

Sample translation from

How Are We Going To Explain This? Our future in the face of global warming

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‘Our task is to make trouble, to stir up potent response to devastating events, as well as to settle troubled waters and rebuild quiet places.’ –
Donna J. Haraway, *Staying with the Trouble*

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Preface

Let's be honest, climate change is a really off-putting subject. I've been working on it continuously for five years now and it still makes me recoil in horror. So if you hesitated to pick up this book, I completely understand.

To begin with there's the word 'climate'. The problem isn't so much its technical meaning: 'the average weather over a period of at least thirty years'. The term was thought up to enable people to make general claims about the weather in a particular place. The Netherlands, for instance, has a more moderate, cooler climate than India. For most people and for most of our recent history the climate has been a given, about as exciting as the slow flow of glaciers or the composition of the air we breathe. Background. Fodder for experts.

But we all know that the word 'climate' currently has completely different connotations. Threat. Danger. In recent years the experts have been telling us in ever starker language that the climate is changing drastically due to human intervention. Not in one place, not in the Netherlands *or* India, but everywhere at once. They're telling us that the earth is warming up, that rising sea levels are threatening coastal cities, that heatwaves are more often unbearably hot, that the global food supply is under pressure. They're telling us that continuing on our current path will almost certainly lead to worldwide catastrophes – and is already doing so.

On my computer I have a folder where I collect news and studies about the changing climate. It's an expanding invitation to despair. Every month another article comes along to make me think, *it's even worse than I thought!* Just as I'm getting over the shock of one extensive study stating that this century hundreds of millions of people will suffer water shortages due to melting ice in the Himalayas,⁽¹⁾ the next blow hits home: in the coming centuries it could get so hot that part of the cloud cover disappears,⁽²⁾ resulting in further heat from the sun reaching the earth, in turn leading to an uninhabitably hot earth.⁽³⁾

No one knows if it will come to that. It's also possible that temperatures will rise slower than currently expected and that we'll adapt better than seems possible in our wildest dreams. But we have no guarantee whatsoever of those outcomes, and there's no alternative earth.

The truth of the matter is, we're in unbelievably deep shit. Mankind has never experienced the warmer climate we're heading for. Local droughts, local flooding, local extreme weather conditions – we're used to all that, but nothing in history has prepared us for worldwide climate disruption, with

many consequences that are unpleasant in themselves and disastrous when combined.

We're entering completely new territory. The longer we continue on our current path, the more devastating the results.

Everyone's dealing with global warming in their own way. Tom, one of my best friends, prefers to turn a blind eye.⁽⁴⁾ Recently he said as much, when we went for coffee and talked about this book: 'I choose to look away.' He wants to get on with his life without feeling terrible the whole time about the state of the planet. He's certainly worried about the climate, but has no confidence in the government, because they're doing far too little. He doesn't trust businesses either, because in the end they always choose profit and, in doing so, often magnify the problem. And he feels he can't rely on his fellow human beings, because even people who are well aware of the facts still contribute to global warming. Then there are the deniers in politics, who sometimes win elections with the message that we shouldn't do anything about the climate.

On my bad days, I share Tom's despair. There are governments, organisations and citizens who do their utmost to limit the warming, but collectively, mankind – that's to say *we* – are still doing far too little. Hypocrisy is rife. I can bear witness to that. On the one hand I'm writing about global warming, I believe fervently that we should do more, and I have made a number of adjustments in my life because I'm worried about the environment. For example, I no longer eat meat and stopped flying last year. But I still sometimes drive a car and while writing this book I skied for the first time in my life, on artificial snow, would you believe. I'd be deluding myself if I pretended to be making a 'positive contribution' – when you look at the pollution I cause, that's clearly nonsense. At best I'm less of a burden to nature each year, recycling and composting a little more than the previous year. But that's really no reason to get all self-congratulatory. When it comes down to it, I'm still a polluter.

How do I explain this if someone in the future asks me what I did to keep the world habitable? It's an awkward question. I don't have a good answer. And I wish it wasn't there: that gnawing guilt, the fear, the despair.

So I decided to go on a quest. I went in search of ways to keep on looking without despairing. I looked for an answer to the question of precisely how bad the climate situation is, and whether we have a credible chance of stopping global warming at all. I researched which interventions could make a difference and why.

In the last five years I've spoken with scientists and policy makers, with lobbyists and Shell employees, with activists and politicians from both mainstream and environmentalist parties. I attended climate demonstrations and industry roundtable discussions; I went to Paris for the big climate summit in 2015, and to South America to find out why Ecuador felt the need to extract oil in the Amazon rainforest. (The worldwide demand for oil, in part caused by the plane that flew me to Ecuador, was certainly part of the answer.)

In this book I share the insights I had along the way. I describe how we got here, how things could get worse (if we let it happen) and how they could get better (if we choose to make positive changes).

In Part 1 I dive into history, because we can only move forward if we know why we got into trouble in the first place and what that trouble precisely entails.

In Part 2 I describe two future scenarios. The first outlines a possible future if we continue to live our lives as we do now. The second shows what could happen if we take radical steps towards sustainability.

In Part 3 I sketch how we can achieve that sustainable future. Waiting and hoping for the best isn't enough. Forces both old and new are in the process of shaping the future, and the question is which ones we encourage.

In recent years I've discovered that people *can* bring about change if they act together. Not in some utopian future, but right now. Although you may not notice it much in everyday life, growing numbers of people are taking action. They don't believe that the future is something that just happens to us. And they're right: the story we'll tell our (grand)children later is one we're writing right now.

I use the words 'we' and 'our' very consciously. This book is really about all of us. It's about our collective history and our shared future. Everyone has their own position and their own ideas, but however diverse we are, in the end we all live on the same planet and share one global climate. I won't go on about it, but I'll regularly write 'we' because this involves all of us.

In this book I want to show that there's a way of looking at things in which despair is the start of something new, instead of a reason to look the other way.⁽⁵⁾ There's a new story in the making, one in which the consequences of our actions add up – and every contribution is meaningful.

That's not to say that everything will be fine forever,⁽⁶⁾ but that we have a chance to make a decisive change. The story I'm going to tell doesn't revolve around having or doing 'less' – less flying or less driving. It's about more and better: more happiness, more prosperity, better health. On my good days, I have the courage to say it out loud: everything is still possible.

This book is for all the Toms out there. For everyone who feels inclined to look away, but knows in their heart that that's not a solution. For everyone who finally wants to know precisely what's going on with the climate. For everyone who wants to make a useful contribution, however big or small. For everyone who thinks we'll never solve this but remains open to being thoroughly surprised.

Part I

What's wrong?

I. How we got into trouble

Let me start at the beginning. Not with the climate, but with nature and all living things, as well as our relationship to them.

No living being exists in isolation. You wouldn't be able to read this book without the 38 billion bacteria that live in your gut and convert food into usable energy.⁽⁷⁾ But it's all too easy to forget those bacteria and make it through the day thinking you're an autonomous individual.

On a small scale, these feelings of autonomy are harmless enough. Gut bacteria digest my food, even when I ignore my dependence on them (99 per cent of the time). Trees produce the oxygen I breathe, whether or not I feel any kind of connection to them.

But when we collectively forget how fully entangled we are with other living beings, that's when we get into trouble.

Look at insects. Not only do they form the primary food source of many freshwater fish and the vast majority of birds, but by flying from flower to flower, insects such as bees also pollinate three quarters of all crops consumed by humans. That means they're virtually indispensable.

Agricultural chemicals are partly to blame for the disappearance of 80 per cent of insects in some areas.⁽⁸⁾ Yet this worldwide decline rarely makes the front pages;⁽⁹⁾ rarely is it a topic of debate in the run-up to elections. It's as if we think insects don't *really* matter, or at least not enough; as if society and the demise of these insects are somehow two entirely separate issues. Caring about 'the environment' – the natural world that's home to plants, humans and other animals – seems to be considered optional rather than essential.

How did this division between humans and all other living creatures come about? Why do we often see ourselves as living outside of nature, while the oxygen in our lungs, the bacteria in our stomachs and the pollinators of our food prove that we're all inextricably linked? To answer these questions, I'm going to take you back in time.

The beginning: hunter-gatherers in nature

Our species, *Homo sapiens*, emerged some 300,000 years ago in what is now known as Africa.⁽¹⁰⁾ For much of our development, earth was going through an ice age. Thick ice caps covered the continents, like walls of ice that determined where life could and couldn't go.

For tens of thousands of years we lived on the African Savannah. Under harsh and often fluctuating climate conditions we discovered how to make fire and developed our greatest evolutionary advantage: as a species we can learn from one another.

[...]

5. Future scenario 1: Walls

Year: 2050

Country: The Netherlands

Global warming since the industrial revolution: 2.6° Celsius

It has become difficult to exercise outdoors, as the summers are too hot these days. For a while it looked as if we were going to have the sort of weather that the South of France used to enjoy, but we soon overshot those pleasant temperatures. This summer we had dozens of long, languid days with the kind of stifling heat that gives you headaches. One of the targets set by the Ministry of Climate Management is that by 2055 all households should have air-conditioning, but everybody knows there's not enough money to realise this ambition.

The economy is struggling. Our export of agricultural products has declined due to heat and drought, increased soil salinity and torrential rainfall. Food prices have rocketed worldwide, while the costs of the new Delta Works, the Dutch flood defence system, are steadily mounting.

Dike elevations are keeping the polders dry for the time being, but the overriding concern now is that the Netherlands will fill up like a bathtub during the rainy season, when lengthy downpours in the interior cause the Rhine and the Meuse to burst their banks.

The National Flood Plan provides for the sacrifice of nature reserves, farmland and small villages. But despite these drastic measures, the government cannot guarantee that residents of the Randstad, the built-up area encompassing the country's major cities, will keep their feet dry. Only the providers of climate-proof housing projects are in a position to offer such assurances, but you have to be a multi-millionaire to live in one of those.

Fortunately, with Europe's Ministers of Defence having pledged to protect the continent's border walls, we're shielded from the unrest elsewhere in the world. But that doesn't stop us from seeing footage of people trying to climb over, in search of a better life.

The picture is bleak, and it's hard to remain optimistic about the future now that the tundra is emitting more and more greenhouse gases, nearly all tropical coral reefs have been destroyed and scientists are saying that the Amazon rainforest is rapidly drying out and beyond saving.

*

As you can see, climate change is escalating in this future scenario. Governments are doing all they can to manage the consequences, because we have collectively failed to mitigate global warming. A safe and comfortable life is set to become the preserve of a wealthy minority, even more so than today. In this scenario, society is in a state of constant heightened tension, which could spiral even further out of control at any moment.

How would we end up in this future world?

The astonishing thing is that not much needs to change for this to happen. If we allow the current financial and political systems to continue as they are, we'll automatically end up in this situation. Drawing on developments past and present, I will demonstrate why this is a realistic scenario.

Business as usual

Let's take a look at Shell, one of the biggest oil companies in the world. In recent years I have done a great deal of research into the Anglo-Dutch firm. I interviewed dozens of employees and was given access to internal documents from the 1980s and 1990s that reveal what the company knew and what it was thinking about the climate. The conversations and documents all point to one conclusion: Shell is extremely worried, now as much as then.

Here's why. In an internal study carried out in 1986 and published in 1988, Shell researchers warned of 'relatively fast and dramatic changes' to the earth's climate, which would impact 'the human environment, future living standards and food supplies, and could have major social, economic and political consequences'.(173)

In 1991 – fifteen years before *An Inconvenient Truth*, the documentary about former US vice president Al Gore's efforts to raise public awareness of global warming – Shell made a film warning about the consequences of climate change. 'Action now is seen as the only safe insurance,' the voice-over says.(174) With this film, aimed at the general public and shown at special screenings, particularly in schools and universities, Shell wanted to initiate a public debate about possible solutions.(175)

Not all oil companies were as forthcoming as Shell about this, but they'd certainly all long been aware that there was a problem.(176) As early as 1968,

the whole American oil industry was warned that CO₂ emissions were a leading cause of climate change. It was their own trade association, the American Petroleum Institute (API), that sounded the alarm in an internal document.(177)

How is it possible, then, that Shell – like the other oil majors – continues to extract fossil fuel, while also investing heavily in exploration?

The answer is simple: the companies have no choice. There is demand for energy, shareholders expect dividends and competitors will gobble up any bit of market share that Shell surrenders. If Shell doesn't extract the oil, so the story goes within the firm, another player will.(178)

Every Shell worker is a tiny cog in this big machine, an employee told me,(179) and changing direction is something not even the chief executive can do. Leaving fossil fuels in the ground is 'not the mission entrusted to me by the shareholders', Shell CEO Ben van Beurden said in 2016.

Shell is an example of a company full of people with the best intentions who are nevertheless incapable of achieving what is necessary: transformative change.(180) The company is pressing ahead with what it has always done, even though the extraction of new fossil fuel is becoming harder and more expensive and, like many other fossil-energy-based companies, it has incurred debts in recent years to carry on paying dividends.

Notes

Preface

1 Philippus Wester *et al.*, *The Hindu Kush Himalaya Assessment*, Springer International Publishing (2019). For a summary see: Chelsea Harvey, 'World's "Third Pole" Is Melting Away', *Scientific American* via *E&E News* (4 February 2019).

2 The study appears here: Tarpio Schneider *et al.*, 'Possible climate transitions from breakup of stratocumulus decks under greenhouse warming', *Nature Geoscience*, Vol. 12 (2019), pp. 163-167. For a summary see: Zeke Hausfather, 'Extreme CO₂ levels could trigger clouds "tipping point" and 8C of global warming', *Carbon Brief* (25 February 2019).

3 Natalie Wolchover, 'A World Without Clouds', *Quanta Magazine* (25 February 2019).

4 The name Tom is made up to preserve his privacy.

5 I derive this insight from the Italian philosopher Giorgio Agamben. To him, 'despair is a moment of possible change, and therefore a reason for hope'. Source: Joe van der Meulen, 'Profiel van filosoof Giorgio Agamben: Gids door de hel' (Profile of philosopher Giorgio Agamben: A guide through hell), *De Groene Amsterdammer* (2015), no. 27-28.

6 In her essays, Rebecca Solnit repeatedly makes this point about hope. See for example the introduction of: *Hope in the Dark: Untold Histories, Wild Possibilities*, Haymarket Books (2015), p. xvi. 'A victory [in a social struggle] doesn't mean that everything is now going to be nice forever.'

Notes: Chapter 1

7 The figure 38 billion is an estimate for 'reference man'. The figure varies from one individual to another. Source: Ron Sender *et al.*, 'Revised Estimates for the Number of Human and Bacteria Cells in the Body', *PLOS Biology*, Vol. 14, Issue 8 (2016).

8 For a fine review of the research into declining insect numbers, see Brooke Jarvis, 'The Insect Apocalypse Is Here: What does it mean for the rest of life on Earth?', *The New York Times Magazine* (27 November 2018).

9 A study in Great Britain found that the press gives eight times more coverage to the climate than it does to biodiversity. Pierre Legagneux *et al.*, 'Our House Is Burning: Discrepancy in Climate Change vs. Biodiversity Coverage in the Media as Compared to Scientific Literature', *Frontiers in Ecology and Evolution*, Vol. 5 (2018).

10 Ewen Callaway, 'Oldest Homo sapiens fossil claim rewrites our species' history', *Nature* (7 June 2017).

Notes: Chapter 5

173 1988 Shell Confidential Report 'The Greenhouse Effect', Shell (1988). I have made this document public on *Climate Files* (2018).

174 J. Mommers, 'Shell erkent al dertig jaar het gevaar van klimaatverandering (en deze film bewijst dat)' (Shell acknowledged the risk of climate change thirty years ago (and this film proves it)), *De Correspondent* (28 February 2017).

175 J. Mommers, 'Waarom maakte Shell een alarmistische film over klimaatverandering?' (Why did Shell make an alarmist film about climate change?), *De Correspondent* (28 February 2017).

176 A fine review of the oil industry's early knowledge can be found in Carroll Muffett and Steven Feit, 'Smoke and Fumes: The Legal and Evidentiary Basis for Holding Big Oil Accountable for the Climate Crisis', *CIEL* (November 2017). See also Benjamin Franta, 'Early oil industry knowledge of CO₂ and global warming', *Nature Climate Change*, Vol. 8 (2018), pp. 1024-1025.

177 E. Robinson and R.C. Robbins, 'Sources, abundance, and fate of gaseous atmospheric pollutants', *Smoke & Fumes* (1968).

178 J. Mommers, 'De Sheldialogen (1): "Ik maak me zorgen over het klimaat en ik loop niet in een spagaat op mijn werk' (The Shell Dialogues (1): "I worry about the climate yet I'm not caught in a bind at work")', *De Correspondent* (5 May 2016).

179 J. Mommers, 'De Sheldialogen (6): Shellers verschuilen zich achter de hypocrisie van de consument' (The Shell Dialogues (6): Shell workers are hiding behind consumer hypocrisy), *De Correspondent* (7 July 2016).

180 I wrote the following article about the history of Shell: J. Mommers, 'Reconstructie: Zo kwam Shell erachter dat klimaatverandering levensgevaarlijk is (en ondermijnde het alle serieuze oplossingen)' (Reconstruction: Here's how Shell discovered that climate change is a danger to life (and undermined all serious solutions)), *De Correspondent* (28 February 2017).