Contents

Introduction	
Chapter 1 Living in the tension between progress and crisis	11
 The reality of progress A multitude of intertwined crises? The ecological crisis as a spiritual crisis: an exploration 	11 15 22
Chapter 2 What is spirituality?	31
 2.1 A first exploration of the concept of spirituality 2.2 A more elaborate model of what spirituality means 2.3 Sources of spirituality: religion, natural science and technology 2.3.1 Spirituality and religion 2.3.2 Spirituality and natural science 2.3.3 Spirituality and technology 	32 33 40 40 56 61
Chapter 3 Religion and natural science: Separation or conflict?	75

3.1	Models for thinking the relationship between religion and natural science		
3.2	Can religion remain separated from natural science?		
	3.2.1 Stephen Jay Gould's NOMA principle	81	
	3.2.2 An evaluation of the NOMA principle	83	
	3.2.3 Conclusion	96	
3.3	An argument for the incompatibility of natural science and religion		
3.4	4 Transition to the next chapter		

Chapter 4

Religion and natural science: Beyond conflict?		107	
4.1		ncounter between Islam and modern science begins	108
	4.1.1	Ernest Renan on Islam and science	109
	4.1.2	Jamāl ad-dīn al-Afghānī's response to Renan	111

	4.1.3	Al-Afghānī on the importance of religion and Islam as the most rational	
		of religions	114
	4.1.4	Another response to Renan: Namık Kemal	118
	4.1.5	Sayyid Aḥmad Khan on the harmony between reason and revelation	119
	4.1.6	Muhammad [`] Abduh on the harmony between reason and religion	123
	4.1.7	How Sayyid Aḥmad and ʿAbduh read the Qurʾān	130
	4.1.8	Transition to the next section	132
4.2	The encounter between Islam and modern science continues		133
	4.2.1	Modern science is objective and universal	133
	4.2.2	Scientific exegesis of the Qur'ān	135
	4.2.3	Miraculous scientific content of the Qur'ān	143
	4.2.4	The rise of Islamic creationism	148
	4.2.5	Criticism of scientific exegesis and the idea of scientific miracles in the Qur'ān	153
	4.2.6	Transition to the next section	159
4.3	Exploring Islamic science through the work of Ziauddin Sardar		
	4.3.1	Sardar's understanding of science as civilisation-specific	162
	4.3.2	The basic principles of Sardar's Islamic science	169
	4.3.3	Did Sardar's Islamic science materialise, and what are its prospects?	175
4.4	Conclu	usion	185

Chapter 5

From the ecological crisis to the Anthropocene		
5.1 What is the ecological crisis?	201	
5.2 Focus on climate change	207	
5.3. Beyond climate change: Welcome to the Anthropocene	220	
5.4. Why haven't we solved climate change yet?	222	
5.5. Transition to the following chapters	238	

Chapter 6

Cha	apter 6	
The greening of the world's religions		
6.1	Lynn White on the relationship between religion and ecology	245
6.2	The reception of White within the Abrahamic religions	249
6.3	Pope Francis, the green pope	254
6.4	Some ecological ideas in the non-Abrahamic religions	262

Chapter 7

Earth system science as a source of spirituality?			273
7.1	Two io	onic photos: Earthrise and Blue Marble	273
7.2	James Lovelock's Gaia hypothesis		280
	7.2.1	The discovery of Gaia	281
	7.2.2	Criticism, Reply and Reception	286
	7.2.3	Gaia between science and religion	298

Chapter 8

Religion and irreligion in environmentalism		
Climate change religion?	311	
Michael Crichton on environmentalism as a religion	316	
The ecomodernist criticism of Laudato si'	320	
Ecological conversion or technological innovation?	327	
oi	343	
What is the relationship between technology and religion?	343	
Hope and optimism: necessary or part of the problem?	352	
Environmentalism and faith in science	359	
The pain of being connected with Nature	372	
	Climate change religion? Michael Crichton on environmentalism as a religion The ecomodernist criticism of <i>Laudato si</i> ' Ecological conversion or technological innovation? Oi What is the relationship between technology and religion? Hope and optimism: necessary or part of the problem? Environmentalism and faith in science	

Bibliography

387

Chapter 1

Living in the tension between progress and crisis

f we want to seek answers to the big questions of life mentioned at the outset of the present book, we need to consider the reality of today's world at the beginning of the third decade of the twenty-first century. If we do this, we cannot ignore the observation that we live in an ambiguous time. For, on the one hand, we reap today the harvest of an unprecedented progress. On the other, we are confronted with a range of crises that might make us wonder whether that progress was one-sided and if we should change direction in the future. Thus, we seem to be living today in a tension between progress and crisis. Exploring this tension and how it impacts our endeavour to formulate answers to the big questions of life is this chapter's aim. We will begin with looking at the reality of progress before exploring the crises we are facing today.

1.1 The reality of progress

In the last few centuries, and especially since the middle of the last one, the world in which we live has changed dramatically. Just comparing the life you live now with the life of your great-grandparents or even grandparents when they were young immediately makes this evident. Think about the comfortable houses with central heating in which many people nowadays live, homes in which it is always warm and cosy, even when it is cold and bleak outside. Think about flush toilets indoors instead of having to go out to an outbuilding to answer nature's call above a hole in the ground. Think about the many appliances and tools that simply did not yet exist only a couple

of decades ago, and which make life easier and more pleasant. Think about how electricity makes it possible that our activities do not need to come to a stop after sunset. Think about how transport means, such as cars, trains and aeroplanes, and means of communication have opened up the world. We can be in contact in real-time with people on the other side of the world. We can visit distant places and get to know different cultures. On average, we live ánd stay healthier than ever before. We own more things, eat a more varied diet learn more, experience more.

To illustrate this further, we can take a look at the state of poverty in the world. Extreme poverty has been defined by the World Bank since 2015 as having to live on less than 1.90 int-\$ per day.¹ Since 1981, the World Bank has been systematically maintaining data on the evolution of extreme poverty in the world. According to the most recent data the organisation provides on this subject in its online database on poverty and equity, some 689 million people worldwide were extremely poor in 2017. That is about 9.17% of the world's population.² Of course, that is an unimaginable number of individuals living in the most distressing and degrading conditions. This is all the more true when you know that the global poverty line at 1.90 intl-\$ is actually very low and that many people who live above that limit either live in poverty or very precarious conditions. In 2017, for example, some 1.12 billion people lived on a daily budget of between 3.20 int-\$ and 5.50 int-\$.

The observation that extreme poverty is widespread in the world must not, however, blind us to the fact that things are moving in the right direction. In 1981, when the World Bank began its measurements, some 1.9 billion people were extremely poor (< 1.9 intl-\$/day), although the world's population was much smaller at the time. The number of people in extreme poverty has therefore not only decreased in absolute figures, the share of individuals in extreme poverty in the total world population has decreased as well in recent decades (from 42.3% in 1981 to 9.17% in 2017).

To interpret this decline further, it is worth looking back a little further in time. Unfortunately, we do not have data for the period before 1981 as we have for the period since 1981. We are, therefore, dependent on reconstructions. In 2002, François Bourguignon and Christian Morrison, two French economists, published an article on the global evolution of inequality in the period from 1820 to 1992 (see Bourguignon & Morrison 2002). They estimate that in 1820, some 84% of the world's population was extremely poor, and

another 10.5% was poor. Therefore, only a tiny minority of 5% was not poor (figures taken from Bourguignon & Morrison 2002, 731). However, that 5% also did not fare as well as most people do today. Max Roser and Esteban Ortiz-Ospina refer in this context to Nathan Rothschild (1777-1836).³ Rothschild was a German banker and businessman, and at some point would have been the richest man in the world. However, all his wealth could not prevent him from dying of a banal infection that today is easy to treat with antibiotics which cost a few euro cents at most. Nowadays, the medication that could have saved Rothschild's life is thus affordable for large groups of people who are relatively poor by today's standards compared to the richest. Therefore, Roser and Ortiz-Ospina conclude that today only people in the most extreme poverty still die of diseases that in the nineteenth century were fatal to even the wealthiest person on Earth (Roser & Ortiz-Ospina 2018).

Too many people still live in (extreme) poverty and humanity cannot accept this. We must not forget, however, that we have already come a long way. Today, most people are doing much, much better than the entire human race a few generations ago. Of course, this does not mean that we are now living in the best possible world. The Earth has not turned into a paradise. Nevertheless, there has been progress.⁴

Moreover, we are not sufficiently aware of how recent this progress actually is. In 1914, on the eve of the First World War, only 10% of Belgians had electricity in their homes.⁵ This is only about a hundred years ago. Today, a house without electricity is simply unthinkable in the country. Or take the example of antibiotics. The first real antibiotic, penicillin, was discovered less than a hundred years ago (in 1928 to be precise) and it was only produced on an industrial scale from the 1940s onwards.⁶ In the light of the time that has elapsed since *Homo sapiens* appeared on Earth some three hundred to two hundred thousand years ago, the period since the discovery of penicillin is completely negligible. For almost our entire history, we humans have lived without antibiotics and therefore in a world in which even the most banal bacterial infection could mean sudden and premature death, something that many people could hardly imagine today.

The progress from which we today reap the benefits would not have been possible without what the recently deceased Flemish philosopher Etienne Vermeersch (1934-2019) called the STC system (see Vermeersch 2010 [originally from 1988]). The STC system refers to the interaction of three components, science⁷, technology and capitalism. These three propel

and strengthen each other mutually. They form a global system that is incredibly successful in producing information, energy, tools and utensils very efficiently, thus making life more comfortable and more pleasant for an increasing number of people. According to Vermeersch, the reason for the efficiency of the STC system is obvious:

> "[Natural] science provides a reliable insight into the laws of nature; on that basis, the technician builds the system that applies those laws [...], and the capitalist economy provides an extensive potential of raw materials and means of production to multiply technical discoveries" (Vermeersch 2010, 48).

The STC system's success is particularly obvious in the self-evident way in which we use many of its achievements without dwelling on how recent they actually are.

In the meantime, it is clear that it is the STC system that has shaped and continues to shape the world we live in today. The observation that it is de facto natural science, technology and capitalism that have made the world a better place in recent centuries is, of course, food for thought. In particular, it raises the question if we can still expect anything at all from the countless religions, ancient philosophical systems and wisdom traditions that mankind has produced over the centuries when attempting to answer the big questions of life as outlined at the outset of this book. Great thinkers, prophets, religious geniuses, and wisdom teachers have formulated all kinds of profound answers to the great questions of existence for thousands of years. And yet it is only since the recent fruition of natural science, technology and capitalism that humankind has made rapid progress. Doesn't the STC system's success suggest, therefore, that we can no longer do anything with the answers to the great questions of life that people from long ago once came up with? Isn't the problem with all these answers that they are out of date? Don't they come from a time when human knowledge and the ability to intervene effectively in reality were necessarily limited? As a result of which it was often not an option to eliminate the causes of suffering and responding to misery was often limited to learning how to endure it?

We should not jump to premature conclusions, however. Natural science and technology may have made life more pleasant and more comfortable, and may have created unprecedented prosperity and abundance. Yet, the STC system has plunged the planet into the throes of an enormous ecological crisis. Humankind's impact on the Earth's ecosystem has become so great that the limits of what our world can handle have been exceeded many times over. We can therefore no longer ignore the question of how much longer we can go on like this. A backlash for our excessive use of our planet may be imminent now. How long still before the ground from under the STC system is beaten away, and the entire system collapses? Moreover, the ecological crisis is not the only one we are facing. On the contrary, we are faced with several significant challenges that appear to be closely interlinked. We cannot, therefore, avoid addressing them now.

1.2 A multitude of intertwined crises?

It is enough to regularly open up a newspaper or watch the television news to see that many threats are coming our way. There seem to be quite a few reasons to be worried or even frightened. We read and hear about wars and armed conflicts, about migratory flows and terrorism, about the bursting of the multicultural dream, about increasing polarisation and inequality, and about intolerance, discrimination and racism. The public debate seems to coarsen, and patiently searching for a compromise in consultation appears increasingly to give way to stubborn adherence to one's own convictions.

There even seems to be a real crisis in our socio-economic system. The banking crisis of 2008 brought the global economy to the brink of collapse and revealed the fragility of the international financial system. Governments had to pump massive amounts of taxpayers' money into failing banks to prevent them from falling and dragging the entire economy with them. As a result, budgets went into the red, and governments had to cut costs, leaving less room for services and policies that benefit ordinary people in the street. The days when families were able to save for themselves safely and securely, thanks to a hefty interest rate on their savings accounts seem to be long gone now. It is not likely that those times will come back soon, now that there is talk about negative interest rates. This would mean that consumers have to pay the bank to keep their savings. The welfare state also seems to be coming under increasing pressure. We regularly hear that social security costs too much money and that benefits and pensions have to be cut back. And given the increasing ageing of the population, how long will there be enough money to give everyone a pension that guarantees a dignified old age?

There also seems to be a crisis of our mental wellbeing. We hear about depression and burn-outs. For some years now, we have been reading analyses that talk about a chronically tired society (Desmet & Grommen 2013; Han 2015). Flanders's best-known psychiatrist, Dirk De Wachter, talks about "borderline times". In his first book (De Wachter 2012), he defended that we live in a society that makes us all borderline individuals to a greater or lesser extent. Because of how society operates, we all, to a greater or lesser degree, begin to show characteristics of patients suffering from borderline personality disorder. The book in which De Wachter elaborated this, at first sight absurd, thesis, was a bestseller. It is still in print eight years after its first publication, and it is now in its 34th edition. That alone makes one think. The widespread use of antidepressants and other psychopharmaceuticals also gives us food for thought. In September 2018, the Flemish newspaper De Standaard published a report in which we could read that in the previous year (2017) 1.19 million Belgians had bought at least one box of an antidepressant and that some 325 million daily doses had been used that year.⁸ The reason for writing the article was that the number of Belgians who had bought an antidepressant had fallen slightly for the first time in ten years. Yet, according to the report, the number of daily doses had continued to increase. So, in 2017, there had been a slight decrease in the number of people using antidepressants, but those using them were taking more. As explained by the newspaper, this is a consequence of a new directive on how doctors should prescribe antidepressants. Despite the slight fall in the number of users in 2017, this number is still alarmingly high. So is the number of daily doses. De Wachter's 2013 claim that we live in a "pill society", a society in which "a huge amount of pills are taken",9 therefore seems to have lost none of its topicality.

We are also facing a challenge of which we hear very little. As a society, we do not often think about what impact the further development of technology will have on our daily lives and our living together. In a recent book, the Israeli historian, philosopher and futurologist Yuval Noah Harari points out that artificial intelligence has already made the financial system so complicated that only a few still understand anything about it (Harari 2018, 15). What happens when artificial intelligence gets even better, and no one at all can follow it? What happens when artificial intelligence surpasses us in more and more areas, and ever more jobs are therefore better outsourced to computers and robots? What will be the consequences for our identity and our relations if Google knows us better than we know ourselves? What if choices about what to study, what professional career to pursue or with whom to share life are better entrusted to our virtual assistants – the Alexa's

(Amazon), Cortana's (Microsoft) and Siri's (Apple) of the future – instead of trying to make such life-determining choices on our own? Harari even holds out the prospect that developments in information and biotechnology will soon give us the power to control and manipulate our inner world (Harari 2018, 15). This sounds promising. Who would not want to erase that unpleasant memory of something that happened in kindergarten or primary school? And who wouldn't be tempted to update an undesirable character trait a little as to be, for example, a little smoother in social intercourse or to have a little more self-confidence? However, Harari points out that the new opportunities that the bio and infotech will give us are also a threat. He makes the comparison with the manipulation of the outside world. "Humans," he writes, "were always far better at inventing tools than using them wisely" (Harari 2018, 16). Our manipulation of the outside world has often been ill-considered and short-sighted. That is why we face an ecological crisis today. If we begin to manipulate our inner world in the same ill-considered way, the consequences could well be catastrophic (Harari 2018, 16).

Politics seems nowadays to excel in short-sightedness and powerlessness, and not be up to the task of meeting the many challenges and threats facing us. Perhaps because of this, politics is also in crisis today, and maybe we should even speak of a crisis of liberal, parliamentary democracy as such. The fact that, in June 2016, a small majority of Britons chose to leave the European Union, shortly followed by the election of Donald Trump in November of the same year as the 45th President of the United States, is indicative of this. Just like the success of so-called 'populist', 'extreme right' or 'identitarian' parties in many countries of Europe and the rise of authoritarian leaders elsewhere in the world. The most recent elections in Flanders (May 2019) seem to confirm the crisis of politics: the centre shrunk and the three classical parties were significantly reduced. In Flanders, they combined to be just under 40% in the Chamber of Representatives. In 1981 this had been almost 74% (figures taken from the DS of 27/05/2019). All these phenomena - Brexit, Trump, the decimation of the traditional, state-supporting political formations - point to a deep-seated unease and even anger on the part of a significant proportion of the electorate.

We find out how widespread the unease in society is in an interview with marketer and strategist Fons Van Dyck in the *dS Weekblad*.¹⁰ According to Van Dyck, half of Belgians are now "anti-system". This means that they no longer believe "that the existing socio-economic establishment can be improved" (p. 21). Those who no longer believe that there is room for improvement

within the current system will not shy away from uncertain adventures such as Brexit or voting for parties or politicians who hold out the prospect of a radical turnaround. Of course, this phenomenon is not new. The first so-called 'Black Sunday' in Flanders dates back to 24 November 1991. Since then, much has been said about how to respond to 'the voters' signal', but even thirty years later, politicians remain unsuccessful in doing so. Considerable sections of the population still feel excluded, abandoned by 'the system', patronised and scorned by 'the elite', and threatened by all kinds of changes coming their way.¹¹

According to the American sociologist, political scientist and philosopher Francis Fukuyama, the experience of being humiliated and belittled has become so great among broad sections of the population that resentment has become one of the main motivations for large groups of voters (see Fukuyama 2018). Resentment is the grudge people feel when they sense that others do not recognise them with any dignity. It is a reaction to the experience of not being taken seriously, of not being important. Resentment manifests itself in hostility towards those groups deemed responsible for one's own humiliation and marginalisation. These may be 'the politicians', who only take an interest in 'the ordinary man or woman' when elections are approaching, but otherwise simply do their own thing. Or they may be 'the foreigners', who are supposed to be allowed to do anything and get everything for free. Or 'the Greens', who are only out to hunt down ordinary people and make life difficult for them. Or the 'cosmopolitans' of the European Union, who have opened up borders against the will of the ordinary people. Or the 'politically correct' people in the media and education, who immediately brand as 'racism' or 'Islamophobia' any displeasure expressed by ordinary people about the dark side of multicultural living-together.

The unease in contemporary culture is very significant. Politicians and parties who can tap into this resentment can therefore count themselves rich. At present, right-wing extremist parties are more successful in this than parties on the left of the political spectrum. However, it would be wrong to think that anti-system thinking is the exclusive privilege of the extreme right. A phenomenon such as Extinction Rebellion shows that there are also people within the environmental movement who no longer believe that solutions are possible within the current system. Launched in London on 31 October 2018, Extinction Rebellion calls for "non-violent direct action and civil disobedience to persuade governments to act justly on the Climate and Ecological Emergency".¹² On 20 February 2019, *De Standaard* reported

on their first action on Belgian soil. A few quotes from the article make the movement's anti-system thinking clear: "Within this capitalist system, the climate is lost a priori, according to Extinction Rebellion", "there are people among us who admit that the lack of action [of politics for the climate] has radicalised them", and "within the capitalist system 'as it exists today', the organisation sees no possible solution".¹³ In the article, the activist who takes the floor stresses that the movement dissociates itself from any particular political ideology. Concerns about (the consequences of) climate change are more prevalent among those on the left side of the political spectrum, however. Right-wing (let alone extreme right-wing) parties tend not to excel in this. Extinction Rebellion therefore makes it clear that the experience that 'the system' does not do enough to meet 'left-wing' concerns can also lead to anti-system thinking.

We can, therefore, conclude that we are facing a multitude of challenges and threats today. It goes without saying that we should also mention here the corona pandemic that struck the world in 2020. This pandemic confronted us to the vulnerability of modern life in our globalised and interconnected, technological world. We witnessed how a virus could spread across the entire planet in no time, forcing societies to take unprecedented draconian measures to avoid a collapse of their health care systems. Whole segments of the economy came to a standstill, leaving significant numbers of people without income and forcing governments into debt to support them. Many things that people thoughtlessly took for granted turned out not to be evident at all: going to school, team sports, international tourism, going out for a drink at night, hugging or kissing a friend, or shaking hands; it all became impossible. The restrictions in social life and forced isolation have had a severe impact on the mental well-being of many people, particularly that of teenagers and young adults. Combating the coronavirus efficiently also turned out to be in conflict with the numerous individual freedoms cherished highly by many people. Therefore, it should not surprise us that, after the initial unity of the early weeks of the first lockdown in spring, the question of how to respond to the pandemic turned out to be increasingly divisive and polarising. At the time of writing this, the first people are finally being vaccinated against the coronavirus. Simultaneously, however, the media are reporting on a new variant of the virus that may be more contagious. We hear that, despite vaccinations having begun, our old ways of living will not return immediately, and the consequences of the pandemic will be felt by a lot of people for many years to come.

Several of the problems outlined here also evoke and reinforce each other. For example, the crisis of politics is linked to the discontent and fear prompted by migration and multicultural society. Attempts to respond to the ecological crisis (and, particularly, climate change) incite resistance among broad sections of the population when measures taken make themselves felt in people's wallets, or in what is and is no longer allowed. In this way, climate policy feeds resentment in society.¹⁴ On the other hand, we can expect climate change to exacerbate migratory flows in the future and make the 2015 refugee crisis pale into insignificance. We can also expect armed conflicts over scarce water and food supplies to increase as climate change intensifies in, say, prolonged droughts and crop failures. We can also expect the effects of climate change to have an increasing impact on our mental wellbeing. There is already talk of something like 'climate depression'.¹⁵ And there is more. According to Harari, further technological innovations will make large groups of people wholly redundant and irrelevant because the system no longer needs them and can no longer cope with them (see Harari 2018). If this prognosis of Harari becomes a reality, then we can expect that the amount of resentment in society will only increase in the future.

Regarding the corona pandemic, it has been linked with the ecological crisis. For instance, in a text in *Time* on the occasion of World Environment Day 2020, it was stated that the pandemic is in fact, just like climate change, "a symptom of a bigger problem", namely "our planet's ailing health". Corona is a so-called 'zoonotic' disease. This means it is caused by a virus that jumped from wild animals to humans. That it could cause such havoc around the world is, according to the authors of the piece, an outcome of "humanity's dysfunctional relationship with nature". The coronavirus, they explained, "evolved into a pandemic due to the now well-established risk cocktail of the 21st century: ecosystem destruction, species loss, global warming, colliding with risky human behaviour such as the illegal wildlife trade. All of this has played out in a globalized network of trade and travel." When it comes to the impact of the corona crisis on the environment, the image is double. During the spring, media reported on the positive effects of the lockdowns on the environment. We were told about cleaner air, less noise, a drop in greenhouse gas emissions, and wild animals roaming between the countryside and the villages and city centres.¹⁶ These examples show that what humans do or refrain from doing does make a difference to the environment. Yet, we may expect the corona crisis to have negative impacts on the environment as well, and these may be more substantial and last longer. Just think, for example, about more waste (of, in particular, single-use plastic) and more people travelling by car out of