The Ethics of Climate Change

Right and Wrong in a Warming World

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No snowflake in an avalanche ever feels responsible.

Voltaire

Here are some easy ones for you. Suppose I creep into an antiques shop, covet a fine vase and shoplift it. Just given that information you can come to the nearly instantaneous conclusion that what I did was wrong. Now suppose that I go into the shop, get into an argument with the shopkeeper, and smash the vase to spite him. Again, you probably think what I did was wrong. Imagine now that I'm in the same shop, but this time I'm quite drunk, and I stagger into the vase, smashing it to the ground. There's a wrong in here somewhere – maybe the wrongness isn't just in the smashing of the vase, which is nearer an accident now, but closer to my letting myself get so helplessly drunk in the first place. Suppose now that I steal the vase, but you discover that I'm doing so because an art collector has kidnapped my elderly aunt, promising to dispatch her unless I deliver the vase. Clearly the collector is wrong, but maybe you are willing to let me off in this instance. Or suppose I smash the vase, but you learn that I've just received some horrible news and I'm not quite myself. Perhaps I've just discovered that the shopkeeper has been spreading vile rumours about me, rumours that have ruined my life. What if I received a knock on the head just before walking into the shop, and I now suffer from some sort of brain injury which explains my erratic behaviour? The situation is less clear in these last few examples, but you know how to start thinking about them.

In all of these cases, you know what matters and what doesn't when it comes to the moral evaluation of action. If you don't know immediately who did wrong and why, as well as what ought to be done about it, you know where to look for clarification.

Now try this one. Suppose that many millions of people use electricity to heat and cool their homes, watch television, read by bedside lights at night before falling asleep, and have hot showers and toast in the morning. They drive to work. Once a year they fly to the beach for a well-deserved weekend break, and maybe the food they eat at the beachside bar has travelled even further than they have, although they've never heard of food miles. Fossil fuels are burned in order to create the energy which drives all of these activities. This puts greenhouse gases into the atmosphere, and those gases contribute to the warming of the planet. The warming raises the sea level several thousand miles away from the televisions and the showers, many years in the future, maybe decades or even hundreds of years. The rising sea renders the drinking water in a coastal village in China unsafe. Crops wither, animals die, and lots of people who are not yet born will starve to death.

What matters and what doesn't to the moral evaluation of this sort of case? There's harm, but whose fault is it? What should be done about it? The answers are not obvious, at least not as obvious as in the examples involving that vase. What differentiates the two kinds of case?

Jamieson argues that the part of our value system which fails us in this connection has much to do with responsibility.[1] We are accustomed to thinking about individual, easily identified harms which are local, right in front of us in both space and time. It's hard for us to miss that broken vase or the fact that I broke it out of spite. I'm responsible to the tune of exactly one vase. I should be blamed and made to compensate the shopkeeper. Maybe I should pay a bit more besides, to help convince me that smashing up other shops would be a bad idea too.

All of that is plain enough, but the trouble with climate change, Jamieson argues, is that our usual paradigm collapses under the

weight of certain complexities. Our values grew up in a low-tech, disconnected world of plenty. Now, cumulative and apparently innocent acts can have consequences undreamt of by our forebears. Further, the effects of actions, as well as the actions themselves, are smeared out in space and time in confusing ways. As Jamieson puts it, 'no one intended the bad outcome or brought it about or was even able to foresee it'.[2] There's no vandal standing there right in front of a broken vase. Who do we blame? Who should be made to pay? When thinking about the vase, the answers were almost instantaneous; now it's hard even to know where to begin. We can make some headway by getting the complexity itself on the table.

AGENCY AND SPATIAL AND TEMPORAL COMPLEXITIES

What's clear is that climate change involves harm. As we saw in the first chapter, as the planet warms, weather systems change. The harm won't be evenly spread: some places will become more habitable, but many more will face new extremes of weather. Sea levels will rise, flooding homes and destroying crops. Elsewhere, water shortages will threaten. Disease will spread to new areas. There will be conflict. A lot of people will die or be uprooted or suffer in other ways. Species will disappear. Whole ecosystems might well be destroyed. There are enormous harms before us. If the harms are obvious, much of the rest of the ethical dimension of climate change is obscure.

Gardiner identifies three aspects of climate change which make thinking about it particularly difficult for us.[3] There are global features of climate change: the relevant causes and effects and the agents behind them are spatially dispersed throughout the globe. There are intergenerational aspects too: the relevant causes and effects and the agents involved are temporally dispersed. Finally, reflection on the problems attending climate change is hampered by our theoretical ineptitude which, when combined with the

spatial and temporal features of climate change, can lead to a kind of moral corruption. Let's start with the global aspect of climate change and work through all of this.

Considered globally, climate change is a spatial problem, with contributing causes and effects, agents and institutions, spread out over the planet. The fact that it's lots of different people, governments and businesses doing many different things in different countries compounds the trouble when we try to understand and do something about climate change. There's no one standing red-faced next to a broken vase. Actions set in motion in one hemisphere have effects on the other side of the world. The way land is used here affects flooding over there. The fuel burned over there changes the effects of the El Niño a little, which causes a drought somewhere else. Climate, it almost goes without saying, is global.

There are temporal complications too, and this issues in what Gardiner calls 'intergenerational' aspects of the problem. Causes and effects are smeared out in time as well as space. Among other things, this means that it takes a while for our actions to be translated into noticeable effects on the climate. By the time we can see some of the effects – large rises in sea level, for example – the inertia of the climate system is such that it will be too late to do something about it. Worse than this, from the point of view of coming to grips with the moral dimension of climate change, agency itself is spread out over time. There is a sense in which my actions and the actions of my present fellows join with the past actions of my parents, grandparents and great-grandparents, and the effects resulting from our actions will still be felt hundreds, even thousands of years in the future.

It is also true that we are, in a way, stuck with the present we have because of our past. The little actions I undertake which keep me warm and dry and fed are what they are partly because of choices made by people long dead. Even if I didn't want to burn fossil fuels, I'm embedded in a culture set up to do so. Short of moving off to a yurt somewhere, I can seem kind of stuck with the system when it comes to satisfying even my basic needs.

The spatial and temporal smearing of actions and agency can be deeply confusing, because sometimes moral responsibility depends conceptually on another sort of responsibility: causal responsibility. If we know that an action is wrong, then all we need to know is that someone did it in order to conclude that they were responsible for something wrong. However, the causal connections underpinning climate change are bizarre in several ways, and this muddies the waters when we try to think about who did what. It is unclear, for example, that any particular action of mine is causally responsible for any future harm. All the little things that I do today – flicking on a few light bulbs, putting my clothes in the dryer, listening to the Shipping before I go to bed – might amount to nothing more than a negligible amount of damage to the atmosphere. It is almost as though I am jointly responsible, with a million other people, for a billion little actions, in a trillion little moments. Each act is nothing in itself, each person does no obvious wrong, but together the results are catastrophic.

Given all of this, it's no wonder that a third aspect of the problem, our theoretical ineptitude, makes matters even worse. We're not much good at thinking about our long-term future, non-human animals and nature, the value of persons who might never exist, spatially and temporally smeared actions and so on. We have been able to get about our business without worrying much about any of this, so now that it matters, we lack both the wisdom and the theory to cope with it. It's possible, Gardiner concludes, that our theoretical failure can lead to a moral failure, a kind of deception in which we focus on one part of the problem and not others. The complexity can be an excuse, a problematic excuse, for doing nothing at all.

THE PRISONER'S DILEMMA AND THE TRAGEDY OF THE COMMONS

A way to make our theoretical failings as well as certain features of our thinking about both the spatial and temporal aspects of the

problem a bit more concrete is to think about two famous thought experiments and apply them to the problems posed by climate change. The first is the prisoner's dilemma, and it has many incarnations. Almost all of them make plain a certain worrying feature of individual as against collective rationality.[4]

Imagine that Bonnie and Clyde are arrested for bank robbery and placed, brooding, into separate cells. They face ten years in prison if convicted, but the police, who are short on evidence, are willing to offer them a deal. They can confess, stitch up the other prisoner, and get themselves out of trouble. If one rats out the other and the other keeps quiet, the rat goes free and the other gets the full ten years. If they rat each other out, they both get five years. If they both keep quiet, though, there's nothing the police can do, and they are held only for a month on some lesser charge. They can't confer, so what should they do?

If all that matters to them is jail time, then being a rat is the right thing to do. Clyde might reason thus. 'If Bonnie keeps quiet, then the best thing to do is betray her, because then I walk. If Bonnie rats me out, then the best thing to do is still to betray her, because then at least I get only five years, not the full sentence. Either way, the right thing to do is talk.' Clyde's reflections are interesting, if not disquieting, because while co-operating is the collectively rational thing to do for both prisoners, defection and betrayal is the individually rational thing to do. If everyone co-operates, then the least time is served overall. If individuals do what's individually rational, however, they can end up undermining what's best for everyone.

Here's a second and nearby example called the 'tragedy of the commons'.[5] Suppose that instead of straightforward co-operation we are thinking about the use of some common, limited resource. Imagine five cowboys, each with ten excellent cows grazing on land held in common by all. If all that matters to the cowboys is the value of their individual herds, then each will do what he can to have as many cows as possible. Suppose that the common field is standing at full cow capacity – it can only comfortably support the 50 healthy

cows happily mooing and munching away on it right now. Still, the individually rational choice for any given cowboy is to add more cows to his herd. This lowers the value of all the animals in the field – they get less to eat and become a bit scrawny – but he gets the full value of the extra cows all to himself. Everybody suffers from overgrazing – each cow is now worth less – but only the individual cowboy gets the benefits of adding more cows to his herd. The tragedy of the commons is, roughly, that it seems in everyone's individual interest to exploit a common resource as far as possible, to the detriment of the group's collective interest.

Here is one last example, a variation on the prisoner's dilemma.[6] Suppose that Bonnie and Clyde have managed to unlock the mysteries of time travel, and they and their gang are now robbing banks throughout time. They come to the attention of the Time Cops, who manage to arrest all of them at different points in the timeline. The cops offer them the usual deal: betray the others or keep quiet, and the same system of rewards and penalties applies as before. Now that the annoying leaps through time have been put to a stop and the temporal order is re-established, the cops start grilling Robber One in 1950. They've got to wait until 1970 to brace Robber Two. Bonnie awaits interrogation in 2000; Clyde is sometime in the 2010s, and so on, up to Robber Twelve in 3005. Should the prisoners keep quiet or confess?

If the usual prisoner's dilemma indicates that it's individually rational for one prisoner to rat out another, this temporal version presents a slightly different picture. If all that matters is jail time, it is in the interest of everyone who comes earlier to rat out anyone who comes after. In fact, the ones who come earlier are not in much obvious danger from the ones who come later – they might even be dead by the time a later robber gets the chance to squeal. Again, it seems individually rational for the prisoners not to cooperate with one another, even though it would be better collectively (for just about everyone) to do so.

These examples can lead to a number of conclusions. Aspects of the problems attending reflection on climate change seem to fit

both versions of the prisoner's dilemma and the tragedy of the commons. States thinking about obeying the terms of treaties like Kyoto are in something like the position of a prisoner reflecting on betraying a former colleague. Acting in your own interests, polluting and enjoying the benefits of untrammelled energy use, can seem like the individually rational thing to do – particularly if, so far as you know, that's what the other guy is going to do. Exploiting a common resource, like the carbon-absorbing properties of the planet, can seem like a good idea too. Everybody shares in the loss of the common resource, but only the polluter enjoys the benefits of using extra energy and dumping more carbon dioxide into the atmosphere. Even better, instead of other cowboys counting your herd and holding you responsible for the suffering of their animals, it's future generations who are really going to bear the costs. As some are still playing on swings and the rest haven't been born yet, they are unlikely to object.

At the very least, these examples show that sometimes individual and collective interests can diverge dramatically. This can only exacerbate our efforts to think our way through the problem of climate change, particularly if you bear in mind the fact that doing something about greenhouse-gas emissions will require almost unprecedented global co-operation. Intergenerational co-operation is also going to be required – earlier generations are going to have to shoulder burdens for benefits they won't be around to enjoy. Individuals, and you can think of individual states or businesses here as well if you wish, seem likely to undermine themselves and the rest of us by pursuing their own interests. Certainly those in the future, whose interests are not represented by anyone alive today, stand a good chance of being ratted out by all of us.

There is a ray of light in here somewhere. You might have noticed that, in order to get the examples going, certain turns of phrase were required. I had to set both versions of the prisoner's dilemma up with the phrase, 'if all that matters is jail time'. The tragedy of the commons would not have been so tragic without

the specification that cowboys care only about the cash value of their herds. There is something funny, too, in contrasting individual and collective rationality. Talk of individual rationality seems to confine my thoughts to nothing more than what's maximally best for me, as opposed to what's best for all of us, or even just what I can put up with without too much trouble. I suppose if you put a prisoner in a room, hand her a slide-rule, confine her thoughts to what's best for her and ensure that she thinks that all that matters is jail time, then you do get something like this divergence. But isn't there a chance that what's best for everyone might figure in the reflections of a prisoner or a cowboy? Is there honour, even among thieves? Must Clyde be so selfish? Didn't he love Bonnie?

There is a large discussion or debate between some philosophers and economists about the sorts of values which should matter here, a debate which I will only mention and then quickly side-step for now.[7] Part of the disagreement has to do with whether economics is the right sort of tool, employing the right set of values, for deciding some of the meatier questions arising from the fact of climate change. There's no doubt that some questions are amenable to economic analysis, but there is considerable doubt that all questions of interest have economic answers. Philosophers jibe more than a little, insisting that moral values can and do trump talk of monetary costs, rational actors and cost-benefit analysis.

To take one obviously unfair and heinous example, which at least makes the point quickly, a few economists have tried to calculate some of the 'non-market impacts' of climate change by assigning a value to a human life in proportion to national per capita gross domestic product. You get solid and objective answers to your questions through this assignation, but you also have to think about a Chinese person as worth about one tenth of a European. We'll look away from this example, and just say that economics has to matter, but it can't matter without the careful consideration of value, which has to happen further upstream than economic analysis. Costs and benefits and rational action

matter because other things matter more. Those other things are part of the ray of light we just noticed.

The ray of light can look a little feeble, however, particularly if you furrow your brow and think about actual human behaviour. Think about the bare possibility of collective, collaborative action on the part of governments and businesses which are designed for competition. Think about the objections of people who go on about practicality and solutions for the real world. Encouraging examples of intergenerational co-operation on a global scale between governments as well as industries do not spring immediately to mind. But what stands a chance of getting it going, from a certain point of view, is exactly what makes me conclude that Clyde would never squeak. Talk of rational self-interest and cost-benefit analysis gets a lot of press, but economic reasons are not the only reasons one might have. In fact, we do not act just in our own interests – thieves can be stand-up guys and cowboys can do the right thing. In the case of climate change, it can help if we think a little about what doing the right thing is and, in particular, who should be doing it.

We'll spend some time thinking about individual duties and responsibilities with respect to climate change in the last chapter. Meanwhile, our focus will be on states and their moral responsibilities. We'll start with the bare responsibility for action – if something should be done, who should do it? This question can be approached with three temporal directions in mind: the past, the present and the future. The moral demand for action on the part of some parties might arise given past behaviour, given the current distribution of resources, or given obligations to future generations. More factors could figure in our thinking, but we have more than enough to make a start.

HISTORICAL PRINCIPLES OF JUSTICE

There is a large literature on the nature of justice, and it goes as far back as Plato. You'll be as relieved as I am to know that I'm not

about to rehearse it or offer up some theory of justice here. There are plenty of those.[8] Justice, however characterized, figures in talk of punishment and the distribution of goods, as well as corrective or compensatory action. Punishment might be considered just if it fits the crime, if a genuinely guilty person has to pay a fine or give up a share of freedom in proportion to the harm she caused in doing wrong. The distribution of drinking water from a common well might be thought just if it goes to everyone equally, or perhaps to those who most need it first. If we find out that extra water has been going to someone who has been taking a secret share for himself everyday, compensatory or corrective justice might demand that he give the water back or refrain from taking an equal share of water for a time in the future.

In all of these cases, conceptions of justice can seem to have something in common, and usually the common ground has to do with how goods, resources, burdens, benefits or some such are divvied up. Justice seems to consist in sharing something out equally – whether the something is a burden or a benefit – unless there are good reasons to the contrary, good grounds for departing from this default approach. The good grounds will probably have to be morally relevant grounds. Maybe you should get more water from the common well if it hasn't rained much on your crops. Without the extra share, you and those who depend on you stand a chance of suffering. Avoiding that suffering is morally relevant. So if everyone else can cope, you should get a bit more. If supplies are limited and everyone depends on the well, probably you don't get more water if you just want it for your Jacuzzi.

The morally relevant grounds for a just departure from equality can sometimes be historical or backwards-looking. As in the example above, corrective or compensatory justice demands that someone sneaking extra water in the past should give up a share of it at least until equality is re-established. Sometimes, though, a departure from equality happens for entirely different reasons. It might be agreed upon or otherwise earned. Perhaps you and your shipmates are given an equal ration of rum each night. If one

agrees to take your watch in exchange for your tot of rum, the distribution of rum is no longer equal, but a glance at your history can tell us that it's just. You've departed from the default practice of an equal share for all, but you've done so for a perfectly good reason: all parties came to a mutually beneficial agreement and consented to the departure.

So historical considerations can matter a lot to the conclusions one reaches about whether the current distribution of benefits or burdens is a just one. Further, historical considerations can tug in two directions. Reflection on the history of an unequal distribution can lead to the conclusion that the distribution is just, certainly if morally relevant considerations have led up to the distribution as it now stands. Reflection on the history of an unequal distribution can also lead to the conclusion that the distribution is unjust, particularly if no relevant considerations for the inequality can be found.

If the distribution of a limited resource is not just, often a further case can quickly be made for the claim that those enjoying undeserved benefits now have a responsibility to do something about the distribution. In particular, those who have unjustly benefited might have a moral responsibility to push the distribution towards equality. Possibly corrective justice demands that some additional burdens are shouldered by those who got away with extra benefits in the past.

Think less about rum and more about greenhouse gases. We know that human beings have been pumping greenhouse gases into the atmosphere, willy-nilly, since the Industrial Revolution. If the planet could absorb everything we put up there, then it would be hard to see how the kinds of questions about justice which we have been pursuing could arise with respect to climate change. Justice of a sort only seems to matter when we are dealing with the distribution of a finite resource. If we had as much rum as we could drink, we'd have some problems to deal with, certainly, but maybe we wouldn't have to worry much about what counts as an equal distribution of rum. However, we now know that the carbon

sinks of our world are finite: the planet can only absorb a certain amount of our emissions, and the rest contributes to a blanket which heats up the planet. We also know that we have already put more gases into the atmosphere than the planet can absorb without warming up.

Many philosophers now think of the carbon sinks or the absorptive properties of the planet as a finite, common resource – much like the common well in the examples above.[9] And just like that well, there is a sense in which the carbon sinks are a necessary resource, at least a resource which matters more than might be thought. Many of the people on the planet depend on fossil fuels for more than just keeping their DVD players on standby. Given the way many of our societies are set up – in particular, given our methods of energy production – putting carbon into the atmosphere is a fundamental part of securing food, shelter, warmth and other necessities. Using up someone else's share of the sink, from a certain point of view, is as unjust and as harmful as using up their water or the resources they need to build a home or produce food.

Further, it is clear that we have departed from an equal distribution of this limited resource. Not all countries emit the same amount of greenhouse gases or otherwise use an equal share of the sink. Brace yourself for some numbers. Human beings put about 26 gigatons (26 billion metric tons) of carbon dioxide into the atmosphere each year.[10] The United States is responsible for more than 20 per cent of annual global emissions; China for nearly 15 per cent, and the European Union for around 14 per cent. The next in line is Russia, with a lot less: about 5 per cent of global emissions. Even if we think in terms of per capita emissions, the distribution is not equitable at all. In 2003, for example, the US emitted almost 20 tonnes of carbon per person. Russia emitted more than 10 tonnes per capita. Countries like Vietnam, Pakistan and Chad emitted much less than one metric ton per capita. For some countries, there are no measurable greenhouse gas emissions at all.

Historically, the distribution of emissions has never been equal. Current global emissions echo cumulative emissions – the

disparities are similar.[11] The US comes first on the list, responsible for almost 30 per cent of cumulative carbon-dioxide emissions between 1850 and 2002. The European Union is second, accounting for 26.5 per cent; Russia is third with 8.1 per cent; China is fourth with 7.6 per cent; within the EU, Germany comes next with 7.3 per cent; followed by the UK with 6.3 per cent. The UN's Food and Agriculture Organization categorizes countries as developed or developing. If we follow these groupings, then developed countries are responsible for over 800,000 million metric tons of carbon emitted since 1900. The developing world, including huge countries like China and India, has contributed much less: just over 213,000 million metric tons. Since 1850, the developed world is responsible for a total of 76 per cent of carbon-dioxide emissions, while the developing world has contributed just 24 per cent. Based on the World Bank's grouping of countries as high income or low income, high-income countries have produced 617,000 million metric tons of carbon dioxide, while low-income countries are responsible for just 51,000 million metric tons. The rest has been emitted by countries somewhere in between.

So are there any morally relevant historical grounds for the present unequal use of the planet's common carbon sinks? Should we be tugged in the direction of thinking that the current set-up is a morally defensible one? Certainly there have been no relevant and mutually beneficial agreements between developed and developing countries, as there were in the case of you and your shipmates. But there might be other grounds for thinking that certain inequalities are nevertheless justified.

Singer considers two arguments for the claim that an unequal distribution might nevertheless be morally acceptable.[12] The model is private property or instances in which some people take part of what might have been held in common for themselves. There is at least one tradition, owed to Locke, which comes around to the conclusion that an unequal distribution of a common resource can be better for all concerned than an equal distribution. Locke suggests that we consider the situation of the Native

American of Locke's time, whose society, he says, is set up such that there is no private property, no private ownership of land, and therefore no organized cultivation. Certainly, no one has appropriated a common resource here – there is no unjust departure from equality – but then again, Native Americans do not have much in the way of stuff, particularly foodstuffs, or so Locke maintains.

Consider now the situation in Locke's England. There, over time the common ground has been appropriated by landowners with large estates, and landless labourers work the land. The common resource, the land, has been taken up by individuals, and the distribution is not equal at all, but the day labourer has no ground for complaint. Even the best-off Native American, Locke maintains, has less food, worse lodgings and poorer shelter than the landless worker in England. The English set-up is not equal, but there is a sense in which everyone benefits.

Singer rightly notices that the factual basis of Locke's comparison is more than just rough around the edges, but even if we look away from this, the situation with the planet's carbon sinks is very different from the case of private land use. Locke seems to argue that, however it came about, the current set-up has seen to it that the average Englishman has more than the average Native American. Even if any given Native American has an equal share of the land, even an equal share of whatever is going, there's less going, precisely because there's no private ownership driving production. The unequal distribution of land in England gets trumped by something morally relevant: the workers and the owners in England all benefit from increased productivity. English lives are arguably better than they would have been had a system with equal shares prevailed.

However, Singer notes, even if everyone benefits from landowners taking more than an equal share of the land, not everyone benefits from developed countries taking more than their share of the global sinks. For a start, most of the people in poorer countries cannot hope to afford what gets produced by the rich nations' high-energy economies. Not many people in East Timor can afford

a new, top-of-the-line refrigerator. This has not stopped rich nations charging poorer ones for things like medicine and agricultural equipment, which is partly the reason why poor countries have racked up enormous debts. As Shue rightly points out, the poor have mostly paid for whatever benefits have trickled down to them.[13] Further, developing countries are harmed and will be harmed in all sorts of ways as a result of the developed countries emitting greenhouse gases. It might be true that an English labourer had more meat on the table in Locke's day than a Native American. In our day and in future days, there will be less meat, even less tables, for many people in the developing world as a result of the unequal emission of greenhouse gases.

The second argument Singer considers is owed to Adam Smith. Smith argues that the rich have something of a right to their wealth, because their wealth does not deprive the poor of much and brings to the poor certain benefits. The rich, on this account, 'take only what is most precious' and divide with the poor the fruits of 'all their improvements'. Smith's well-known invisible hand ensures that necessities are distributed more or less as they would have been had things just been divided equally. The rich do not consume all that much more than the poor consume, and, anyway, they take only the most precious things, items which wouldn't really be missed by the average poor person anyway. Further, in pursuit of their wealth, the rich set up a world with many more goods in it. Like Locke, Smith thinks that just splitting things up equally leaves the average person with less than she would have if the rich get to keep some things for themselves.

Again, the analogy breaks down almost immediately. If we think about carbon sinks, it is just not true that the rich have taken only a little more than the poor. In fact, the rich have used far more of the carbon-absorbing properties of the planet than the poor have – perhaps ten to fifteen times more. There is a sense in which the poor really have been deprived of a resource. Smith is right to say that what is most precious is taken by the rich, but we are not talking about mere diamonds and gold. Burning fossil fuels, using

the planet's sinks, has partly made developed countries what they are – it has been a large part of securing the standard of life enjoyed by those in wealthy countries. The resource which helped the developed world to do this is now effectively used up. In using the atmosphere as we have, we have not just consumed a little more than the poor. We've taken a possible future from them and replaced it with something much worse.

That might be enough for you. You might now be ready to conclude that the current distribution of the benefits and burdens associated with the use of the planet's carbon sinks is not just. The developed or high-income countries are using and have used much more than their share, and there are no morally relevant grounds for this inequality. Further, the poor are already enduring some of the costs of climate change in the form of extreme weather events, sea-level rise, food and water shortages and climate shifts. They've also missed out on a share of the sink, and there's a sense in which they've therefore missed out on better lives. These burdens are visited upon them through no fault or choice of their own. Certainly they have fewer resources which might be devoted to coping with climate change. Things are tough for them and easy for us because of an unfair distribution of a limited resource. Maybe more arguments will be forthcoming, but the traditional defences of private property are not persuasive in this connection. It's hard to find historical grounds which might excuse the current distribution of benefits and burdens. The distribution is therefore unjust.

So developed countries have a responsibility to do something: at the very least, we should begin to redress the balance by reducing our emissions. Given the present disparity between the emissions of developed and developing countries, the reduction will probably have to be dramatic. Probably the developed world should do something about the unpleasant future we have forced on the developing world too. The burden of proof for any claim that we might do otherwise, might continue to take more than their fair share, rests squarely with us.

You might also be willing to conclude that room should be made for developing countries to develop. However we come down in terms of targets or allocations – and we'll come to all of this in Chapter 5 – justice might demand that developing countries get a share of the sink if a share is going. If it turns out that emission allocations are highly restrictive, then justice might demand that developing countries get a larger share than developed ones. If anyone gets a seat at the table, they get a bite before we go back for seconds and thirds.

Maybe you will go so far as to think that corrective justice places further demands on the biggest fossil-fuel users. As we noticed a moment ago, if it turns out that someone has been sneaking extra shares of water from the well, compensatory or corrective justice might demand that he give water back or take less in the future. These sorts of thoughts might also lead you to the conclusion that developed countries ought to have a smaller share of the sink than developing countries. Other sorts of compensation might be due as well, particularly if you think a little about the suffering our history of fossil-fuel use has caused and will cause. The developed world might be morally obliged to pay for some sea-walls in Bangladesh, and a lot more besides.

If you are not ready to come to these conclusions just yet, one other, positive consideration might nudge you in their direction. Consider the following principle.

There is the thought that polluters should pay for the cost of their pollution. The thought has a history, going back at least to the 1970s, when certain European governments concluded that industries, not taxpayers, should pay for cleaning up such things as oil spills and the particular sorts of contamination which sometimes result from mining. The Polluter Pays Principle, as it is called, is embedded in the law of several countries, as well as the thinking underpinning at least some international agreements. The Rio Declaration on Environment and Development, for example, states that: 'National authorities should endeavour to promote the internalization of environmental costs and the use of economic

instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution'.[14]

The principle is interpreted in different but related ways. Suppose that refining oil results in a hideous sludge which requires careful disposal. Some argue that the cost of coping with the goop ought to be born entirely by the producers of oil. Others claim that the users of oil bear some responsibility in these matters, and so the purchase price of oil products should include some portion of the cost of cleaning up. Other charges might be imposed by the government on a business if certain sludge reduction targets are not met. Perhaps a company has to put aside some money before it is permitted to drill for oil, money earmarked for dealing with the sludge. However you slice things up, though, it's clear that we have at least some basis in law for thinking about the relationship between environmental damage and responsibility.

The principle is based on something else, a deep part of our moral outlook, possibly a part of the bedrock mentioned in the last chapter or at least a thought deep down in the depths of morality. It has a lot to do with something else we glanced at a moment ago, namely the conceptual connection between moral and causal responsibility. This deeper principle is enshrined not just in law, but on posters taped to the walls of innumerable antique shops: 'If you broke it, you bought it.'

It hardly bears spelling out. You know exactly what I mean by it. The only real question in this connection concerns the identification of who is causally responsible for our 'broken' climate. If that's too rich for you, then the question is about who has causal responsibility for the bulk of greenhouse-gas emissions. The answer, undeniably, is the developed world. Singer, perhaps sighing audibly, concludes:

> To put it in terms a child could understand, as far as the atmosphere is concerned, the developed nations broke it. If we believe that people should contribute to fixing something in proportion to their

responsibility for breaking it, then the developed nations owe it to the rest of the world to fix the problem with the atmosphere.[15]

So reflection on historical principles issues in one clear conclusion: the developed world has a moral responsibility to take action on climate change. The question might be approached as a problem of distributive justice. The carbon sinks of our world are a finite resource which has been shared out unequally. Justice demands that we redress the balance. The question of responsibility might also be approached in terms of causal responsibility alone. Again, it is hard to escape the conclusion that the developed world has a moral responsibility to take action.

PRESENT ENTITLEMENTS AND CAPACITIES

It might have occurred to you to raise a few objections to the claim that history places moral demands on the developed world. Those objections might have something to do with intention or knowledge or even history itself. The objections can lead you to the conclusion that we should look away from history and focus instead on how things now stand. We'll start with the objections and then come around to the moral weight of present entitlements and capacities.

The concept of responsibility is something of a mixed bag, and we apply it in different directions. We sometimes have in mind causal responsibility, and when we do we refer to something insofar as it is a cause of something else. The rain, for example, can be causally responsible for the wetness of the garden. We also talk about legal and moral responsibility, and the rain does not stand a chance of being held responsible in either of these senses. The reason the rain is never held morally responsible for anything has a lot to do with the fact that the rain never knows or intends anything.

If you think I am morally responsible for some past action, say a lie, then at the very least you think I knew what I was doing. I knew

the truth, but deliberately chose not to tell it. If you confront me, you might try to show that I had to know that what I said was false and that I had some reason for concealing the truth – maybe you found a motive for the lie, and you use that to uncover my real intentions. I might protest my innocence, claiming that I really thought that what I said was true. I wasn't lying at all. Maybe I can find a way to convince you that I came to believe some falsehood and innocently passed it on. You might be convinced that I didn't intend deception, that I didn't know the truth, and conclude that I'm not morally responsible for misleading you at all.

Couldn't a case be made for the claim that the developed countries did not know about the effects of greenhouse gases? Couldn't a case be made for the claim that they certainly did not intend to bring about climate change? If the developed world did not intend and did not know about climate change, then talk about historical principles of justice and responsibility for action sounds a little hollow. Perhaps we were too quick to conclude that the developed world has a responsibility to take action.

Consider first our knowledge of the effects of greenhouse gases. As we saw in Chapter 1, our understanding of the absorptive properties of atmospheric gases does not exactly depend on recent breakthroughs. Still, at least some philosophers and other thinkers who worry about knowledge and responsibility in this connection settle on 1990 as the year in which the world could no longer claim ignorance of the effects of emissions. Again as we noticed earlier, that was the year the IPCC published its first assessment report. Given the findings published there – data which got a lot of press – it is hard to forgive governments on the grounds of ignorance for their failure to act. If this sort of information has been widely known at least since 1990, it is hard to explain away our actions on the grounds of innocent intentions since that date as well. For what it's worth, greenhouse-gas emissions have been on the increase, by just about any measure you like, since 1990.

There are, anyway, certainly legal cases in which we do not shy away from holding someone responsible even though there are

gaps in her knowledge. Many countries have plenty of distinctions in law which carve up the territory – conceptions of vicarious liability, strict liability, partial liability, diminished responsibility, manslaughter as opposed to murder, and so on. It is possible to think that some legal analogue might guide us in our thinking about climate change. Whatever the analogue might be, there's a good chance that we'll end up with the view that the developed world is responsible, maybe in some sense morally responsible for climate change, ignorant and innocently intentioned or not.

Perhaps we need not delve into the law to find a response to these objections. Suppose you bump into my car and cause a bit of damage. It's not my fault: I was legally parked at the time. Still, you bumped into me entirely accidentally – you neither knew nor should have known that you were going to hit my car, nor did you have any intention of doing so. Would it be wrong of you simply to drive off?

The question is not whether you would be legally wrong – probably you would be – but whether you would be morally wrong in just driving off. I'm inclined to think that you should pull over, maybe ask if I'm all right and try to help me if I'm not. If repairs are required on my car, I think probably you are stumping up something. Maybe the developed world has changed the climate entirely accidentally – it neither knew nor should have known that its emissions were doing damage, nor did it intend the damage. Wouldn't it nevertheless be wrong for the developed world simply to drive off, to leave everyone else on the planet in the lurch? Shouldn't the developed world pull over, make sure everyone else is all right, and pay for the damage? If not of all the damage, then maybe most of it? Some of it? Certainly we don't want to say that it owes nothing at all just because it neither knew about nor intended the damage.

There is one more objection in this neighbourhood, one more reason we might put aside historical grounds for responsibility concerning climate change, and it has something to do with the temporal smearing we glanced at in Chapter 2. Against the claim that

rich nations ought to take action given their histories as greenhouse-gas emitters, one might take issue by saying that a lot of the damage was caused before most of the relevant nation's people were born. It smacks of original sin, you might be thinking, to say that I'm responsible for the ecological transgressions of my father. I didn't do it. He did. Maybe I'm responsible for my own minute emissions but not for the historical emissions of my country.

In order to get this objection up and running, I had to shift from talk of a government and its responsibilities to talk of individual people and their responsibilities. There are many such shifts in just about any discussion of the moral dimension of climate change. We both know that it's a mistake to assume that nations can have just the same properties as individual people. Still, we can and do talk intelligibly about a state's actions, intentions and desires, but from time to time we need to be as sure as we can be that we're not falling into some sort of mistake in talking and thinking in this way. If we are talking only about the actions and responsibilities of states, then probably there's not much room for saying that the state now is not responsible for the actions of the very same state one or two hundred years ago. No original sin there.

Even if we do admit that there is something to the claim that it is unfair to hold grandchildren responsible for the actions of their grandparents, the objection only gets going if we assume that the actions of the grandparents have nothing to do with the lives of the grandchildren. If my grandmother went in for a bit of carjacking in her day, it would be wrong to hold me responsible for it. I had nothing at all to do with her actions, and her actions have nothing at all to do with my life as it now stands. But the case of climate change is more complicated than this. As Shue argues, the people alive today in the developed world are the beneficiaries of the industrial activities of their grandparents.[16] It's not true that their past activities have nothing to do with our lives at present. The stuff and the education and the medical care and, in general, the standard of living we enjoy is largely owed to the industrial activities of those who came before us. We benefit from those

historical emissions, the same emissions which are partly causally responsible for climate change. The benefits we enjoy are causally linked to the suffering of others, both now and in the future. Are we not then morally obliged to do something about it?

I'll stop there, but it should be clear to you that these replies might be developed further. We might not be able to look away from history, but suppose, for the sake of argument, that somehow we manage it. Some are convinced that looking away is precisely what we'll have to do if we stand a chance of talking the largest polluters into coming to the negotiating table. Can we come to any conclusions concerning moral responsibility for action on climate change, just given things as they stand now?

We already know that present emissions are anything but equal. There are different ways of thinking about inequality and what to do about it, but if we think that fairness demands that a finite and precious resource be distributed equally unless we have morally relevant criteria for departing from equality, then we end up with the same conclusions now as we did when we took the history of our emissions into account. We end up with the view that the industrialized world has a responsibility to reduce its emissions.

Some just start with the default notion that everyone on the planet is equally entitled to a share of the sink. We'll come around to the details in Chapter 5, but for now we can at least notice that the rationale for such proposals need not be backward- or forward-looking. One can begin reflection on climate change by noticing that some nations currently burn more fossil fuels and therefore use more of the planet's limited absorptive resources than others. If we think that everyone is entitled to an equal share of what's going, all things being equal as it were, then the countries using more are the ones who ought to act immediately. It's the rich nations, on this view, who should aim for equality by cutting back.

The point might be strengthened by reflecting not just on emissions entitlements, but also on the varying capacities of rich and poor nations. You can approach these capacities from two different

directions. First, there is a sense in which richer nations have more room for reduction, and second there is a sense in which richer nations have a greater ability to pay for reduction.

Consider room for reduction. Not all emissions have the same standing. It might make sense to think of some emissions as having more or different value than others, even if the quantity of emissions is just the same. The emissions resulting from the efforts of a farmer in Africa as he attempts to feed his family are not on a par with the emissions resulting from the efforts of an American dermatologist as he attempts to get to Vegas for a weekend of gambling. There is a meaningful distinction between subsistence emissions and luxury emissions, even if pinning it down takes some doing.[17] If it turns out that there should be some sort of planetary limit on emissions, then you might think that everyone ought to be entitled to emit enough greenhouse gases as required for subsistence. Maybe those emissions are non-negotiable. If subsistence emissions fall under the planetary limit, and we still have reductions to make, then we can only discuss reductions to luxury emissions. It's clear that developed countries emit a lot more of those than developing countries. Suppose that 50 per cent of the emissions of the US Virgin Islands are luxury emissions and all of the emissions of Rwanda are subsistence emissions. It's clear who has room for reduction and who doesn't. Arguing the point is as good as saying that some Rwandans should die so that some Virgin Islanders can recharge their mobile phones.

Consider the ability to pay for reduction. There are arguments here – disputes about how much switching to green energy will cost, what savings there will be from more efficient energy use, how much investment in new technologies will cost, how much it will cost a society to move its workforce from some sectors to others, and on and on. However all of this turns out, it's clear that reduction will cost something. There are other costs too. Philosophers and others distinguish between costs associated with doing something about emissions, so-called 'mitigation costs', and the expenses

associated with coping with changes to our climate, so-called 'adaptation costs'. If we ignore history and think just about present capacities, a case might be made for the view that the richer countries ought to foot most of the bills.

Shue makes the point by comparing flat rates of payment to progressive rates of payment. Suppose three of us have to contribute to some common goal. I've got £100, you have £10, and Bob has £1. You argue for something which looks, on the face of it, as fair as can be: a flat rate of 10 per cent across the board as our contribution to the goal. I pay £10, you pay £1 and Bob puts in 10 pence. While this appears fair, it might well bankrupt Bob. Maybe the total amounts we started with are our annual wages, and it costs at minimum a pound per year to live. You and I comfortably clear the minimum level required for subsistence, but Bob is doomed. The money is small change to me, but it's life or death for Bob. Although the flat rate looks fair, what we are asking of Bob is too much. Maybe what we should have done was take our varying abilities to pay into account. The greater a party's assets, the greater the rate at which the party should contribute to the cause, or so one might conclude.

For Shue, the thinking underpinning this conclusion is enshrined in a principle of equity: 'Among a number of parties, all of whom are bound to contribute to some common endeavour, the parties who have the most resources normally should contribute the most to the endeavour.'[18] I suspect that the thinking here goes even deeper than talk of contributions and common endeavours. It has something to do with a moral principle which might be stated as follows: the better placed an individual is to do what is right, the greater the onus on him to do what is right. If you see a child drowning in the Thames, you've got some explaining to do if you don't try to save her. You have a lot more explaining to do if you don't try to save her and you happen to be a well-trained and physically fit lifeguard.

These thoughts can nudge you towards a final thought in this connection. Not only do wealthy nations have more room to

cut back on emissions and a greater ability to pay for the necessary changes than poorer countries, they also have much more besides. Compared to the poor, the people who live in wealthy countries are formally educated for longer, the technological options available to them are greater, their countries' infrastructures are better, their capacities to produce and store food are more impressive, their access to quality healthcare is easier, their housing is better, and so on. In short, developed countries have the resources to do rather a lot when it comes to dealing with climate change. They are presently best placed for action by just about any measure you like. To garble Kant, sometimes, can implies ought.

SUSTAINABILITY

There are lots of ways in to reflection on sustainability. Here's just one.[19] Think about seeing the child in the Thames again. It doesn't take much reflection to conclude that you ought to wade in and save the child, even if it means some small cost to you, like getting your clothes muddy. You can have your own reasons for coming to this conclusion, and whatever they are, it probably won't matter much to you if the drowning child is right in front of you or a thousand miles away in Africa. Your proximity to the child in danger of death seems irrelevant to whether or not you ought to try to help. If you think you ought to wade in at some cost to yourself to save the child in front of you, it's hard to see how you might avoid at least writing a cheque to Oxfam in an effort to save a child some distance away. The point, for us, is that distance does not make a moral difference to what you ought to do. Both children matter. You can help them both. The fact that one is some miles away from you is not morally relevant.

Although I have no doubt that distance does not matter to morality, I also know that our responses are a lot more complicated than what reason demands. If proximity does not make a

moral difference, it makes some sort of difference. It's a difference Weil notices and expresses well:

> Anybody who is in our vicinity exercises a certain power over us by his very presence, and a power not exercised by him alone, that is the power of halting, repressing, modifying each movement that our body sketches out. If we step aside for a passer-by on the road, it is not the same thing as stepping aside to avoid a bill-board.[20]

Proximity matters somehow. It matters when we walk down the street, and it matters even more when we walk past that drowning child. Seeing someone in distress, right there before our eyes, tugs heart-strings, moves us in a way that just knowing about distant distress, even seeing it on the evening news, might not. Even if we know something of this strange fact about us, it still does not budge the conviction that distance does not matter when it comes to what we ought to do. Hume knew that our moral instincts, which might get us going when we are directly confronted by some outrage or other, are matched by a sense of obligation which arises from reflection on what we ought to do in other cases. We can have this sense of obligation without the instinctive moral reaction, and maybe that accounts for the difference in our responses to the drowning child and the distant starving one. But, again, the difference is not a moral one: we know we ought to do something in both cases.

If spatial distance does not make a moral difference, it is hard to see how temporal distance could matter to what we ought to do. It might be thought that temporal distance brings more unknowns with it than spatial distance, and that somehow this excuses us from having duties to those in the future. I'm not so sure. We might not know the names of those distant people in Africa who we ought to help, we might not know if our cash or food will get through, we might not even know much about the precise effects of our efforts to help them, maybe we don't really know exactly what they will need or want most. None of this matters when it comes to the moral weight on us to do something

about their lives. You might conclude that it cannot matter when it comes to the moral weight on us to do something about future lives.[21]

This way of thinking about sustainability might make it sound a little too close to charity. However, when we imagine wading in to save the child, what we are thinking about doesn't feel quite like charity. It feels like what we must do: at the least, a drowned child is a bad outcome to be avoided, even at considerable cost. You can feel the same way about a starving child in Africa and think that what you are doing is not exactly charity, but something which depends on a deeper sort of obligation – it's not a supererogatory act of kindness, but a morally required act. The same can be true of efforts to ensure a sustainable future.

There has been considerable recent reflection on the nature of sustainability, particularly as worries about the environment have worked their way up various agendas. It's not difficult to see that the concept depends on the notion that whatever resources are used, enough are left not just for future use, but for perpetual or indefinite future use. It's been said that sustainable living or development amounts to living on the Earth's income, not its capital, and there is certainly something to this fairly straightforward way of thinking. Probably the most influential formulation comes from the Brundtland Report to the UN: sustainability 'implies meeting the needs of the present without compromising the ability of future generations to meet their own needs'.[22]

The motivations for commitments to sustainability usually do not depend on talk of the irrelevance of distance to moral reflection. Instead, sometimes there is the claim that present humans do not have the right to deprive future humans of this or that, but talk of rights – particularly the rights of future people – can get you into trouble. There is also talk of stewardship, which I don't quite buy either, just because I have trouble seeing our recent arrival on the planet as mattering much to the planet's long-term prospects. I don't see why a primate, recently down from the trees, gets to be in charge.

Better motivations have more to do with the quality of future lives, even the bare existence of future people. The quality of future lives depends rather a lot on the world we leave in our wake. You can think about our use of other resources too, but focus on our use of fossil fuels. We know that continuing to use them at present or increased rates might result in a particularly horrible sort of world – a planet with more extreme weather, rising sea levels, trouble with crops and fresh water, floods, and on and on, maybe even a virtually uninhabitable world. You don't have to think hard to conclude that if future lives ought to matter to us, whoever they might be, then the world we leave to them ought to matter too. It might not be going too far to say that some of the societal actions we might take now, actions which are not sustainable, would result in the preventable deaths of a great many people, still more environmental refugees, disease, malnutrition, staryation, wars and suffering of other kinds. Avoiding all of that unnecessary pain through sustainable choices has a lot of moral weight behind it. It seems easy enough to see it.

What's hard to look square in the eye is the question of who ought to be bound by the demands of sustainability. It has been a little easy to point to the rich nations of the world and say that reflection on historical principles of justice or present capacities issues in the clear conclusion that they must take action on climate change. The action in question, it seems obvious, has a lot to do with cutting back, reducing emissions, maybe tightening belts, possibly paying for adaptation in the poorer parts of the world. We are now faced with the uncomfortable possibility that the poor nations of the world might have some belt tightening ahead of them, too. The demands of sustainability might fall upon us all equally. We've all got to think about those bad lives ahead.

Is the suggestion really that developing countries ought to be guided by concerns for a sustainable future, even if this means making large changes to present lives, lives which are only just getting tolerable, only just getting clear of poverty? And what

about lives still lived on the edge? Can a country with a lot of starving people of its own to worry about really be expected to concern itself with the possibility of people starving in the future? There is something more than awful in all of this. At least some have thought that there's worse in here too, and it has already been claimed that the rich and powerful countries of the world will use talk of climate change as an excuse to stop the developing world developing, to keep the poor in check.

There are more upbeat voices who express the hope that the developed world will see to it that the developing world will leapfrog the worst of industrialization and join the rest of us living sustainable lives. On bad mornings you can have doubts about this hope. On just about any morning, however you find a way to think about it, sustainability seems to demand something from every one of us. The moral weight of all of those miserable future lives can seem crushing.