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INTRODUCTION

Everyone knows that we’re not dealing with climate change successfully, but few people understand why. Sure, we all know that politicians are driven by short-term interests, oil companies corrupt politics to maximise their profits, and most of us in the rich world keep driving around burning oil at the same time as we self-consciously buy reusable coffee cups. But we’ve known all that for a long time.

In the past decade or two, the world has upped its game. Mass protests have put pressure on the politicians. Parliaments have passed laws to limit greenhouse gas emissions, put taxes on carbon, and subsidised solar panels. Oil firms have been sued, coal-burning power plants have been demolished, and global agreements have been reached. Yet still, every year we pump more planet-warming gases into the sky than we did the year before.

By some measures, we are making progress. Last year, eight-tenths of the new power plants built across the world used solar, wind, or other forms of renewable energy. Electric vehicles are visibly proliferating on our streets.

The problem, however, is the pace of change. Over the past two decades, emissions of greenhouse gases for each unit of global gross domestic product (GDP) decreased only by a measly 1.5% per year. To keep the climate just about safe and stable, as it has been for the ten thousand years of human civilisation so far, the countries of the world have agreed to try to limit the increase in global temperatures to below 1.5°C. That requires a reduction in global emissions per unit GDP of around 8% per year over the course of this decade. In other words, we need to rip fossil-burning out of the global economy roughly five times faster this decade than we managed over the past two decades.¹

Almost nobody can tell you how that will be done. Technologically, we can imagine it, but politically, we can’t. The common answers are unconvinving. ‘The solutions are all available, and action on climate change is a great economic opportunity; all we need is leaders with enough political will, and we can do it.’² Or ‘Young people care about climate change more than their parents do, and look how fast veganism is spreading. Behaviour change
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from the bottom up is what will change society for the better.’ There is some truth in both of these statements, but also desperation. Do we really expect a new and better crop of political leaders to spring up across the world, or a moral revolution to sweep through society, quickly enough for the global economy to be turned upside down and half the fossil fuels shaken out within the next decade? Hardly. No wonder some of the activists who have immersed themselves most deeply in this problem are telling their children not to have children.

If we want to give ourselves a fighting chance of success, we need to face up to this lack of answers and find some new ones that provide more plausible grounds for hope.

For the past decade, I have hacked away at climate change from various positions within the UK government. The United Kingdom congratulates itself on being a climate change leader, and in some ways it is. Our non-governmental organisation (NGO), business, and academic communities have been at the forefront of global movements in climate science, economics, law, and finance. Our governments, from both the right and the left sides of politics, have been the first in the world to set legally binding limits on emissions and to create a dedicated global network of diplomats to persuade other countries to do the same. We have a strength of social concern and political consensus for acting on climate change that some countries can only dream of. And yet, in many ways we are still failing. Perhaps this makes the UK a good place to think about what is holding the world back, and how we could all do better.

I first got interested in climate change not long after my daughter was born, when I happened to watch a presentation that a scientist had shared online. It was a plain set of graphs with a dry voiceover, but its content was shocking. The problem was far worse than I had realised. I cut short my job on counter-terrorism as soon as my bosses would allow, took an online course on climate change, and moved into the first climate change position I could find. Over the years that followed, I worked on domestic energy, climate, and industrial policy, and international climate change projects, negotiations, and campaigns.

At each stage of this journey, I discovered strange things. The worst potential consequences of climate change seemed to be the least recognised. The most promising policies to do something about it seemed to face the most resistance – even within government itself. As for promoting cooperation between countries, the most effort was going into the approach that seemed least likely to succeed. When I hunted down some of the best
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experts in the world to help me understand what was going on in each of these areas, what they told me only gave me greater reasons for concern.

One day when I left my office at lunchtime to see the climate change protesters outside Parliament, my heart was lifted by the sight of a small girl, who looked like she was only about seven years old, carrying a sign that said, ‘We’ll stop protesting when you stop being so shit’.

This book is about why we are still being so shit at dealing with climate change, and how we can stop that without needing to become better people or have better leaders. More specifically, its focus is on the problem of global emissions: how to decarbonise the world’s economy five times faster than we have done so far. The problem of how to adapt to the climate change that we cannot avoid is equally important, but it has not been the focus of my work; rather than do it the injustice of a half-treatment, I will leave that book for others to write.

The conclusion I have come to is that there is a great deal we could change, but the targets of the necessary reforms are not as obvious as the oil firms and their pipelines. It’s not just the physical plumbing of the global economy that needs to be replaced, but the intellectual plumbing. In the science, economics, and diplomacy of climate change – three fields that are central to how we understand and respond to this civilisation-threatening problem – institutions that should be helping us are holding us back.

In climate science, the most surprising thing is how little world leaders have been told about how bad things could get. You might think they are all given clear assessments of the risk that leave them in no doubt about what is at stake. They are not. While we all assume the scientists have got this covered, the science community is organised for a different purpose. Collectively it assumes, with some justification, that risk assessment is someone else’s job. The result is a lack of serious risk assessment that would be unthinkable in other areas of public policy, such as public health or national security. Unless we fix this, we can hardly be surprised if the actions of leaders fall short. Part I of this book looks into why this situation has arisen, and what we can do about it.

If science has been pulling its punches, economics has been fighting for the other side. Thanks to some strange twists of history, the economics that dominates public debate and policymaking is founded on an assumption that the world is fixed and unchanging. The more we want to change things, the more unhelpful this kind of economics turns out to be. Avoiding dangerous climate change demands the largest and fastest economic changes the world has ever seen. We have to change how we generate electricity, construct buildings, grow food, manufacture materials, and
transport ourselves by land, sea, and air—all within a few decades, all over the world. As if this wasn’t hard enough already, economics is systematically giving us the wrong advice about how to do it. The result is that policies we know are needed are not put in place; technologies that would work are not deployed; finance that is available is not invested. Part II of this book investigates what has gone wrong and shows how a different approach to economics can be a better guide to fast and effective action.

Diplomacy, for its part, has been picking the wrong battles. For three decades, international talks have focused on countries’ long-term economy-wide emissions targets. As we have increasingly accepted the impossibility of agreeing these targets, negotiations have become ever more focused on process, while matters of substance—everything that determines whether emissions go up or down—are left to countries to manage individually. We have all heard rhetoric about climate change being ‘a global problem that needs a global solution’. But the reality is we have agreed not to agree; we have become collaborators in non-collaboration. When we go back to first principles, we can readily imagine a way that countries could work together to speed up progress, despite their different interests and competing concerns. Staggeringly, in most respects, serious cooperation of this kind has barely even begun. Part III of this book tells the story of climate diplomacy so far, and sets out how it must be substantially different in its next stage, to effect real—and faster—change.

These criticisms may sound harsh, especially to some of the people working in those fields. In climate change science, economics, and diplomacy there is a great diversity of activity taking place, including movements for change in the directions I am advocating. The target of my criticism is not the frontier of academic knowledge, but the way in which knowledge is being put to use. My concern is less about the best practice and more about the dominant practice. The dominant practice is what decides the pace of change, and in the fight against climate change, speed is everything. Winning slowly is the same as losing.

The good news is that in each of these areas there are structural changes we could make that would give us a better chance of success. Risk assessments that give a clear view of the threat can motivate leaders to do more to address it, without requiring any underlying change in values or preferences. Economics that understands change can enable policies to be dramatically more effective, with the same level of political and financial capital. Diplomacy that is targeted in the right way can help all countries reduce their emissions more quickly, without needing them to take a different view of their national interests.

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I wrote this book because I believe this set of problems and solutions is radically under-recognised. The movements for change are growing, but still far too few people recognise the need or even the possibility of doing things differently. Changing institutions from within is difficult – there is great inertia to overcome – so those who are pushing for new approaches need help from outside. But for the most part, the NGOs are not campaigning for the reforms that are needed, and the media is consistently missing the point. Too often, the loudest voices in the climate change community repeat the refrain that everyone needs to ‘raise ambition’, in other words, ‘try harder’, as if that were all that is needed.

What I advocate here is certainly not the full set of solutions to climate change, and I do not pretend that it will make all the difference. Avoiding dangerous climate change will be a long and hard battle, and we have made a slow start. I do not know if we can win. But I am sure that if we do not channel our efforts more effectively, we will have absolutely no chance. I believe that in these ways of doing things differently – rethinking our approach to the science, the economics, and the diplomacy – there are plausible grounds for hope. And wherever you stand, whether you are a concerned citizen or a politician, an activist or an investor, there are things you can do to help shake up complacent institutions and promote the spread of new ideas.
PART I

SCIENCE
One day in the autumn of 2013, I was eating lunch with some of the top climate change advisers to the government of China. They were visiting London to meet UK government officials and academic experts and talk about climate change and energy policy. At the time, I was a junior official at the Foreign Office.

Over a bowl of Thai chicken curry, I asked one of the Chinese visitors, ‘How well do you think your political leaders understand the scale of the risks of climate change? How big a risk do they think it is?’ He answered, ‘Not well at all. They think it’s a small, incremental change, that we’ll be able to adapt to it, and we will be OK.’ I asked if he thought there was a need for the risks to be better assessed, and better communicated to people at the top of government. ‘Definitely,’ he said. ‘It’s only if they think it’s a catastrophic risk that they will act on it.’

I had had to argue hard with my colleagues at the UK Department of Energy and Climate Change to be allowed to organise a single meeting in the programme of the Chinese visitors on the subject of the risks of climate change. There was no need, I’d been told; ‘the Chinese government accepts the science of climate change’. I found this an oddly binary way of thinking about risk. National security advisers who are responsible for protecting their countries against terrorism and war do not just accept that these risks exist. They do their best to understand how large each risk is, so that they can decide how much effort to put into containing it. The same is true for a doctor treating a patient with a serious disease, or an engineer considering a structure that might be unstable. Why should climate change be any different?

The more I thought about it, the more idiotic it seemed that we could be satisfied with the knowledge that political leaders accepted the reality of climate change, without wondering how thoroughly they understood the risks posed by it. The conversation with the Chinese experts was enough to convince me that not all was as it should be. If the leaders of the world’s largest emitter of greenhouse gases thought that everything was going to be fine, then there was a high chance that we were all going to be screwed.
Something clearly needed to be done so that world leaders properly understood how bad things could get if they didn’t act in time. I started working up ideas for a project that would expose the shortcomings in climate change risk assessments and show how they could be done better. As I began sharing these ideas, I met a surprising amount of resistance.

The argument that there was no need to work on improving risk assessment because governments already ‘accepted the science’ came up often, despite being, when you think about it for a second, ridiculous. Perhaps it was a legacy of the well-funded climate denial movement, which had cowed environmental campaigners into an over-cautious way of talking about climate change. In 2009, researchers in the United States and United Kingdom had been accused of manipulating data to exaggerate the risks of climate change. Their email accounts had been hacked, their conversations misrepresented, and their reputations attacked in the media. Investigations eventually showed that the accusations were entirely unfair, there was nothing fundamentally wrong with the scientists’ findings, and they had in no way falsely manipulated data. But by that time, a great deal of doubt about climate science had been sown in the minds of the public, and the climate science community had been traumatised and intimidated. The campaign of climate change misinformation has been estimated to receive funding of around a billion dollars a year in the US alone.¹ It is a powerful and frightening force. In the face of such an enemy, perhaps it is not surprising that many people working on climate change became content simply for its reality to be recognised, even while its risks were under-recognised.

The second argument against fully assessing the risks of climate change was that such ‘doom-mongering’, or even, as one of my colleagues once angrily called it, ‘shroud-waving’, would be counter-productive. This argument was potent because it seemed to be backed by academic research. Prominent experts in the communication of climate science had written that if people were told how bad climate change could be, it caused them to ‘switch off’ and give up all hope of doing anything about it. The contrast between the enormity of the problem and the futility of what they might individually do about it – such as switching off lightbulbs – was so great that people’s instinctive psychological response was to disengage entirely. The argument went that such communications therefore did more harm than good.

The limitations of this argument, I realised, were that it applied to individuals, but not to governments. Individuals are free to react to unwelcome news of things they can do little about by ‘switching off’; that is their right. Governments have no such right. The whole point of having a government is to take difficult decisions on behalf of society. Institutions