "rents," will be matched by the efforts to "seek" those rents, so that the potential social value of natural assets will be dissipated by the costs incurred. In the absence of effective rules there will inevitably be uncertainty as to whether current control over a natural asset can be maintained. With control perceived as temporary, the private incentive is to deplete assets quickly even if this is socially more costly than necessary. As a result, those natural assets that are easy to find will rapidly be plundered. Americans know this

only too well: once the West started to be settled even at very low population densities, the immense herds of buffalo were rapidly hunted to the verge of extinction.

I saw another instance of plunder in 2008 as I clattered over the landscape of Hispaniola in a Russian helicopter. Hispaniola is the name that Columbus gave to the first island he discovered in the Americas. It is now divided down the middle into two countries, the Dominican Republic and Haiti. Whereas the Dominican Republic has been well-governed, Haiti has long been synonymous with weak and corrupt governance. Indeed, in rural areas the government presence is still minimal. The North coast of Haiti, over which I was flying, is a favored destination for cruise ships, but many tourists do not even realize that they are landing there: in the brochures it is still described as Hispaniola. I was there because Ban Ki-Moon, Secretary-General of the United Nations, had read *The Bottom Billion*. Recognizing that Haiti had many of the problems I had tried to analyze, he had sent me there in the hope that I might be of some use. Haiti once had a natural asset—its forest cover. But no longer. Flying over the landscape, I could see bare hills spread out beneath me; bare hills, more bare hills, and then quite abruptly, trees, trees, and more trees. The helicopter had crossed the border with the Dominican Republic. On the Haitian side of the border there is 2 percent tree cover, on the other side, 37 percent. Hispaniola is not a big island, and the explanation was not due to climate. Indeed, in the 1920s over 60 percent of Haiti had been covered in trees. The key difference was in governance: in the absence of secure property rights the trees of Haiti had been plundered.

Buffalos and trees are vulnerable because they are highly visible. Natural assets that are hidden suffer the opposite fate: they are ignored. Because discoveries cannot be protected there is no

incentive to undertake search. It is more efficient to wait for others to find natural assets and then wrest control away from them through superior strength. Hence, they remain undiscovered. In fact, since the process of losing control of a natural asset that you have found beneath where you live is likely to be nasty, there is even an incentive to avoid noticing what might be there.

Valuable natural assets, such as oil and metal ores, lie hidden beneath the ground until they are discovered. The term for them is "subsoil assets." In 2000 a global inventory of subsoil assets was pieced together by the World Bank. For each country the World Bank collected the data on discoveries, mineral by mineral. Angola, for example, had already discovered many millions of barrels of oil in its territory. The World Bank then multiplied the known reserves of each mineral by its world price and added them up into a valuation of each country's natural assets. Inevitably some countries were much more fortunate than others. Some, like Brunei and Kuwait had huge natural assets and very few people: the lucky citizens are natural millionaires. More generally, the snapshot shows that natural assets appear to be very unequally distributed around the world.

Luck clearly plays an important part. Tiny countries can find themselves either sitting atop of an oil well or completely empty-handed. But over a sufficiently large geographic area luck should tend to even out. Remember those four quadrants of the planet. By the time we have aggregated up to those vast quadrants it would be surprising if there were very large differences between them. Even if one natural asset tended to be clustered in a particular quadrant, we would expect that by the law of averages the other quadrants would be more fortunate with other natural assets. You would expect luck to even out, but it hasn't. While delving into that 2000 snapshot of natural assets, my colleague Anke Hoeffler and I stumbled across a

simple but profoundly important revelation. Before revealing what it was I want to stay with the opening of the American West.

When the West was opened up, government was pretty thin on the ground. The American government therefore chose a highly distinctive approach to the discovery of hidden assets. It can best be described as the rule of "finders-keepers." The government licensed plots to prospectors who then owned what they found.

The finders-keepers rule may in important respects be an improvement upon lawlessness, but it gives rise to needless inequality and is also likely to be inefficient. The implications for inequality are pretty clear. My wife's great-great-uncle struck gold and his descendants are still living well off it; other gold diggers died in the attempt. The value of the natural assets, or at least the excess of their value over the cost of mining them, is captured by prospectors instead of being spread more widely.

The inefficiency is more subtle. It arises because the chances of striking lucky on a plot are increased if neighboring plots have had lucky strikes. The most profitable strategy is to acquire as many plots as possible and leave them idle until someone else makes a discovery. Owners of plots that stand idle are free-riding on the efforts of others. This produces the economics of a gold rush. Whole territories may be neglected for many years, and then prospected in a surge following the first discovery. Both the period of neglect and the surge are inefficient. The period of neglect arises from a standard public goods problem: knowledge is a public good and so the outcome is a stalemate in which no one risks the costs of acquiring knowledge. Eventually, a lucky strike occurs and in response people crowd into search, lowering the chances of discovery for each other. Recall that dire prediction of basic economics: people will spend time and money in search so long as the expected returns exceed the costs of searching. As they crowd in, reducing each individual

chance of a discovery, most of this search is wasted activity. The total costs of the search approach the value of the resources to be extracted. The finders-keepers rule thus produces a long period during which private returns to search are below their social value, followed by a short period in which they exceed their social value.

To avoid the fate of the buffalo, or the inefficiency and inequality inherent in a gold rush, societies other than America have chosen to vest the initial ownership of natural assets collectively. The apex of collective action is government, and so governments decide the fate of natural assets. This makes them distinctive. The modern economics of production, as exemplified by a standard economics textbook, has little time for government. Output is generated by labor and capital, which is managed by firms. Government remains offstage because it is irrelevant to the analysis. In contrast, government is central to the effective management of natural assets.

Government is going to loom large, but what should it do? It has to manage natural assets because it cannot evade initial ownership. Although in this respect natural assets are distinctive, they are like other assets in two other respects: they can be depleted and their price is volatile. Managing the depletion and volatility of natural assets is not easy. The analogous decisions for financial assets support a huge industry from which New York and London derive much of their income. In contrast, although the management of natural assets pose at least as many complex problems, decisions lie not with an elite of experts (however much we may now doubt their credentials) but with governments, many of them the least competent governments on earth.

The social construction of rights over natural assets is inescapably a value-conferring activity and so it is liable to attract rent-seeking, or more colloquially, pork-barrel politics. This sort of politics can be so dysfunctional that a society ends up worse off than if it had

not attempted to manage its natural assets in the first place. The key question is how to avoid such politics.

Of course, in a democracy, the government is answerable to voters. However, in order to vote you have to be a citizen, and indeed an adult. With respect to having a say as to the fate of the Brazilian rain forest Daniel is doubly disenfranchised: he is the wrong nationality and the wrong age. While I don't think that Daniel should be given the vote in Brazil, I do see his point of view. Is the Brazilian rain forest owned by the current generation of Brazilian voters?

Posing it in that way muddles up two distinct issues: Brazilians versus the rest of us, and the current generation of adults versus the future. Both matter. Should Brazilian voters have power of decision over the rain forest? Potentially, the power of decision should be situated either higher up or lower down. It should be higher up—not limited simply to Brazil—if we think that the rain forest is valuable to the entire world. This was clearly what Daniel has in mind in feeling that his own rights are being infringed. But there are also passionate advocates of placing the power of decision lower down: the rain forest belongs to its local inhabitants who have collectively sustained it, and who depend upon it. So, where should rights be lodged: locally, nationally or globally? For this we need an ethical framework. As an economist I have been reared to use the ethical framework of Utilitarianism.

The Greatest Happiness of the Greatest Number

The big idea in Utilitarianism is that the benchmark for ethical action is to achieve "the greatest happiness of the greatest number." Modern economics is an immensely sophisticated edifice which has thoroughly chewed over the difficulties of how societies might best set their goals. But when economics is applied to practical

problems all this sophistication is set aside: we are trained simply to solve problems in which something has to be maximized. Utilitarianism lends itself to this approach: maximize the happiness of mankind. Applied to a problem such as how to assign the ownership of natural assets, Utilitarian economics simply adds up the happiness—or “utility”—of each individual. In order to sum these utilities it needs to make some assumptions. The big one is that each particular amount of income, say, \$4,000 per month, generates the same amount of “utility” for each individual, and that every extra dollar generates less utility than the previous dollar.

This ethical framework is actually pretty radical: for a given overall size of the cake, the ideal distribution of the slices would be complete and universal equality. That would achieve the “greatest happiness of the greatest number,” or “maximize the sum of utilities” as an economist would express it. This is because the last dollar spent by a rich person generates less utility than the last dollar generated by a poorer person. Peter Singer, the eminent Utilitarian philosopher, brilliantly sets out its implications for charity in his recent book, *The Life You Can Save*. How can you justify spending your money on yourself when you could spend it on others who would get so much more utility from it? Utilitarianism underlies redistributive taxation: income tax should be as high as possible subject only to its disincentive effect which makes the cake smaller. The ethical drivers are universalism and need, albeit tempered by practical constraints.

For choices in the exploitation of natural assets, such as the rain forest and oil, and natural liabilities such as carbon, the key distributional issues are inter-generational. The Utilitarian economist applies exactly the same ethical norms of universalism and need when deciding between the present generation and future generations. People as yet unborn count for the same as people alive today, however far in the future they might live. They don't have a vote, but to the

Utilitarian that is just a design flaw in democracy. Future people only count for less to the extent that they are going to be richer than we are in which case giving more money to them is not such a good idea. The actual balance between saving for the future and consuming nature now depends upon trading off the fact that money saved grows to be worth more in the future, against the fact that in the future extra consumption will generate less utility. The Utilitarian would say precisely the same about any temporary influx of money, whether it derived from the exploitation of natural assets or, for example, foreign aid.

To be fair to Utilitarian economists, there is one further reason why they would accept that those future people should count for less than us: they might not exist. A meteor might hit the Earth and do to us what one did to the dinosaurs. That beckoning extinction is factored into the calculations of Utilitarian economists working on climate change: if the future might not exist then this reduces the value of transferring happiness to future generations.

In some respects Utilitarianism as applied by economists is a noble vision. Basing decisions on universalism and need is certainly equitable. But it faces two overwhelming drawbacks. It is radically at variance with the ethics that prevail in most societies and so stands no chance of being their democratic choice. Further, it brooks no scope for variation. The same ethical code applies everywhere and always. If you are starting to get the feeling that economic Utilitarianism is best suited for Disneyland, I am inclined to agree. I have come to believe that it is an inappropriate framework for thinking about natural assets and liabilities.

The Ethics of Custody

There is an alternative. The environmental movement has recognized that ordinary people are willing to accept obligations

concerning the natural world. This is not because they can be persuaded of the virtues of economic Utilitarianism. They are guided by ethical codes that are both richer and more varied than Utilitarianism allows for, and within those various ethical codes most people recognize nature as special. Their attitudes to nature can be common even if their overall ethics are diverse. The attempt to impose a common Utilitarian ethics across societies with radically different values is unlikely to be successful. Fortunately, it is also unnecessary.

In popular ethics the enemy of the Utilitarian principle of universalism is *propinquity*. This is a quaint way of saying that people who are closer to you matter to you more: family and friends matter more than people you have never met. This is a notion that most modern economists reject. Yet even the founding philosopher of Utilitarianism, Jeremy Bentham, accepted that propinquity was a legitimate sentiment. He recognized that propinquity applied between time periods as well as within a time period. As surveys confirm, we simply do not care for people who will live in the future as much as we care for ourselves. The more distant the future, the weaker are our sympathies with it.

It is easy to understand why we evolved with an instinct for propinquity. In all sorts of situations our chances for survival increase if we help our family and neighbors. Should we regard it as some psychological flaw in our make-up? Should we aspire to be angels, caring about everyone equally? Nicholas Stern, who has pioneered much of the economic analysis of climate change, accepts that sentiments of propinquity were evolved because they were functional. He also argues that this was because historically our needs were purely local. The new environmental challenges are global and so our evolved instincts are indeed inadequate for the global cooperation that is now necessary.

But understanding why sentiments of propinquity arose does not provide economists or governments with a license to override them. They are now hardwired into what it means to be a human being. Economic Utilitarianism is, in fact, much better suited to a population of ants than to a population of people. Ants are entirely willing to sacrifice themselves individually for the collective good. That is how they evolved. But it is really no good wishing that humans fit the economic model as well as ants. We simply have to accept the crooked timber of humanity for what it is.

One institution towers over the struggle between the competing claims of universalism and propinquity: the nation state. A nation provides people with a common identity, an imagined community, and within it to varying degrees the state implements universalism. Beyond the frontiers of the nation propinquity dominates. The most dramatic demonstration of how abrupt the transition between rival ethical values can be is Europe. Famously, European nations accept by far the highest levels of internal redistributive taxation found in the world: around 40 percent of income is taxed. Further, for the past fifty years most of its nations have been bound together in a Union which has the power to tax and redistribute. Yet, although income levels vary considerably between the nations within the Community, redistribution of income between member states is negligible. The pan-European tax rate is merely 1 percent of income, and virtually all of this is redistributed within the country which has originally paid the taxes. Indeed, this became an ethical sticking point for British membership of the Community: beyond a low threshold, the taxes that Britain pays to the Community can be used only for payments back to Britain. Hence, even the passage from the nation to the pooled sovereignty among the democracies of the European Union takes us beyond the domain in which

the Utilitarian principle of universalism is regarded as acceptable. Propinquity abounds in the European Community.

In popular ethics the enemy of the Utilitarian principle of need, however, is not propinquity but the right of *possession*. In 2009 the Rowntree Foundation, a Quaker charity with a long record of insightful social inquiry, surveyed British attitudes to inequality. It was astonished by what it found. In essence, ordinary people did not perceive that inequality was necessarily unfair. Those poor people who had been unlucky were indeed deserving of help from those who had been lucky. But those who had been feckless were not deserving of help from those who had been prudent. People who had worked hard and been prudent were entitled to enjoy what they earned. Economic Utilitarianism is willing to go along with this as a practical necessity. Were people not allowed to keep the fruits of their work, they would not go to the trouble of earning it. However, according to popular ethics it is more than that: effort confers rights of possession.

If natural assets have no natural owners, our rights of possession over them are much weaker than our rights over man-made assets. Man-made assets are the product of our creativity, and this confers powerful rights of ownership. What I have created I am free to give and to sell. Initial acts of creation are the basis of most property rights. Even within nations the Utilitarian principle of universalism can co-exist with the right of possession conferred by creativity, though the balance might vary. Almost all nations have redistributive taxation but individual tax rates are tempered not just by practical but by ethical considerations. But natural assets are not the result of creativity. In the absence of rights of possession stemming from creativity, who should benefit from natural assets? The Utilitarian principles of universalism and need suggest that everyone should do so. Those principles face only the counter-principle of propinquity: whoever is closest to the natural asset should benefit.

But the tug of propinquity is not like the tug of gravity, diminishing steadily mile-by-mile according to distance. The shared identity of a nation and the organizational capabilities of the state create a towering cliff. Usually they are sufficiently strong to overcome differential propinquity within its boundaries: the state enforces a universal ownership of natural assets. Only at the border does propinquity prevail: people from other nations have no claim on those natural assets.

Here, the sentiment of propinquity is compounded by the absence of an institution equivalent to the state which could enforce the redistribution of natural assets between nations. This limitation on universalism increases inequality. For example, because Africa is split up into so many nations, and the ownership rights over natural assets are accorded to nations, their per capita distribution is inevitably highly unequal. Citizens of Equatorial Guinea have radically more natural assets than citizens of Ethiopia despite the fact that both are African. Nonetheless we should be thankful that nations are there to counter yet narrower claims of propinquity. Were sub-national groups to acquire ownership by virtue of their proximity to natural assets distribution will be even more unequal. For example, the tiny island nation of São Tomé and Príncipe, located in the Gulf of Guinea off the western equatorial coast of Africa, has recently discovered oil, which benefits the 100,000 Africans who are its citizens. However, the oil is closer to Príncipe than to São Tomé, and, predictably, its 8,000 inhabitants have claimed the ownership.

If you think that the inhabitants of Príncipe are a little selfish, it gets worse: as valuable natural assets are discovered borders start to change. The tug-of-war between propinquity and universalism is currently being played out in the Arctic. Geologists now suspect that there may be 90 billion barrels of oil beneath the icecap: who should own it? One sure sign of greedy opportunism is when the discovery of valuable natural resources leads to a demand to change

borders. The Arctic is currently international territory, but following the discovery the nations bordering on the Arctic have started to assert their claims.

Where propinquity rules claims need not stop at the national level: greed drives a localization of identity. Sure enough, Greenland, which is a territory of Denmark, is now asserting a greater degree of independence. The claims of propinquity go further still: the Inuit, whose homeland stretches from the northeastern tip of Russia and across Alaska, northern Canada, and into Greenland, claim rights to the oil beneath their kayaks.

Until the discovery of oil off the coast of Scotland in the mid-1960s the Scottish Nationalist Party had only negligible support for its goal of secession from the rest of Britain. When the oil price leapt in 1973 the vote for the party promptly soared: by the following year it was commanding 30 percent of the Scottish vote. But as the oil price came back down, support faded: by the late 1990s with the price down to \$10 a barrel the SNP appeared a spent force. It was saved by the global commodity boom: in 2007, with the oil price heading toward \$100, the SNP achieved its big breakthrough, becoming the largest party in Scotland. The Welsh National Party tried to do the same thing with rainwater, but as any tourist knows, Britain is not short of rain.

While I believe that national rights should be respected, there is a sharp distinction to be made between the borders of nations defined by history and those defined by greedy grasping of natural assets. The natural assets that lie beyond a nation's historic borders should not belong to its citizens any more than paddling a canoe above an oilfield should confer rights over the oil beneath. Although most of the planet's natural assets are located within national borders, those that are in international territory should remain international: they belong to all of us.

Propinquity and practicality ally to warrant nations appropriating the natural assets within their borders, but there is no equivalent ethical maneuver that will permit the present to appropriate them from the future. Natural assets have a unique physical location: if they are in my country they are not in yours. But by virtue of being assets they do not have a unique temporal location. As we wave gleefully across the national boundary we can shout to our neighbors without a sense of guilt, "these are ours, not yours." But we cannot, without guilt, leave a message to the future, saying in effect "they were ours, not yours." There is no inter-temporal equivalent to the national border that distinguishes one society from another. Individually there is admittedly an (unfortunate) inter-temporal boundary between life and death, but that is individual: we are not all going to die at once. Natural assets are owned collectively by the society, and the society rolls on and on.

We have arrived at an ethics of nature in which plunder can take two distinct forms. In one, natural assets that should belong to all the citizens of a nation are expropriated by the few for their private benefit. In the other, natural assets that should belong to all generations are expropriated by those citizens currently alive for their own benefit.

Individual people, and indeed whole societies, can differ radically on wider ethical issues: the importance of propinquity versus universalism; need versus the rights of possession. These differences essentially concern how societies allocate their created assets. But they can all recognize these two forms of plunder as unethical. Usually, national identity is sufficiently strong for the natural assets within the nation to be held in common. What is held in common is not a right of ownership but a right of custody, however. We have no more right to enjoy these assets than the future generations of the nation. If we use up a natural asset we must provide those future generations with compensation.

The Middle East has a culture and ethical values quite different from the Western tradition, yet it recognizes that natural assets should be held in custody. Three decades ago Kuwait had the natural asset of oil and pretty much nothing else. That generation of Kuwaitis took the view that they were not at liberty to use oil revenues only for consumption. Instead, they created a financial fund for future generations. Future Kuwaitis will no longer have oil, but they will have other assets. In the radically different culture of Zambia the depleted copper is not matched by any assets accumulated for future generations. But this does not reflect a difference in the ethics of nature: as a Zambian friend expressed it, "When the copper has run out, what will our children say about us?"

To sum up, we do not have an obligation to preserve every natural asset, but nor are we at liberty to plunder natural wealth without regard for the future. We have an ethical responsibility to bequeath to unborn generations either the natural assets bequeathed to us, or other assets of equivalent value. Our ethical responsibilities for natural assets are thus fundamentally economic: nature is a valuable asset. Natural assets are special, but not so special that they cannot be used. We are free to use them. If we do so without leaving equivalent value, however, we are guilty of plunder. The obligation of custody is not grounded in some complicated Utilitarian calculation of how utility might be maximized. It is grounded in our recognition of the rights of others.

Custody is not as restrictive as preservation. The romantic wing of environmentalism sees nature as so special that we are merely its curators, and here I part company. Biodiversity is a good thing, but within the context of our survival, not as an end in itself. We are not here to serve nature; nature is here to serve us. In case this sounds excessively materialist, I think that Christian thinking comes to much the same conclusion through the concept of stewardship. Mankind has "dominion" over the natural world: it is there for us to make

something of it, not merely to preserve it in aspic. One of the parables of Jesus, told in Luke, is of the nobleman who goes away, leaving money with each of his servants. One merely preserves the money, literally wrapping it up in a napkin. Upon the nobleman's return he is chastised. The ones who are praised are those who put the money to good use. We can do the same with nature. Most especially we can use nature to transform the plight of the bottom billion.

I share with environmentalists a less pessimistic view of human nature than is routine among economists. Economic models typically characterize people as selfish and greedy. Polarized between an ethical framework in which people ought to behave like saints, and a view of human nature in which they actually behave more like psychopaths, economists are often unenthusiastic about democracy. They prefer an authoritarian government that tells people what to do, and takes its advice from economists. Whereas economists rely upon technical briefings with the right government officials, environmentalists have periodically mobilized ordinary citizens into mass action before which governments and companies have quaked. It is not necessary for ordinary people to adopt the ethics of saintly ants in order for them to want their governments to be custodians of nature rather than plunderers.

Should Brazilian Voters Rule the Rain Forest?

What does this imply about the present generation of Brazilian voters? In a true democracy the government must be accountable to the electorate and each eligible citizen has one vote. Future generations do not and indeed cannot have votes. But Brazilian voters should recognize their ethical obligations to future Brazilians. They are not at liberty to cut the rain forest without leaving an equivalent asset for future generations. If they neglect this responsibility they can indeed legitimately be pilloried for plundering the natural world.

This is not the end of the ethical responsibilities of Brazilian voters. I have been dismissive of Inuit claims over the oil beneath the icecap, but I am not dismissive of the interests of the inhabitants of the rain forest. The rain forest is their habitat, and has only come down to us because they have not plundered it. If it is felled, their entire culture will disappear. Felling it might benefit other Brazilians, but it is liable to be quite dramatically at their expense. While they should not have the rights to oil beneath the forest, as a community they surely have rights of ownership to the forest which is their home. I do not mean that the communities of the rain forest should necessarily be preserved in perpetuity. This would be to condemn these peoples never to integrate with the rest of mankind—to treat them as anthropological curiosities. But the confrontation between the dwellers of the rain forest and modernity is acutely difficult, to be handled gradually and carefully: the history of such encounters abounds in tragedy. I suspect that over time the forest dwellers will vote with their feet to be part of Brazilian society, just as the last Aborigines have now chosen to leave the isolation of the Australian bush. But forced expulsion through the elimination of their habitat is ethically wrong. Although many of the beneficiaries of the felling of the rain forest have been poor Brazilians in need of land, hence justified on the Utilitarian calculus of need, the redistribution from forest dwellers infringes their rights of possession.

Brazilian voters have one further ethical responsibility, as the forest is felled and burned carbon is emitted. While the revenues from the felled wood and cleared land accrue now to Brazil, future generations inherit this liability. So, even if the current generation of Brazilians leaves adequate replacement assets for future Brazilian citizens, they are guilty of plundering the citizens of the rest of the world to benefit their own nationals. Environmentalists around the world are right to be concerned, and Daniel had good reason to be angry.

PART II

Nature as Asset