

N. Maxwell, April 2021, *The World Crisis – And What To Do About It: A Revolution for Thought and Action*, World Scientific.

## Preface

This book spells out what we need to do to solve the global problems that threaten our future: the climate crisis; the current pandemic; the destruction of the natural world, catastrophic loss of wild life, and mass extinction of species; lethal modern war; the spread of modern armaments; the menace of nuclear weapons; pollution of earth, sea and air; rapid rise in the human population; increasing antibiotic resistance; the degradation of democratic politics, brought about in part by the internet.

I argue that all these problems have come about because we have solved the first of two great problems of learning – the problem of learning to acquire scientific knowledge and technological know-how – but have so far failed to solve the second great problem of learning – learning to create a civilized world. Modern science and technology make possible modern industry and agriculture, modern hygiene and medicine, modern power production and travel, modern armaments, which in turn make possible much that is good, but also all the above global problems.

Science as such is not the problem; it is, rather, science without wisdom. All the above problems have arisen because we have modern science without wisdom. Now that we have solved the first great problem of learning, we must discover, urgently, how to solve the second one. We can do that if we learn from how we solved the first great problem of learning how to solve the second one.

That requires that we bring about a radical transformation in universities all over the world. At present they are devoted to the pursuit of specialized knowledge and technology. They need to be transformed so that the basic task becomes to help humanity tackle problems of living, including global problems, in increasingly cooperatively rational ways.

The book spells out in detail the changes that need to be made to academic inquiry, why they need to be made, and how they would enable universities to help humanity actively and effectively tackle and solve current global problems.

## Chapter 1 The World Crisis

The world is in crisis.

One would think that a book with a first sentence like that, written in 2020, has to be about the coronavirus pandemic. In what follows, I will indeed have some things to say about the pandemic. But this book was conceived long before the coronavirus unleashed its deadly attack upon humanity; it is about an older, and far more serious world crisis. It is a crisis that stares us in the face, and yet in practice it is all-but ignored. Only token actions are taken in response to it. The many manifestations of the crisis tend to be considered in isolation from one another; they are not understood to be diverse aspects of one gigantic crisis that menaces our future. There is hardly any understanding as to what the nature of the crisis is, and almost none as to the key thing that needs to be done to put a stop to it. A basic message of this book is that many of the very serious global problems that threaten our future have a common origin, a common cause, and require for their resolution, in important ways, common actions. It is only if we see and understand the interconnections between these diverse global problems that we are likely to appreciate the full extent and seriousness of the world crisis that we face – and are likely, much more important, to be able to summon up the capacity to solve these problems.

The crisis has indeed many diverse aspects to it.

It is glaringly apparent in the climate crisis. Carbon dioxide (CO<sub>2</sub>) in the atmosphere continues to rise because of human activity, the temperature of the earth rises as a result, storms intensify, ice at the poles melts, sea levels rise and, as I write, forests in Australia, Brazil and elsewhere are engulfed by fire. If present trends continue, whole areas of the earth's surface will become uninhabitable, and millions, possibly billions, of people will die.<sup>1</sup>

We have known about global warming for a long time. John Tyndall, an Irish physicist, discovered the crucial property of CO<sub>2</sub> in 1859. He discovered that CO<sub>2</sub> absorbs infrared light. It is this that makes CO<sub>2</sub> a greenhouse gas. Light from the sun shines on the surface of the earth, and some is reflected back as infrared light; this is absorbed by CO<sub>2</sub> in the atmosphere, and re-emitted, some back to the earth. The more CO<sub>2</sub> there is in the atmosphere, the more infrared light is absorbed and re-emitted back to the earth's surface, and the hotter the planet gets. In 1896, Svante Arrhenius, a Swedish physicist, realized that industrialization would have this effect: the planet would heat up. But he thought it would not matter; living in Sweden, a cold country, he thought a bit of warming would be good. In 1938, Guy Callendar gave a lecture to the meteorological society in London in which he presented evidence that the earth was already getting hotter as a result of emissions of CO<sub>2</sub>. Callendar also thought it would be a good thing.<sup>2</sup>

It was however in the late 1950s that we really learned that we are increasing the amount of CO<sub>2</sub> in the atmosphere, year on year, as a result of the fossil fuels that we burn, gas, oil and coal. David Keeling, an American scientist began, in Hawaii, to make very accurate measurements of the amount of CO<sub>2</sub> in the atmosphere – so accurate that he could detect that levels of CO<sub>2</sub> went up in the Autumn, due to the decay of leaves, and went down in the Spring as a result of new plant growth (which absorbs CO<sub>2</sub>). The overall tendency was however clear; year by year, the amount of CO<sub>2</sub> in the atmosphere was increasing at an alarming rate, sufficient to raise the average temperature of the planet.<sup>3</sup>

Many climate scientists hold that if we continue to respond to the climate crisis in the ineffective way that we have done so far, the average temperature of the earth will rise by 3° centigrade by the end of the century, if not higher. That would be a disaster. It would trigger events that would be catastrophic: the melting of ice in the Antarctic and Greenland, and the rise of sea levels leading to the flooding of major cities and densely populated coastal land; the destruction of tropical rain forests, with the further emission of CO<sub>2</sub>; the thawing of tundra in northern Russia and elsewhere, and the release of vast quantities of methane, a far more powerful greenhouse gas than CO<sub>2</sub>; and possibly the melting of even greater quantities of frozen methane hydrates, at present beneath the oceans, leading to the release of even greater quantities of methane. Once 3 degrees centigrade is reached, in other words, all sorts of irreversible processes are triggered which lead, remorselessly, to the planet heating up even more.<sup>4</sup> Great tracts of the earth's surface might no longer support human life – because of flooding, drought, fires, temperature. Billions of people will die – because of floods, drought, fires, starvation, and war.

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<sup>1</sup> For a wonderfully readable and utterly terrifying account of diverse aspects of the climate crisis, see Wallace-Wells (2019). Detailed claims about the grim future we face are backed up with a wealth of references to relevant technical climate science literature.

<sup>2</sup> See <https://www.wired.com/story/meet-the-amateur-scientist-who-discovered-climate-change/> (accessed 21/11/2020).

<sup>3</sup> For an excellent history of the discovery of climate change, see Weart (2008, *The Discovery of Global Warming: Revised and Expanded Edition*, Harvard University Press, Cambridge, MA.

<sup>4</sup> Some of these processes have begun to happen as I write in 2020.

The climate crisis is the worst of our global problems, but there are others too that threaten our future. There is the destruction of natural habitats, the rapid loss of animals in the wild, and the devastating extinction of species. There is massive and, in some respects, growing inequality in wealth and power around the globe. According to Oxfam, the wealthiest 26 people – yes, a mere 26 people – own as much as the poorest half of the world's population.<sup>5</sup> There is the lethal character of modern war. Whereas around 12 million people died in wars in the 19th century, over 100 million died as a result of war in the 20th century, and we are not doing too well in the 21st century so far. There is the spread of modern armaments around the world, conventional, chemical, and possibly biological.<sup>6</sup> There is the menace of nuclear weapons ready to be unleashed at the touch of a button. On several occasions in the past a flock of geese, the moon, or malfunctioning equipment has signalled incoming missiles; all-out nuclear war has only been averted because key officials have disobeyed orders. As long as nuclear weapons are ready to be unleashed at a moment's notice, sooner or later they will be unleashed, whether because of rising tension, war, accident, malfunctioning equipment, or hacking. The mere existence of nuclear weapons threatens our future.

There is the problem of pollution of earth, sea and air: plastic and acidity in the oceans devastates ocean life; pollution of air kills millions of people, and CO<sub>2</sub> pollution causes global warming. There is the problem of growing resistance of bacteria to drugs as a result of the misuse of antibiotics. We face the dreadful possibility that we may return to the state of affairs in the 19th century, when trivial infections would lead to death, and diseases such as TB had no effective treatment. There is the explosive rise in the world's population. In the middle of the 19<sup>th</sup> century there were one billion people; there are now 7.8 billion. It is estimated that there will be as many as 11 billion people by the end of the century. There are the threats to democracy that stem from the internet: governments, political parties, and other interested bodies, spread deception and lies on social media, and subvert democratic elections. And there is the coronavirus pandemic, which caused over 1.7 million deaths world-wide towards the end of 2020, and has undermined economies and disrupted social and cultural life.

What makes many of these threats to our future all the more serious is that they interact with and intensify one another. At a time when the world's population goes up, and more food is required to keep hunger at bay, the capacity of the world to produce food may well go down because of loss of land fit for agriculture due to climate change. Again, as the population increases, the area of the earth's surface capable of supporting human life goes down, due to adverse weather conditions and rising sea levels. Millions of people, in north Africa, parts of Asia and elsewhere, living in areas that increasingly fail to support any kind of human life, will seek to move into neighbouring areas, also degraded and under threat, and so incapable of accommodating refugees. These are circumstances all too likely to provoke war. As global problems intensify, it becomes all the more important that the nations of the earth find ways to cooperate with one another to discover how best to resolve the crises. But as the crises intensify, conditions likely to provoke violent conflict proliferate, and cooperation becomes all the more difficult to achieve. It is possible that we now have only a decade or so to put in place measures capable of coming to grips with these grave problems. If we do not do now what needs to be done, the world may descend into even greater anarchy and chaos than what we have at present.

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<sup>5</sup> See <https://www.theguardian.com/business/2019/jan/21/world-26-richest-people-own-as-much-as-poorest-50-per-cent-oxfam-report> (accessed 21/11/2020).

<sup>6</sup> See Smith, 2003, *The Atlas of War and Peace*, Earthscan, London

Why have all these crises, so distinctive of the 20<sup>th</sup> and 21<sup>st</sup> centuries, come upon us just now in human history? Humanity has experienced plagues, drought, famine, and other disasters many times in the past, but the global crises we face today seem especially distinctive and characteristic of our age. What is it about our times that caused these specific crises to arise just now in human history? Why this state of unprecedented global emergency?

There is a reason. It will be discussed in the next chapter.