

## The Environment versus the 4th Industrial Revolution

If you take a minute to look at the technology rolling out in the world around, you could be forgiven for thinking you were in the prelude of a futuristic novel. Automatic cars park themselves, glass phones tell your heating to come on several miles away, on a windy day the entire energy supply of a country is delivered by just the breeze.

This is 2019, and our world is on a cusp of a revolution in artificial intelligence (AI), machine learning (ML), automation, and connectivity. The coming decades will see monumental shifts in the digital forces in our lives, with computers able to match and surpass humans in much of our everyday lives. This is already happening in specific and targeted ways, with computers now better able to identify tumors in x-rays scans than the most seasoned radiologists, and automatic cars far outperforming humans in accident rates.

This revolution, coined by the founder of the World Economic Forum Klaus Schwab as the 'Fourth Industrial Revolution', is approaching at terrific - if not terrifying - speed and it is expected to disrupt vast swathes of our lives. A huge amount of thinking has already gone into discussing what impact this will have on our jobs, how we live fulfilled lives, and how to manage the social consequences. It is highly likely that 'generalised' artificial intelligence (that is, the ability of an AI to do broad and undefined tasks) will kill off entire job sectors - what use is a paralegal who can research case law for a client at a rate of £200 an hour when IBM's Watson (the AI which famously won US game show 'jeopardy') can be rented out for half the cost and do the task in a hundredth the time? Many world leaders are already considering that this loss of human dominance in the workplace, including for jobs that have traditionally been considered as highly skilled, will mean for their populations, and specifically how we manage society through such a change.

Remarkably, however, few have given much if any thought to what impact this impending revolution will have on the world itself. The natural world, within which it will take place, is rarely thought about by futurists and those studying and predicting the complex future of our world. When it has been considered, such thinking has largely been constrained to what resources it can provide for further growth in intelligence or development. As Eliezer Yudkowsky rather bleakly stated in a 2006 paper, *"The AI does not hate you, nor does it love you, but you are made out of atoms which it can use for something else."*

Clearly the first industrial revolution had fundamental and lasting impacts on our natural world, many of which we are still responding to. It saw entire habitats changed unrecognisably, species go extinct, and the world's environments bend to society and industry's desires. Ultimately it had such an impact that it led to the rise of environmentalism itself.

In this book we shall explore what the future might hold for our environment, whether this coming revolution in technology will help us attain a more sustainable society or result in ecological disaster, how we will use our natural assets in the future, how the environmental movement is preparing for and making use of the advancements stemming from the fourth industrial revolution, and ultimately what our natural world will look like on the other side.