

Earth Changes

Many journalists have written surveys on the ecological mega-crisis and its social impacts. These chroniclers have travelled across the world, visiting the front lines in Africa, Asia, South America and the Arctic. They have been part of the action at global climate summits, watching in horror as the US and Chinese governments undermined agreements that could have helped stave off decimation. Many of these writers also explore a range of possible strategies for adapting and mitigating, as well as preventing, the worst effects. Among the works in this genre, I include Elizabeth Kolbert's *The Sixth Great Extinction*, Naomi Klein's *This Changes Everything*, Mark Hertsgaard's *Hot: Living through the Next Fifty Years on Earth*, Mark Lynas's *The God Species*, Fred Pearce's *With Speed and Violence: Why Scientists Fear Tipping Points in Climate Change*, Bill McKibben's *Eaarth* as well as his earlier *Deep Economy*, and Rebecca Solnit's *A Paradise Built in Hell*.

Although I recommend all of these books and consider them essential reading, my own contribution at this juncture is to offer something more philosophical – systemic in its critique, as well as strategic in its approach to how we make change. I have been inspired by Murray Bookchin's approach to social ecology, Hannah Arendt's political philosophy, as well as Buckminster Fuller, who applied nature's design principles to our species-wide crisis.

Let's start by looking back in time briefly. Over the last 60,000 years, since leaving Africa, the human species has developed language and culture, increasing in numbers, slowly at first, as we spread ourselves across the surface of the world. For most of that time, we lived as small tribes of hunter-gatherers. Around 10,000 years ago, we began growing crops, building cities and launching empires. Over the last few centuries, our species discovered steam power, electricity, coal, oil, mechanical technology and industry. We split the atom and beached on the moon.

As its science and technologies advanced, the modern West constructed a new social model based on conspicuous consumption and planned obsolescence. We exported this experimental way of life across the world. In a short span of time, because of our capacity to exploit energy from fossil fuels – one barrel of oil holds the equivalent of 23,200 hours of manpower – humans went from biospheric nonentity to the catalysts of a geological event. The crisis confronting us is the result of what might prove to be our very short-lived success as a species.

As modern society became increasingly severed from nature, our science-based culture propagated an ideology of materialism, dismissing any mystical or religious belief system as antiquated and false. We rejected the natural, the feminine and the intuitive, replacing them with the masculine ideals of order, logic and rationality. Faith in science and technology replaced religion for many people.

This technological worldview has revealed its own internal contradictions and is reaching the point where it is starting to self-destruct. I recently held a dialogue with the neoliberal economist Nouriel Roubini, who was on President Bill Clinton's cabinet and gained the nickname 'Doctor Doom' for accurately predicting the 2008 economic meltdown. Looking at the advance of robotics and artificial intelligence, Roubini predicts that robots will eventually replace humans in all fields of activity, and that, in fact, the future belongs to the machines. This sterile *Terminator* scenario will happen, he believes, within the next fifty years.

I see this fatalistic viewpoint as the result of a narrow, reductive rationality. Rather than forfeiting our future to robots, we must learn to master our projections of technology, applying our genius for innovation to humane and benevolent pursuits. We can then define a new trajectory for our species, where we use our technologies to emancipate humanity, establish societies of sustainable abundance and explore the creative capacities of the liberated imagination – not a zero-sum game, but an infinite one. We are at the start of a fantastic adventure – the plot we are in is just as dramatic as anything we have seen in films like *Star Wars*, *Mission Impossible*, *The Matrix* or *2001*.

But before we can get to my proposed solutions and strategic action plan, we need to be on the same page about what's happening to our Earth. We must have a shared understanding of what we are doing to

ourselves and our world. What I believe to be my contribution to this debate won't make much sense if we lack a coherent picture of what the science is telling us and what we can expect in the coming century. Therefore, I am going to devote this chapter to the evidence and the facts.

For some readers this may be revelatory and fascinating. Perhaps it will be enough to spur them to action. For others, however, these sections may seem heavy going, drearily academic – the term 'fucking depressing' comes to mind – even though the subject directly relates to their future lives and the lives of their children. For the benefit of these readers, I will interrupt the flow from time to time, summing up the key points, riffing a bit along the way.

Critics might assume that because I have a 'spiritual' (the terms I prefer are occult or esoteric) perspective, I don't care about the science. The truth is the opposite. Our choices and our actions must flow from the cold, hard empirical evidence. I believe I am able to engage with it, frightening as it is, because I have explored the mystical and prophetic dimensions of what's happening.

When we fully accept and realize that this crisis is our invitation to undergo a collective metamorphosis – to establish something much better than we have now – then we can find the will and courage to handle the distressing specifics. Deepening global crisis is going to force transformation, one way or another. The best thing we can do is seize this chance to leverage a mass awakening.

Dread or Detachment?

Most people have, I find, a schizophrenic approach to the ecological threat hanging over us. On the one hand, they feel dread – a sense of impending disaster. Young adults, kids in their twenties, tell me they believe we are doomed. Therefore it doesn't make sense even to try to do anything at this point to change the situation – you might as well dedicate yourself to indie rock, Tinder hook-ups or other distractions. When we feel helpless to change something, we push it out of our minds. We treat it as a joke.

Paradoxically, many people also believe that technology is going to develop so quickly that it will save us without them needing to lift a finger. Both of these ideas – that we are doomed and can't do anything,

so there is no reason to try, and that technological innovation will save the day – are popular memes, spread through the media. Although they are contradictory, many people think both of these things at the same time. One theme the two ideas share is a rejection of any sense of agency or responsibility: any possibility that we can, and must, change ourselves.

I find the ecological movement guilty of this. Many well-funded groups organize marches against pipelines, drilling and fracking – or against climate change itself. But we can protest these things all we want and it won't change anything as long as we are still using way too much energy and squandering our natural resources. We might stop a pipeline in one area, but the energy companies will simply build one someplace else. Ultimately, the system is responding to consumer demand. If we are going to avoid the most catastrophic outcome, social behaviour – as well as the beliefs propelling it – needs to change.

People make the argument that it doesn't matter if we in the West now change our path, because China – or India, or other still-developing countries – will never change theirs. This is an assumption that supports continued passivity and abdicates responsibility. The fact is that Western society has not only spread our industrialized, hyper-individual, consumerist model around the world, but has relentlessly marketed it as the best way for everyone to live. On the one hand, we've used financial pressure and biased trade agreements to force developing regions to adopt our values and conform to our agenda. On the other, we have bombarded these cultures with shallow, seductive, hypnotizing media – *Dallas*, *Lifestyles of the Rich and Famous*, *Sex and the City*, the Kardashians – which have made it seem that everyone should aspire to the same standards of material wealth and glamour.

As our postmodern society undergoes a transformation of values and practices, we will apply the same genius we use to sell innumerable gaudy, useless, breakable things to promote and distribute a different way of living and being across the world. We now know from many studies that our commercial, self-centred lifestyle does not produce real contentment. Many commentators note that people in traditional societies, living within ecological limits, seem far happier than those who have adopted the Western consumer mindset. In traditional societies, we find far less crime, a deeper connection to nature, and

vital spiritual traditions. In these cultures, most people live in villages or small communities. They trust and care about each other.

I believe that the only way we can engineer a rapid turnaround is to repurpose the mass media and communications infrastructure the capitalist system has bequeathed to us. Instead of marketing consumerism and keeping people fearful, our networks of media and social tools can promote different values – responsible, Earth-honouring ones – and solution-based approaches to our current problems. We can provide people with tangible tools for changing their lifestyles in major and minor ways – sharing resources, conserving energy, building communities and so on. We can shift people away from dependence on distant authorities towards local autonomy and resilience. Because human beings are extremely adaptive, this transformation could happen surprisingly quickly. It requires, first, an imaginative leap.

Modern society traps us in alienation. People continue to act as if the increasingly obvious changes in climate and environment have no connection to their lives or our collective future. If we are going to address our critical situation, we need to develop a wide-ranging vision, a systems-level perspective. Individuals must step into leadership roles, not to amass power and wealth, but because they truly want to help.

One big problem is that our brains evolved to deal with short-term dangers, like being stalked by a lion. We are not used to responding to threats that unfold slowly, over a matter of decades. Doing so requires an act of will, intellectual apprehension and courage.

We have been told there are experts in every field, with specialized, technical knowledge far beyond what we can fathom. We count on these experts to handle those problems that seem beyond the scope of our abilities. Immersed in their daily lives, most people don't entertain the prospect that these experts and specialists may themselves be mistaken. They may be operating with such fragmentary knowledge that they lack the ability to comprehend the whole picture, or to envision, let alone institute, the level of systemic transformation that will be needed.

What if there are no experts in what the future will bring?

Humanity has been put in command of what Buckminster Fuller called Spaceship Earth. Fuller noted that although our spaceship was flawlessly designed, it lacked an instruction manual:

In view of the infinite attention to all other details displayed by our ship, it must be taken as deliberate and purposeful that an instruction manual was omitted . . . The designed omission of the instruction book on how to operate and maintain Spaceship Earth and its complex life-supporting and regenerating systems has forced man to discover retrospectively just what his most important forward capabilities are. His intellect had to discover itself.

There is no doubt that our use of the planet's finite resources must change drastically while we seek to repair, as best we can, the damage we have already done. We must apply our intellect to this task.

For the sake of future generations and the greater community of life on Earth, we must find ways to overcome distractions, building a wave of collective action that will gather enough strength to overcome the resistance of those entrenched and powerful forces that stand in our way. Such a movement can only be effective if we possess a clear idea of the positive outcome we seek as well as the methods we must apply to attain it.

Because we are afraid of what's coming, because we feel it is not our responsibility, and because the mass media doesn't focus our attention properly, most people lack even the most rudimentary knowledge about what we are doing to the Earth. I have spoken to graduate students studying sustainability and design at the School of Visual Arts in New York, and even they didn't know the most basic information about species extinction, ocean acidification, climate change and so on. In America, the typical adult can name over a thousand corporate logos but fewer than ten species of native plants.

People find themselves disconnected, detached from what is taking place, watching it like a movie. Conditioned and indoctrinated by a system designed to disempower them, many feel cynical about any possibility of changing the status quo. This needs to change. We can educate ourselves about our situation and then share that information in a productive way. We can't galvanize people into action by making them scared or miserable. The only thing that will inspire people to act, I believe, is a compelling and beautiful vision of the future - a future they want to see for their children and grandchildren.

'Restoring the earth will take an enormous international effort, one far larger and more demanding than the often-cited Marshall Plan that helped rebuild war-torn Europe and Japan,' writes Lester Brown, the founder of Worldwatch Institute, in *Plan B 4.0: Mobilizing to Save Civilization*. 'And such an initiative must be undertaken at wartime speed lest environmental deterioration translate into economic decline and state failure, just as it did for earlier civilizations that violated nature's thresholds and ignored its deadlines.'

Brown notes that the US industrial economy was able entirely to restructure itself in just a few months, following the 1941 Japanese attack on Pearl Harbor. This required a three-year ban on the sale of automobiles, as factories shifted to producing planes, tanks, guns and other forms of military hardware. A similar, rapid redirection of our industrial system, globally, is necessary to transition energy production and other areas. This has happened in the past, during wartime, but never during peacetime and never on a planetary scale. What will it take to bring this about? That, dear reader, is a crucial question.

Planetary Boundaries

Probably the best effort to define the full parameters of our current ecological situation was made by the Stockholm Resilience Centre. In 2009, they brought together scientists and developed the planetary boundaries model. According to this model, there are limits in nine areas that humanity can't cross without endangering our own future as well as the health of the Earth.

'Anthropogenic pressures on the Earth System have reached a scale where abrupt global environmental change can no longer be excluded,' the scientists noted. The planetary boundaries are: global warming, reduction of biodiversity, nitrogen runoff, land use, consumption of fresh water, acidification of the oceans, thinning of the ozone layer, aerosol pollution and atmospheric toxins. Currently, we have crossed at least four of these: climate change, loss of biodiversity, ozone layer depletion, and nitrogen pollution.

Our situation is made more complex by the unanticipated ways these different boundaries interact with each other. For instance, there was a period in the last decades when global warming was slower

than the scientific models predicted. Climate change deniers seized on this as evidence that global warming was a fraud. In all likelihood, this slowdown in warming was due to two factors. China massively increased coal production, leading to an enormous escalation of sulphur dioxide in our atmosphere. The phenomenon is called 'global dimming'.

Although sulphur dioxide temporarily reduces warming, since the particles reflect the sun's rays, these soot particles don't stay in the atmosphere for long and cause other forms of ecological damage. Scientists also found that the oceans have been absorbing more CO₂ than their models predicted. Once again, this is not something that will help us in the long term. Soon, the oceans will max out their capacity to absorb CO₂. At that point, like giant lungs, they will start releasing it, which may accelerate warming.

When we get into these types of fine-grained details of the mess we are in, we start to understand why James Lovelock believes we have already passed the tipping point which makes cataclysm inevitable. Lovelock is a highly esteemed scientist. He worked with microbiologist Lynn Margulis to develop the Gaia hypothesis, putting forward the theory that the Earth functions as a self-regulating system like a giant organism. In *The Revenge of Gaia*, Lovelock foresaw 'an imminent shift in our climate towards one that could easily be described as Hell: so hot, so deadly that only a handful of the teeming billions now alive will survive'.

He predicted that a maximum of only 150 million people will be left alive at the end of this century. He could be right. But it is also possible that, through globally coordinated action – if we apply our genius as a species to collectively beneficial ends – we can forestall this catastrophe and even thrive.

Above all, what the data on climate change – along with other aspects of the ecological crisis, such as species extinction and ocean acidification – tells us is that the fate of our world is at stake. This is not happening in the future. It is not happening decades or centuries from today. It is happening now and we must bring our focus to bear upon it.

Biodiversity

We are currently in the Sixth Great Extinction in Earth's history. Each day, an estimated 150 to 200 species disappear forever out of a total number of roughly 8.7 million. Doing the maths, this means we are losing something like 10 per cent of the remaining biodiversity every 10 to 15 years. The number is so high because we are currently polluting, over-settling, burning down and clear-cutting many of the most biodiverse places on Earth.

It can be difficult to explain to people why maintaining biodiversity is crucial for our own near-term survival. We have learned that ecosystems function as complex networks in which the different forms and varieties of life support each other – when any tier is taken away, the entire system may change dramatically. It may rearrange itself or become radically simplified, with only one or a handful of species proliferating.

People became alarmed, recently, by the collapse of the bee population, because bees, as pollinators, provide a crucial role in human agriculture. But other small organisms also have critical roles to play, down to the phytoplankton in the oceans, which are affected by ocean acidification. As I noted earlier, the speed of our industrial progress has been so incredible that we have not been able to reckon with its effects. It didn't occur to us, even twenty or thirty years ago, that we could empty the entire ocean of large fish – but that is what has happened. More than 90 per cent of the large fish are gone, and the massive trawlers which spread their nets in the seas have to go further and deeper out, collecting types of fish that would have been rejected as inedible a few years ago.

Ongoing loss of biodiversity may induce an abrupt change of conditions in the biosphere as a whole, which could revert back to a simpler state, no longer suitable for large lumbering mammals such as ourselves. When too many species are removed, an entire ecosystem may collapse. This can happen on a local or global level. The danger is that there is an unforeseen tipping point beyond which a rapid planetary shift could take place, and this could happen faster than we are able to react to it.

Global Warming

The climate change planetary boundary is the most well known – even so, even with marches and protests around the world, it doesn't compel the level of collective response that it should. It took science a while to catch up to the dynamics of global warming, but we now have a clear understanding of its underlying mechanisms. Before the Industrial Revolution, the climate was relatively stable for ten thousand years, a 'Goldilocks period' (not too hot, not too cold) which allowed human civilization to flourish. During this period, there were around 275 parts per million (ppm) of carbon dioxide in the atmosphere.

Decaying vegetable matter as well as the oceans emit a huge amount of CO₂, but the oceans are also able to absorb it naturally, in a cycle similar to respiration. The residue from our industrial systems – we currently expel 300 billion metric tons of CO₂ annually (more than a million tons per hour) – cannot be easily absorbed. It will linger in the atmosphere for a century, and accrue over time. We are now beyond 400 ppm of atmospheric CO₂. The last time there was this much CO₂ in the air, sea levels were 100 feet higher than they are today and temperatures were four degrees Celsius warmer.

Through studying the climate record preserved in ice-core samples, geologists have learned that the climate generally doesn't make a slow, incremental transition from one steady state to another. Instead, it tends to make a drastic lurch in a short timeframe. Glaciologists found that 'roughly half of the entire warming between the ice ages and the postglacial world took place in only a decade', writes Fred Pearce in *With Speed and Violence: Why Scientists Fear Tipping Points in Climate Change*, with a temperature increase of nine degrees Celsius during that time. In the past two centuries, humanity has increased levels of carbon in the atmosphere by about a third. Our continued tinkering runs the risk 'of producing a runaway change – the climactic equivalent of a squawk on a sound system'.

Already, global warming is drastically impacting on the planet far beyond what scientists imagined or projected even a few years ago. The three hottest years on record have all been in the last decade, with 2015 the hottest of all by a significant amount, and 2016 set to eclipse it by a large margin.

As Ramez Naam writes in *The Infinite Resource*:

In Europe, half the mountain glacier cover seen a century ago in the Alps is now gone. In Switzerland, 20 per cent has disappeared in the last fifteen years. In Britain, researchers looking at the flowering of plants and the migration of animals find that spring is coming eleven days earlier than it did in the middle of the twentieth century. In the United States, researchers see spring plant and animal behaviour creeping three days earlier each decade, around twelve days earlier since 1970. Sea levels around the world have risen seven inches in the last century, and their rate of rise has doubled in the last ten years.

According to climate scientist James Hansen, humanity already faces the 'near certainty' of an eventual sea-level rise of five to nine metres. As subsurface warming causes the melting of the Arctic ice sheets, sea levels will increase by much as three metres by 2050. He notes it is 'unlikely that coastal cities or low-lying areas such as Bangladesh, European lowlands and large portions of the United States eastern coast and northeast China plains could be protected against such large sea level rise'.

However, even in the worst-case scenario, if sea levels were to rise 100 to 150 feet we would only lose 5 per cent of the Earth's landmass. There would still be plenty of room for humanity to live and thrive. It has been estimated that the entire human population could be settled in an area the size of Texas, and each family would still have room for a backyard garden. Similarly, the entire human population could stand, shoulder to shoulder, on an area the size of New York City. This shows it is not the size of the human population that is the problem. It is our massively wasteful use of resources. As we will discuss, we have the ability to design, build, even mass-manufacture, new urban areas and villages that are entirely self-sufficient, with food and energy produced on-site.

Over the next years, as climate change accelerates and we hit other ecological constraints, we will see escalating tensions between resource-starved countries, perhaps inciting wars, guerrilla insurgencies, terrorism, even nuclear conflicts. 'Climate change will kill people directly, but most will die at the hands of other people made desperate by climate change,' Stewart Brand predicts. Europe is already

experiencing a refugee crisis as millions of desperate people flee Syria, a resource-starved country engaged in a vicious civil war. Drought in Africa has also resulted in migration to Europe. This is only the beginning of a process we will soon see unfolding across the world.

Take the country of Bangladesh where 157 million people live at zero to five metres above sea level. While many of us in the US and Europe have enjoyed lifestyles of luxury that require huge carbon emissions, the average Bangladeshi earns less than a thousand dollars a year and has a minuscule ecological footprint. As sea levels rise in the next decades, much of Bangladesh will become uninhabitable as fresh-water sources are infiltrated by the sea. India is already building a massive fence to keep out Bangladeshi refugees.

In a sense, one could argue that we in the developed world are no better than the worst and most barbaric regimes of the past. We have known for decades that our continued inaction on CO₂ emissions is a form of passive genocide committed against the most vulnerable populations of the Earth, but we remain wilfully unconscious about our impacts.

There is nothing we can do to change the past, but we can face the present. As practitioners of Huna, the spiritual discipline associated with Hawaii, put it: 'Now is the moment of power.' *Now* is the only moment – in other words – when we can accept our personal responsibility for the fate of our shared, imperilled world. *Now* is also the moment when we can choose to put aside petty concerns and to act, instead, as biospheric agents, conceiving our own lives as catalytic processes, applying our energies and intellect for the greater good.

Feedback Loops

Ecological disaster is being accelerated by a large number of feedback loops that amplify climate change and other problems as they are set into motion. These feedbacks are something like a snowball falling from a mountaintop, picking up momentum, causing more snow to fall, until it causes an avalanche. Many of these were not well understood or anticipated until recently. All of them point towards the necessity of rapid, coordinated action to ensure our continuity on this planet.

One feedback loop is the interaction between the loss of Arctic

ice and what is called the albedo effect: the cooling of the Earth that depends in part upon the massive ice sheets that reflect the sun's rays, like a giant mirror. As the ice sheet shrinks and breaks apart, the albedo effect is diminished. Large areas go from white shiny ice to dark blue ocean. Instead of reflecting sunlight back into space, the Arctic absorbs more sunlight, which speeds up the warming process.

The Arctic is currently warming four times faster than the rest of the planet. Incredibly, in the winter of 2015, the Arctic reached a temperature that was over 30 degrees Celsius above its usual average – essentially, briefly reaching the melting point of zero degrees Celsius or 32 degrees Fahrenheit. While this was partly due to the natural warming cycle caused by fluctuations in the jet stream, it was still unprecedented, and – let's admit it – very frightening. In *The God Species*, Mark Lynas, a journalist who has travelled the world to write about climate change, admits he is astonished by 'the sheer rapidity of change already under way in the Earth system, changes I never dreamt I would see so quickly when I started working on this subject more than ten years ago'.

Despite Silicon Valley's euphoria over our capacity for innovation, we don't have any technological fixes for these runaway effects. We know, for instance, that the incidence of forest fires has been increasing for a number of years. A small amount of global warming is drying out the forests, making them more susceptible to fires. The forests act as carbon sinks, inhaling CO₂ and exhaling the oxygen we breathe. As they dry out and burn, releasing CO₂, global temperature increases, leading to more drying out of the remaining forests, which become even more susceptible to fire. This process, unfortunately, already seems to be cascading in the wrong direction.

In the autumn of 2015, the news was filled with reports of massive forest fires across the northwest of the United States, Alaska and Canada. These fires were unprecedented in size and ferocity. One blaze in Idaho engulfed 265,000 acres, while Alaska lost five million acres of forest, an area the size of Connecticut. With all of the fires across the Pacific Northwest and Canada, 11 million acres, 17,000 square miles, have been scorched – and the burning continues. As I write this, a massive forest fire in Alberta, Canada (where temperatures were twenty degrees Celsius above average for a few days in May)

forced a mass evacuation of the entire population of Fort McMurray – 80,000 people.

In the past few years, the forests of Indonesia have been intensively assaulted and reduced by fire, with giant plumes of smoke visible from space. Many of these blazes are caused intentionally, so that forest land can be converted to palm oil plantations. The increased use of palm oil as an ingredient in many cheap processed foods has created an ecological disaster.

Somehow, we must rally humanity to protect the remaining forests, in particular our tropical rainforests, and engage in a cooperative process to reforest the planet. The tropical rainforests are estimated to produce as much as 20 per cent of the oxygen we breathe. Most of us would, I believe, like to keep breathing – even if Ray Kurzweil believes that nanobots in our lungs will soon do it for us.

Arctic Methane

We now confront the greatest – and, until recently, a totally unanticipated – danger of rapid warming, through the release of methane from under the Arctic. According to one estimate, there are 1,600 billion tons of carbon trapped beneath the oceans and locked in Siberian permafrost. Although it only stays in the atmosphere for ten years, methane is more than twenty times more potent than CO₂ as a greenhouse gas. If methane erupts in large quantities, this will accelerate the warming cycle, releasing more methane. 'If such a runaway event were to take place, it could occur within forty years or less, and would transform the earth into a biological desert,' notes Paul Hawken.

In 2007, 'atmospheric levels of methane began to spike', according to Bill McKibben. In 2011, Russian researchers found spumes of methane as much as a kilometre in diameter releasing from the Arctic. Scientists now understand that, in previous epochs, eruptions of thawing methane from under the Arctic induced mass extinctions. Unfortunately, a rise in temperature of two degrees Celsius above pre-industrial levels may pass the threshold at which the methane releases in vast quantities. Some scientists now believe a 1.5-degree temperature rise is the maximum we can handle.

To deal with the methane threat – probably the greatest danger now facing humanity, outside of nuclear war – we must severely curtail emissions, reduce the levels of greenhouse gases in the atmosphere, and get to carbon neutral or negative as quickly as we possibly can. At the same time, we must remove excess carbon from the air, and apply other non-invasive techniques to cool our planet. Some of these are so simple, it is absurd that we are not already putting them into practice.

For instance, we can paint all of our urban rooftops white to mimic the albedo effect. As Mark Hertsgaard writes in *Hot*, it is estimated that the average American household ‘could counteract the ten tons of CO₂ it annually emits by retrofitting one thousand square feet of roof or sidewalk with reflective surfaces. Retrofitting all urban roofs and pavements in the world would yield emissions reductions equivalent to taking all the world’s cars off the road for eighteen years.’ As a global initiative, we could engineer mass plantings of forests, trees and gardens. ‘The earth’s plants and soils are not yet removing enough CO₂ to halt rising temperatures, but they could do much more with proper stewardship,’ Hertsgaard notes.

Within the next few decades, assuming we want a future for humanity, we need to bring about a drastic reduction of greenhouse gas emissions, along with a global transition to renewable energies and low-carbon fuel sources. Since we have waited too long, this reduction must be as much as 8–10 per cent annually, for a number of years. Luckily, a great deal of our CO₂-producing activity is wasteful and unnecessary, and could be quickly eliminated once we find the will to do so.

Admittedly, we face what seems a socially impossible task. Although there is nothing stopping us, physically, from making the sudden changes in species-wide patterns of behaviour necessary to avert cataclysm, it seems inconceivable – culturally, politically and financially – that we will do so. Yet we must.

Who Do We Blame?

Many times, when I try to talk about the ecological emergency with prosperous neoliberal and liberal types, the quick answer they give me is that the world’s population has grown too large. They either state

directly or insinuate that nature will take care of this by wiping billions of people off the map. For the most part, I find, they don't include themselves in those billions who will be consigned to oblivion.

The inconvenient truth is that overpopulation is not our major problem. In fact, across the developing world, at least until recently, most people lived within sustainable limits, with a tiny ecological footprint. They farmed locally and ate their own produce. They didn't drive cars, waste polystyrene, wear clothes produced in Cambodian sweatshops, fly somewhere warm to relax for a spring break, or buy new computers and smart phones every few years. The reason we are rapidly approaching total ecological collapse is the consumerist lifestyle of America and Europe, which we have spread across the planet.

I cannot deny that it would be a good idea to taper off the rising population – I think this can and should be done in a humane and empathic way. Birth rates actually decline naturally as women attain a higher status, approaching equality with men, having more access to education and work opportunities. In other words, if we elevate the status of women everywhere, the global population will, gently and naturally, decline.

While 80 per cent of emissions are produced by just 20 per cent of the world's population, probably 50 per cent of emissions come from as little as 1 per cent of the population – the wealthy people of the developed world. But the prospect that this 1 per cent will voluntarily reduce their consumption – or be forced to do so – is never proposed or considered. It runs counter to our intrinsic sense of privilege and the cult of wealth that underlies the capitalist game. Or, in other words, it goes against everything our globalized society – our technophilic New World Order – believes or stands for.

'We don't require the whole world to do something', notes Kevin Anderson, a UK climate scientist from the Tyndall Centre for Climate Research, 'we require a small proportion of the world to change what they do today for the next ten or twenty years while we put low carbon supply in place. Then we can go back to our old profligate lifestyles.' Unfortunately, the longer we wait, the amount of rapid reductions of emissions that we need to accomplish will increase, until the goal is out of reach.

Let's stop here for a moment. Let's think about this.

If it stings a little, let it sting.

I want to hold your attention, for a heartbeat or two, on that last comment Anderson makes about the need for a small proportion of the world to change their behaviour. Please realize that this is not just another idea in an ocean of nice-sounding ideas. What he is talking about is fundamentally necessary so that humanity as a whole – a group that includes our children, or, if we don't have kids, the kids of our friends and relatives, or if we have no friends, those little beings who occasionally smile shyly at us as they totter along – can survive and, eventually, thrive. What he is talking about requires that *you and I* change our behaviour and lifestyle.

Let's be brutally honest with ourselves: we can continue as we are now and watch our planet burn out, or we can change ourselves to change the world. If we prefer the second option, we must commit ourselves to a necessary task – a redemptive, spiritual mission. Our mission, if we choose to accept it, is that we work together to build a regenerative society, restoring the health of our biosphere for the long term. This project will be the work of future generations, also. What we can accomplish in our lives – the beginning of a great turning – will be our legacy to them.

I know it seems highly unlikely that the super-rich are going to swear off their private jets, their holiday outings in the Caribbean, their third houses in Ibiza, their ironically sumptuous (wink wink) Burning Man camps, their capital investments in new hotels and luxury high-rises. However, things can change. A lot of things are changing right now. They will be changing even more quickly in the years ahead of us.

Unfortunately, the wealthier people on the planet believe themselves likely to be the least affected by ecological catastrophe, figuring they can always fly off to some new still somewhat unspoiled place. While understandable from their perspective, this is stupid, short-term thinking. As I mentioned above, 20 per cent of the oxygen that we all, collectively, including the 1 per cent and the .001 per cent breathe, is emitted by the forests which are being slashed, burnt, mowed down to create more profit centres. If we lose too much biodiversity, the intricately interdependent web of life will crumble to dust, taking all of us down with it. Also, even the super-rich are running out of unspoiled places.

The ecological meltdown we confront, in fact, will eventually impact upon everyone on Earth. In the end, nobody is getting out of this one. Not Richard Branson or Donald Trump or the Koch Brothers – even if they happen to croak early, their kids and grandkids will have to face it. Perhaps there are bunkers deep underground somewhere for the Illuminati super-wealthy, outfitted with centuries of food, futuristic sex toys and other stockpiles. If so, I don't envy them that depressing, guilt-riddled future.

I have to admit – perhaps this reflects poorly on my character, but as I mentioned earlier I am no paragon of virtue and can, at times, be an asshole – that I didn't shed a tear when Harbin Hot Springs, epicentre of Northern California luxury hippie culture, burnt to the ground as forest fires swept the region. I almost felt this was a good thing, as a lot of transformational potential seems trapped in the Bay Area. The ecological, social justice and human potential movements all have West Coast headquarters. Maybe we need the progressive community to feel the heat – to get so uncomfortable they will break through whatever obstacles have kept them from challenging and changing the mainstream.

The consciousness revolution should, by now, have spread out from that area across the planet. But people fell into a smug, self-satisfied lifestyle. Instead of stripping themselves down in the quest for enlightenment, they stopped at what Chögyam Trungpa called 'spiritual materialism'. Perhaps the drought, the burning forests, and, now, the lack of hot springs where hippies can nakedly bathe and cavort will be enough to start an exodus.

The interesting thing about social behaviour is that it is extremely contagious. People tend to do what their peers do – and they can switch their beliefs and habits quickly, even immediately, when the reward structure changes around them. Malcolm Gladwell called this the tipping point. The maverick scientist Rupert Sheldrake proposes a more sophisticated model, based on something he calls morphic resonance, or the hundredth monkey principle. His idea is that when a certain small percentage of a species learns a new skill, that ability becomes easier to transfer to others – and can even transfer instantly, without direct contact, through some unknown mechanism, perhaps quantum nonlocality. Patterns of thought and action may create new fields of resonant potential that can become species-wide traits.

When you or I make a change in our behaviour, this affects and impacts upon the people around us directly and then the people around them, adding up to many more people. According to the morphic resonance theory, it may not be as difficult to effect large-scale change as we tend to think it is – particularly now, when we are so tightly linked together through networks.

Behaviour can change in a millisecond. I have seen examples of this at Burning Man – the festival functions as a laboratory for hedonic engineering and experimental paths to social change. Investment bankers, corporate lawyers, CEOs – highly intelligent people who tend to be motivated by personal reward more than abstract principles of ecological ethics – come to Burning Man and, in less than a day, they conform to a new set of social norms, responding to the cues around them. Their new behaviour patterns include 'leaving no trace', giving away stuff, hugging, smiling, building community structures, helping strangers put up their tents, sharing their drugs and so on. At Burning Man, wandering around in a pink tutu, saying '*namaste*', talking about your *chakras*, and picking up trash will gain you community acceptance and love. If being friendly, thoughtful and caring suddenly increases your status, gets you laid, brings you better drugs and makes you popular, then that is what you will do.

Interestingly, most of the changes we now need to make as a species so that we can all survive and prosper and our descendants can thrive would actually be beneficial for everyone, following an initial, awkward, admittedly uncomfortable period of adjustment. Today, for instance, many people live alone in small apartments, separated from their families and close friends. Bringing people together again to live communally in multi-generational compounds – as our tribal ancestors did – would be a powerful way to reduce consumption and waste. It would also make people happier, healthier and calmer.

I remember visiting Havana, Cuba, in 1999, where cars were rare, and people ride-shared and hitchhiked. This created a feeling of social cohesion and camaraderie – a sense that 'we are all in this together'. If ride sharing, and other forms of sharing, were encouraged or even (dare I say it?) enforced – systemically implemented using geolocating apps – it would have the same effect. Given a new incentive, life could become much better, not worse. People would have to learn to

trust and care for each other once again.

The most luxurious vacation of my life was the week I spent at a retreat centre in Colombia without electricity. At night, torches would be lit. When they went off, we were bathed in starlight. I never saw so many stars. There was no use for our cell phones or laptops. When my brain discharged its static internal noise after a few days, I began to feel a level of natural peace and contentment beyond anything I had known for a long time.

We have been deluded by the momentum of our post-industrial society. We are taught to believe that progress only moves in one direction. The retreat revealed that many of the things our civilization believes to be necessary are actually just impediments that keep us cluttered and distracted. In the future, masses of people may realize that living with friends and family, in beautiful communities close to nature, where life is as self-sufficient and sustainable as possible, with minimal electronic interference, would be the ultimate lifestyle – and it is one that we can attain.

In any event, one essential point to grasp is that all of the changes in lifestyle and behaviour that we need collectively to adapt for our survival will have this side benefit: they will make the world kinder, gentler, happier, more cooperative, more loving. Living altruistically and cooperatively is closer to our basic nature as human beings than continuing our current state of alienation and competition. It is, after all, what we did for many thousands of years, as nomadic tribal people. Now we have to realize humanity as one unified tribe.

You may notice how all the solutions proposed in this book imply that we will be forced to live in a more responsible, truly adult fashion. In other words, there is something more in these practical solutions than just ‘saving the world’ – the same behaviours that support flourishing ecosystems will also force us to behave more wisely, carefully and compassionately – to act, ironically, as we’ve often wished we could, if we had the time or inner motivation to try.

Now let’s return to the evidence – the terrible, heart-breaking facts about what we are doing as a species, out of our greed, hubris and stupidity. Please stay with me. The thing to remember is that – unlike sports statistics, news on Donald Trump’s hair or Paris Hilton’s sex habits, or myriad other titbits that whirl past us in the course of a day

- these facts about the planetary boundaries will have a direct impact on our lives, in the near future. They will be of great concern, soon, for all of our children. Quite likely, they will be the focus of attention for everyone within a few short decades.

Nitrogen

The third planetary boundary, nitrogen pollution, is also one we have exceeded. The exponential growth of the human population over the last century is often linked to the invention in 1909 of the Haber-Bosch process for synthesizing ammonia, which made it possible to add nitrogen to crops, by producing artificial fertilizer, using petrochemicals. An essential component of all proteins, nitrogen is in short supply in nature - nitrates are produced by lightning, and also by a number of beans and legumes able to fix nitrogen in the soil through a symbiotic partnership with microbes that live in their roots.

Nitrogen runoff - along with phosphorous pollution - from agriculture has created enormous dead zones in lakes, oceans and wetlands. There are over 400 of these dead zones across the world's coastlines. Some of them are enormous - like the one around the Gulf of Mexico, which swells to 20,000 square kilometres in the summer. Excess nitrogen reduces biodiversity and accelerates climate change, since the industrial process to produce it emits greenhouse gases. We must reduce the amount of nitrogen released into the environment by two-thirds, from 100 million to 35 million tons annually, even though this will be difficult, considering that the current food production system depends upon huge inputs of artificial, fossil-fuel-based fertilizer for agriculture. However, as we will discuss, we need to change our approach to producing food in any case.

Land Use

Currently, an estimated 12 per cent of the Earth's surface is used for arable farming, while as much as 30 per cent of all land is used for animal grazing. Scientists believe that 15 per cent is the maximum amount of arable farmland the Earth can tolerate. We haven't reached that level yet, but as drought conditions intensify because of global warming, the

issue of land use is going to become a major one. This will be especially true if populations expand to an estimated 9 billion by mid-century, and if developing countries like China and India continue to demand more meat, which requires intensive inputs of water and grain,

The greatest species diversity – more than 40 per cent of plants and 30 per cent of animals – is found in a few dozen small areas that account for a little over 1 per cent of total landmass. We should seek to protect these areas, in particular. But many of them are under threat.

Malaysia, for instance, loses more than 5 per cent of its remaining forests every decade. Reasons for deforestation include demands for palm oil, urbanization, and various forms of clearing for agriculture. Mining is another factor as are hydropower and irrigation projects. Only about a fifth of Malaysia's original rainforest covering now remains, scattered in fragments across the region. Many developing countries are in similar straits.

The biologist Edward O Wilson proposes that humanity should set aside as much as 50 per cent of the Earth's surface area as a nature preserve. Although that sounds a bit extreme and unlikely, it is worth noting that, in the past, in many areas of the Earth, humans were actually caretakers and stewards of their natural environment. Evolution weeded out the ones who couldn't manage their local habitat – like the Easter Islanders, who left behind a number of enormous stone heads but no trees and few people. A good plan for the future might include reducing animal grazing lands significantly for reforestation, establishing larger nature preserves, and re-educating people so they become stewards and gardeners of their home rather than despoilers and extractors.

Fresh Water

Water may be the defining issue of the twenty-first century. Patterns of rainfall are changing around the world, as some areas suffer increasing monsoons while others enter permanent drought conditions. Global warming causes more ferocious floods as well as disastrous droughts. 'Drought is especially punishing for the hundreds of millions of subsistence farmers around the world for whom rain is the only source of water,' Hertsgaard notes. Within the next decade, it is estimated that

the number of people living in water-stressed countries will increase from 800 million to 3 billion. We are already seeing 'water wars', although they are not generally billed as such.

According to the planetary boundaries group, human use of fresh water should not exceed 4,000 cubic kilometres per year, of which we use an estimated 2,600 today – still within the limits, despite the myriad other impacts of our hydro-engineering practices. Scientists from Stockholm University estimate we have already passed that threshold, consuming more than 4,300 cubic kilometres annually, with 70 per cent used for agriculture. According to one extraordinary statistic, over 15,000 litres of water are required to produce one pound of beef. Other estimates have us slightly below the boundary threshold. Around the world, humans have constructed around 800,000 dams that block the natural flow of water, fragmenting most of the world's largest rivers. Even so, over a billion people lack access to reliable sources of clean water, and 2.6 billion people lack proper sanitation.

According to Mark Lynas, these dams 'impound approximately 10,000 cubic kilometres of water – a quantity so substantial that it measurably reduces the rate of sea-level rise (by about half a millimetre a year for the last half-century) and even changes the mass distribution of the planet sufficiently to alter its axis and slightly increase the speed of its rotation'. Many scientists believe we should seek to reverse some of the changes we have made to the natural course of rivers and drainage basins.

Meanwhile, glaciers and icepacks are rapidly melting around the world. Mountaintop glaciers feed rivers, streams and aquifers in India, Tibet and Peru, as well as California, sustaining billions of people who settled in the valleys below these sources, which have flowed reliably for tens of thousands of years. Their disappearance will cause social dislocations on a scale we cannot yet imagine. There is potential for a rapid scaling up of desalinization plants, particularly if this technology is improved, and if it can be powered by renewables. In that case, we might be able to have as much abundant fresh water as we need. However, we are still far from prepared for the water scarcity we are confronting globally.

Ocean Acidification

Although less discussed, ocean acidification is another huge and worsening problem. Up to 85 per cent of the carbon dioxide we release into the atmosphere each year ends up in the oceans, altering their chemical composition. In the last 40 years, we have made the world's oceans 30 per cent more acidic, as they absorb excess CO₂ pollution like gigantic lungs. One major concern is that the oceans may soon reach the limit in terms of the amount of carbon dioxide they can absorb, at which point they would start to emit carbon, rather than storing it. This feedback loop would accelerate warming.

Coral reefs are largely made of calcium carbonate, which is extremely susceptible to acidity. As the oceans grow more corrosive, the coral reefs will first die, then dissolve, disappearing completely. This deterioration is already underway. Marine biologists at the Royal Society believe the coral reefs 'will be in rapid and terminal decline world-wide' by mid-century if not sooner. With them will go much of the ocean's biodiversity. We are already seeing the mass proliferation of species like jellyfish and squid, which are filling the ecological niches left vacant as fish populations crash.

As of now, I haven't heard of many plans of action that can address ocean acidification. There are some geo-engineering ideas, but they seem far-fetched. One scheme involves putting masses of calcium carbonate or silicate material into the oceans – essentially, like giving the oceans a gigantic antacid, a Tums. To make any kind of difference, this would require mining such a huge volume of rock that this effort would be highly improbable, most likely impossible. Google Director of Engineering Ray Kurzweil, in *The Singularity is Near*, proposes the creation of nanobots – minuscule robots – that can clean up the oceans for us. So far, this remains fantasy.

Environmental Toxins

The level of environmental toxins and pollutants the Earth can absorb has not been established as a set limit. We know that plastic polymers and other industrial compounds have infiltrated every ecosystem on the planet. They also concentrate through the food chain, and in our

tissues, where they cause cancers, reproductive disorders and other adverse health effects. Chris Jordan has photographed dead birds on Midway Island – 2,000 miles away from the nearest continent – with their gullets full of plastic. Perhaps evolution – or future technologies – will find ways to make use of our synthetic polymers, but the process of breaking them down naturally will take millions of years.

Even so, industries continue to create new compounds, willy-nilly, and add them to the exotic bouquet of chemicals that is impacting on our fragile environment. Even where there have been studies of how individual compounds affect human health, there are no studies of the potential impact of multiple new chemicals when combined. A 2009 study of US drinking water, testing for pharmaceuticals and endocrine-disrupting chemicals, found 34 contaminants in just one sample, including atrazine (a herbicide), diazepam (Valium), risperidone (an anti-psychotic) and fluoxetine (Prozac).

Environmental contamination is considered responsible for the sudden enigmatic decline of some species around the world, including amphibians, butterflies and bats. Anecdotally, I am seeing many people I know developing strange allergies, chemical sensitivities, food intolerances and so on. This may be due to the chemical load we are all taking on, just by being subject to this strange laboratory experiment that corporations are subjecting us to out of a drive to increase their margins of profit.

Aerosol Pollution

The limit of the aerosols boundary is similarly unknown. Air pollution is responsible for more than 400,000 premature deaths each year in China alone. The developed world of the West has cleaned up its air over the last decades, largely by relocating factory production, mining and smelting to the developing world of the South and to Asia. In some cities in China, the air is barely breathable, and we see photos of Chinese people wearing facemasks as they go about their days. A Canadian company recently started selling bottles of fresh air to them. The soot produced by factories in the US, China and elsewhere ultimately drifts around the world, sparing nobody.

Aerosol pollution has a significant effect on the climate and the

hydrological cycle. Globally, smokestack pollution from the North is thought to have contributed to a major decades-long drought in the Sahel region of Africa in the 1970s and 80s. Aerosol emissions are also causing a rapid decline in the monsoon season in India, Burma and Thailand, threatening the food production and livelihoods of a billion people.

Humanity nearly caused its own extinction by inadvertently trespassing into the ozone boundary, although we now have the situation under control to some extent. One man, alone, was nearly responsible for bringing our life as a species to an abrupt, sickening end: the American chemist Thomas Midgley, who worked for General Motors in the 1920s and 30s, developing non-flammable coolants for refrigerators, discovered chlorofluorocarbon (CFC) also known as Freon, a synthesis of chlorine, fluorine and carbon, which became widely used.

In the 1970s, scientists discovered that CFCs were circulating throughout the Earth's atmosphere, where they were breaking down ozone, causing a thinning of the ozone layer, which protects the Earth from dangerous ultraviolet radiation. In the 1980s, a major international effort led to the Montreal Protocol, which phased out the use of CFCs. Due to the ongoing circulation of gases already released, the ozone layer is still thinning, but at a slower rate. It is estimated that the ozone layer could return to its pre-industrial level of ozone concentration by 2075, barring further tampering.

The world's success in handling ozone pollution can be taken as a positive sign. It proves the human community does have the ability to come together and change our industrial practices, when necessary. If we did it with ozone, we can, in theory anyway, do it with CO₂ – not to mention nitrogen, factory farming, genetically modified organisms, aerosol pollutants and the other factors accelerating us towards global meltdown. Of course, CO₂ is a tough one, because it is so pervasive.

On the other hand, the threat to our species unleashed by CFCs is an example of the unintended consequences of new technological breakthroughs. We should think about this in relationship to nanotechnology, biotechnology and other areas that the corporate elite promote as solutions to the hellish problems our industrial technologies have already unleashed. The past breakthroughs that were supposed to make everything great had tremendous negative consequences

that were unanticipated. The new technologies – interacting with the processes of life and matter at a deeper level – could have even more destructive impacts. This doesn't mean we shouldn't develop new technologies, but we must do so within an ethical framework and an ecological worldview that considers long-term consequences rather than prioritizing short-term comforts and immediate profits.

What Do We Do?

Living in New York City, I see new buildings going up all the time. I don't see these buildings covered in solar panels feeding energy back to the grid, or vegetable gardens on their rooftops. We keep building luxury condominiums and hotels, not earth ships and vertical farms.

Young people still feverishly pursue careers in the art world, fashion, rock music, celebrity journalism, marketing; they get their degrees in old master paintings and French critical theory and so on – I look over their shoulders in East Village cafes to see what they are typing away on – but, honestly, if people understood what was coming, we would be applying our intelligence differently. Young people would pursue careers in ecosystem management, permaculture, wetland restoration, carbon sequestration. The best and brightest would be learning how to share and conserve resources, how to organize local communities to maximize resilience, practices of active nonviolence and so on.

Our system doesn't reward all of the work that desperately needs to be done now, and it over-rewards everything that shouldn't be done – such as using financial tools to extract money from the poor and middle class and funnel it to the wealthy, or marketing new trends that seduce people into buying more clothes, cars and gadgets. Financial world predators, unleashing global chaos from their computer terminals, make exponentially more than primary school teachers or nurses who take care of the old and sick. And we are all caught in this system.

A major problem is our culture's entrenched ideal of individualism. This is something we must supersede, even though it is hard to imagine how to do so. In reality, our independence as individuals depends on our interdependence – with each other and all of life. Our current social and economic system obscures this basic truth. We should, instead, devise systems, in alignment with nature's principles, that help us realize it.

What's coming may seem bleak and chaotic – but there are many amazing solutions already within our reach. Others are just on the edge of becoming feasible. Actually, the technical solutions are kind of the easy part, as we will see. The more difficult struggle will be to change our political and economic system so that we can implement the technical solutions rapidly. This requires that we bring about an evolution of consciousness in a short period. But even this – I believe, on good days – can be done. After all, we built a global communications infrastructure over the last decades that is like a central nervous system. The multitude can trade ideas and adapt new social tools instantly.

So far, many existing alternatives remain little known. We must act to change this situation as quickly as possible. We now know that renewable energy technologies can be exponentially scaled up in a few decades to supply the entire world's population with non-polluting energy. If we coordinate a global transition to regenerative, organic and no-till agriculture, we will be able to put a great deal of excess CO₂ back in the soil. That transition can also be combined with the rapid distribution of regenerative technologies, like biochar gasifiers and biodigestors that convert organic waste into fuel while sequestering CO₂. We can stop all unnecessary forms of industrial manufacturing while we establish networks for sharing and conserving our remaining resources. All of this, in fact, is what we need to do. But how can we do it?

Now let's consider how we will transform our technical infrastructure if we decide to change our direction as a species, beginning with energy.

Rebellion

All through my early life, I had the eerie feeling of being subject to a sinister, overwhelming power. The enemy was a degraded, corrupt authority, much like the court in Kafka's *The Trial*. The centre was nowhere and everywhere at the same time. My distant nemesis could neither be targeted nor opposed.

Self-expression, humour and art seemed the only meaningful way to fight back against such a foe. Even as adolescents, my friends and I knew our enemy had already won the decisive battle. Since we had lost, the best we could do was to carve out a private realm of artistic and personal freedom where we maintained some illusion of control.

When I was five, I remember lying on my grandma's red upholstered couch, watching the saga of Watergate slowly unfold on her black-and-white television. I wanted cartoons, but she was determined to follow the hearings from beginning to end. Watergate was a mind-numbing drone. It was obvious to me that nobody was speaking directly or truthfully. The dull bureaucrats had mastered the art of shirking responsibility and passing the buck. Everybody seemed embalmed, speaking a dead language.

Watergate set the tone for my future disengagement from politics. As I grew up, I saw the system as a rigged spectacle of manufactured consent, compelling compromise or capitulation to the special interests who pulled the puppet strings of power. Once in a great while, I flicked a voting lever or joined in some protest march. But these gestures seemed empty, degrading. They did not feel like meaningful forms of participation. The sensation was one of being conned and gypped. I knew this system could never represent my values or ideals – even if I didn't yet know precisely what my values and ideals were.

By the time I came of age in the late 1980s, my Generation X had surrendered without a fight. Overwhelmed by Reagan, Iran-Contras, the global success of the neoliberal agenda, we believed we were powerless to change our society. We turned away from politics or economics.

We identified as bohemians, marginal outsiders. We focused on art, film, literature and the avant-garde. Taking our cues from the culture, we greeted any attempt to discuss the ecological crisis or America's procession of endless wars with derision and cynicism. The suicides of Kurt Cobain and David Foster Wallace seemed to sum up Gen X's ambience of hopelessness.

I now feel that contemporary art and culture are a bit problematic. Even when art, films or music seems to have a dissident viewpoint, they often serve to legitimize the prevailing system. Anything seditious, rebellious or seemingly disruptive actually feeds energy to the post-industrial capitalist mega-machine, which thrives on disruption.

Contemporary society has the ability to absorb, assimilate and neutralize almost anything that seems to threaten it. Media critic Thomas de Zengotita calls the method through which any potential alternative or threatening idea gets 'covered', swallowed up, by the mass media, the Blob: 'What must be covered is any event or person or deed that might challenge the Blob with something like a limit, something the Blob cannot absorb, something that could, in resistance or escape, become the one thing the omni-tolerant Blob cannot allow, something outside it, something unmediated – something real,' he writes in *Mediated*.

When we understand the mechanisms of post-industrial capitalism, we can use its techniques to potentially subvert it or accelerate its metamorphosis. If we apply our cunning and creativity effectively, it is quite possible we can transform this system peacefully from within. We don't have to 'smash the state'. We can supersede it. We can feed the Blob the antidote that will force it to dissolve.

Although I consider the contemporary art world is a nightmare, a black hole of ego and pretension that sucks a huge amount of excess capital and intellect into it, I believe art has a crucial role to play in our post-capitalist future. The German conceptual artist Joseph Beuys came up with the term 'social sculpture'. 'Only art is capable of dismantling the repressive effects of a senile social system to build a SOCIAL ORGANISM AS A WORK OF ART,' Beuys wrote. We can consider many human-made constructs – financial systems, festivals like Burning Man, intentional communities, even governments – as social sculptures, which we can intentionally design to change ourselves or enhance our powers.

We have new tools at our disposal that could allow us to accomplish what was once impossible and unthinkable. Ironically, yet appropriately, these tools are products of the system itself, which is revealing ever-more glaring inner contradictions. Art could find its proper function in helping to bring about this redirection. It would no longer be an ornament of post-colonial empire. In fact, if we are going to have a system after this one, art will play a far more integral role in it.

I believe many people feel deflated, defeated and disempowered by the system so early in life because of the failure of our world to provide us with access to anything transcendent or sacred. We are also wounded, in adolescence, by a sadness around love – by the sense that men and women are somehow at war with each other, that our deepest erotic desires are somehow shameful or wrong, and can never be met. When we understand the programming, we can consciously over-write it.

Instead of initiating people into adulthood through an act of visionary courage, our civilization indoctrinates and programmes us in many subtle and brutal ways. This is the residue of our Judaeo-Christian heritage, which denigrates direct experience, or gnosis, promoting received ideas and obedience to distant authorities. In my generation, we got the impression that whoever was hiding behind the curtain – the priest, the rabbi, the expert, the technocrat bureaucrat – possessed power over our world, and that we were exiled from it.

It was only after I published my first books that I realized I needed to explore social theory. It wasn't enough any more to believe the government sucked and the media was a sham – to reject the establishment, like some angst-ridden punk rocker. I needed to work out a sophisticated, reasoned critique. I needed to know what kind of alternative I believed in – something that had nothing to do with being a Democrat or Republican. I knew our society was approaching a tipping point that might lead to catastrophic breakdown within a few decades, but I didn't know what I would put in its place, or how this might happen.

Occupy

To define a political philosophy for myself, I undertook a brain-straining, labyrinthine course of study. I pitted Hannah Arendt's *On Revolution* against Lenin's *State and Revolution* and surveyed Marx,

Trotsky and Mao. I juxtaposed Rousseau's views on power against Machiavelli's, tried to understand the concepts of sovereignty and the general will, pitted Antonio Negri's ideas of 'immaterial production' against Slavoj Žižek's postmodern Marxism. I analysed social ecologists like Murray Bookchin, post-collapse theorists like John Michael Greer, anarchists like Kropotkin, liberal environmentalists like Bill McKibben and Gustave Speth. Years passed as I got more and more lost in a seemingly endless tangle of theories.

Suddenly, it was the autumn of 2011. Occupy Wall Street appeared on my doorstep. By the time I visited Zuccotti Park, the carnival was in full swing, with lines of police facing the young, cheerful, under-washed horde that had turned the tiny square into their motley home. The first reports from the media made it sound squalid and chaotic, a useless gathering of neurotic losers, with nothing better to do. As I found, this was far from the actual state of things.

For David Graeber, an anarchist and anthropology professor who helped inspire the movement, Occupy was the local expression of a 'wave of resistance sweeping the planet', part of a global response to imperial control and financial corruption. The plan, he writes in *The Democracy Project*, was to create the model for a 'genuine direct democracy' which would expose the charade of the current representational system. The Occupiers did this by launching the General Assembly. Meeting at the front of the park every day, by a tall orange metal sculpture, they made all their decisions transparently and collectively. Anyone who turned up could immediately participate.

Occupy applied Gandhi's tactics of nonviolent activism. These tactics had not been successfully used in the US since the civil rights movement in the 1950s – other uprisings had attempted to apply them but were quickly stomped out. For whatever reason – whether it was because it was the lucky or right moment or they needed a new story, or because mainstream journalists sympathized with the radicals – the press flocked to Occupy, giving it copious attention, which provided it with some protection from police aggression.

As I toured the bustling park, I was amazed by the quality of people's discussions, and the passion everyone expressed. It felt surreal – as if all of the conversations I had been holding inside my head with long-dead philosophers were suddenly being performed

publicly, witnessed by a crowd of engaged participants. Everyone who attended the nightly General Assemblies had the same opportunity to debate, discuss and contribute to decisions that impacted on the movement as a whole.

I saw passers-by – office workers and labourers – recruited to help build a new democratic society. I watched their faces light up, as they realized they were being invited to participate as equals in this process. There was electricity in the air – a sense of renewed possibility.

I remember, at one midday teach-in near the library, hearing two young women with matching dreadlocks and wire-frame glasses – they had dropped out of college to join the occupation – talk about what they were learning by living in Zuccotti Park. They called it a process of internal ‘decolonization’. They were freeing their minds, step by step, from the trance of empire. They said there were no experts in what they were experiencing, as they lived in the thick of it. Many Occupiers had a deep understanding of our political-economic system, and the planetary crisis. They knew the situation required a seismic shift and were willing to risk their lives for it.

Graeber notes that Occupy was, at its heart, a ‘forward-looking youth movement’. Its primary constituents were young people who had tried to make it in the mainstream, only to find the system rigged against them. They ‘watched the financial class completely fail to play by the rules, destroy the world economy through fraudulent speculation, get rescued by prompt and massive government intervention, and, as a result, wield even greater power and be treated with even greater honour than before, while they are relegated to a life of apparently permanent humiliation’.

Reform or Revolution?

The handling of the 2008 crash radicalized a generation of young people smart enough to realize the current system is in a doom-spiral. They are willing to transform what we have – to replace it with something truly humane, just and ecologically sustainable. During the 2016 US Presidential Campaign, the Occupy demographic emerged, for the first time, as a political force, impelling Bernie Sanders to prominence. Despite the efforts of the government, the media and

the financial sector to confuse the matter, millions upon millions are awakening to realize that the system we have is not working for them but is engineered to serve the interests of a small, elite group. We will probably see increasing polarization in the next years, as authoritarian movements also gain traction.

Graeber believes the distinction between reform and revolution has vanished in the United States over the last decades. Since the 1960s, the US has transitioned from a manufacturing-based economy to one based primarily on the sale of financial products and services. Financial products and services have no intrinsic or tangible value, since nothing is produced by them. Products like bonds, as well as 'junk bonds', can yield tremendous rewards – but these rewards actually amount to a re-appropriation of resources. Wealth is extracted from the poor and middle class and transferred to the elite group of speculators and hedge-fund managers at the top of the pyramid, who control the money supply through the Federal Reserve and other central banks.

As a result of this systemic transition, the US economy became 'little more than an elaborate system of extraction, ultimately backed up by the power of the courts, prisons, and police and the government's willingness to grant to corporations the power to create money', writes Graeber. At the top of the pyramid, financial, corporate and government interests collude to maintain a rigid, centralized system that works against the interests of the debt-burdened multitude. 'In America, challenging the role of money in politics is by definition a revolutionary act because bribery has become the organizing principle of public life.'

In 2008, we witnessed the meltdown of the global financial system due to the collapse of mortgage-backed securities. While millions lost their homes, the US government bailed out the banks and financial institutions, creating an ever-ballooning burden of debt that can never be repaid. But rather than addressing the underlying flaws in the system, the government committed 'American taxpayers to permanent, blind support of an ungovernable, unregulatable, hyperconcentrated new financial system that exacerbates the greed and inequality that caused the crash, and forces Wall Street banks like Goldman Sachs and Citigroup to increase risk rather than reduce it', journalist Matt Taibbi wrote in *Rolling Stone*.

Virtually none of the money given to the banks in the various stimulus packages and bailouts went to the homeowners or small businesses who were impacted by the system's malfeasance. 'Instead of liquidating and prosecuting the insolvent institutions that took us all down with them in a giant Ponzi scheme,' Taibbi points out, 'we have showered them with money and guarantees and all sorts of other enabling gestures.' The initial \$800 billion bailout was only the beginning. Up until recently, the Federal Reserve has created, *ex nihilo* - out of nothing - \$85 billion a month, using this credit to buy Treasury Bonds and mortgage-backed securities.

What this amounts to, according to journalist Chris Hedges, is the failure of the constitutional state - the checks and balances which were part of the original government of the United States have been overridden by financial interests, who control the levers of power. 'The collapse of the constitutional state, presaged by the death of the liberal class, has created a power vacuum that a new class of speculators, war profiteers, gangsters and killers, historically led by charismatic demagogues, will enthusiastically fill,' Hedges writes. 'It opens the door to overtly authoritarian and fascist movements.' As I write this book, Donald Trump has stepped through that door. There may be worse to come.

What has money become in our day and age? Money is a collective agreement that money is worth what the banks say it is worth. It has no intrinsic value, nor is it linked to anything tangible. The bankers and the administrators of the Federal Reserve and other central banks speak a complex technical language, difficult for most people to understand or follow. This is intentional. If the situation was made clear, people would, in all likelihood, rise up against it.

I meet a lot of people who claim to be 'spiritual'. They have impressive yoga practices, visit shamans deep in the Amazon, attend raw food retreats, ten-day silent meditations, spend megabucks on all sorts of workshops to heal themselves and develop their inner self. Personally, I found many of the twenty-somethings living in tents in Zuccotti Park, hanging out at local fast-food restaurants to get warm and eating donated pizza, to be more truly 'spiritual' than the people from the yoga, post-New Age or transformational festival scenes. The Occupiers were not just talking about unified consciousness and justice as some

abstract ideal. They courageously risked their lives and their future to protest about our unjust society, seeking to build something better.

Occupy at first had a festive, numinous quality to it – like the last stand of the Mohicans, or the opening of a portal into another dimension. With Zuccotti Park, the Occupiers found an acupuncture point at the solar plexus of empire, just a few blocks from Ground Zero, across the street from Wall Street, the iconic capital of world greed, and punctured it. The brave act of a handful of youthful anarchists garnered global attention, sparking hundreds of copycat occupations across the world, summoning forth a Dostoevskian cavalcade of the wise and wounded, lost and disoriented, enraged and cogent. It was raggedy Buster Keaton pitted against a grim-faced army of RoboCops.

Friends from various stages of my life in New York and my years at Burning Man resurfaced as regulars at Occupy, working in the kitchen, running the library or cheerfully pedalling the bicycle generators that powered the media centre's laptops and cameras. Some friends went out at night to project anti-capitalist slogans on skyscrapers or joined in morning actions where dozens of protestors, dressed as janitors, brought brooms down to Wall Street and swept it out.

Democracy and Anarchy

When commentators criticized the movement for lacking clear demands, they were missing the point. Occupy was not, in its essence, a protest movement. It was a process movement. The Occupiers were seeking to build a new political system, based in direct participation, to supersede and replace the twisted version of pseudo-democracy we have now. Their goal was not reform. It was revolution – an anarchist revolution, giving power to the people.

As Graeber and other writers note, anarchy tends to be misunderstood. Anarchy is actually the most direct and egalitarian form of democracy, based on building consensus without coercion, recognizing the autonomy of everyone involved. Anarchist writers are often brilliant at summoning up their vision of a truly liberated society, what it would feel like and how it would operate. Instead of supporting institutions that become rigid, hierarchic and corrupt, anarchism would inspire continuous flux and immediate participation. What's interesting is that

our new communications tools could facilitate such a system in a way that was never possible before.

Pyotr Kropotkin, a Russian prince who lived in the late nineteenth century, defined anarchism as 'the most complete development of individuality combined with the highest development of voluntary association in all its aspects, in all possible degrees, for all imaginable aims; ever-changing, ever-modified associations which carry in themselves the elements of their durability and constantly assume new forms which answer best to the multiple aspirations of all'. An anarchist society would be one 'to which pre-established forms, crystallized by law, are repugnant; which looks for harmony in an ever-changing and fugitive equilibrium between a multitude of varied forces and influences of every kind, following their own course'. For Kropotkin, who was a biologist, such a society would be based on nature's principles.

Gandhi, similarly, looked towards a future condition where there would be no political power – no machinery of the state: 'Representatives will become unnecessary if the national life becomes so perfect as to be self-controlled. It will then be a state of enlightened anarchy in which each person will become his own ruler.' Gandhi thought the ideal state would have 'no political institution and therefore no political power'. The ideal state, in other words, would be the one that no longer exists. I find this an exciting prospect.

The commonly held belief is that we need government and the state to prevent terror and chaos. Do we really know this to be the case any more? History reveals the state to be guilty of endless dark deeds and scorched-earth policies. The US government has laid waste to whole nations, causing the death and dislocation of large populations in Vietnam, Cambodia, Afghanistan and Iraq, using napalm, Agent Orange and shells of depleted uranium to further its geopolitical aims. Could no government do any worse?

Thinkers like Albert Camus and Hannah Arendt draw a sharp distinction between rebellion and revolution: 'Rebellion's demand is unity; historical revolution's demand is totality,' wrote Camus. The tendency of historical revolution is to demand the 'absolute negation' of its subjects, leading to ideological purity, mass murder and slavery without limit. The communist revolutions of the last century obliterated the individual, turning people into puppets of the state, forced to fulfil

the inhuman dictates of a mega-machine. Camus preferred rebellion as a model.

Today, the radical reinvention of society – by global insurgency, mass awakening, spiritual intervention – seems necessary. It is something we must demand and enact. If we don't, there may be no future for humanity. But the models provided by past revolutions are outmoded, old hat. They won't serve us any more. So what can we do?

I don't think we can simply dissolve the governments we have now, as that would create chaos. But is it possible that we might engineer a peaceful step-by-step transition from governments controlled by wealthy elites where participation is limited, to a peer-to-peer system where local communities have autonomy, where power is decentralized, where we peacefully dissolve nation-state borders, where the people are free to be? I know this seems impossible. But so did a smart phone, 3D printer or neutron bomb until somebody built the thing.

Why don't we at least make this thought experiment? Until now, our focus has been technological progress, not social innovation. Our society has been focused on making things that make profit, not on reinventing our social system to support the greatest level of happiness, self-knowledge and freedom for all. What would happen if we changed our focus?

Our networks of communication could be used to orchestrate a worldwide campaign of education. As we teach the people of the world about what's happening ecologically, we will also train them in participatory democracy, as well as ecological restoration. We know that the collective consciousness is shaped by the media. Therefore, we can feasibly use media to point people in a new direction – one that allows us all to thrive. What I am proposing as the ideal is something like a holistic anarchism, where we apply the existing tools of post-industrial society – the tools of media, communication, industry and manufacturing – efficiently to construct a unified, peaceful planetary culture based on principles of ecological restoration and decentralized, local autonomy.

In actual fact, the United States has never experienced true democracy, except on a small scale, in townships. The American political system from the outset was carefully orchestrated to maintain wealth, privilege and elite control through a system of representation. In the Declaration

of Independence, America is not defined as a democracy, but, explicitly, as a republic. James Madison wrote: 'In a democracy the people meet and exercise the government in person; in a republic they assemble and administer it by their representatives and agents. A democracy, consequently, must be confined to a small spot. A republic may be extended over a large region.' The US government became the model for other nation-states to follow over the next centuries.

Madison, like most of the Founding Fathers, argued that true democracy would lead inevitably to mob rule, factionalism and despotism. He feared what he called 'the horrors of democracy'. Given the power, the multitudes would undermine the structure of elite privilege and private property that the Founding Fathers, as landholders and legislators, wanted to maintain – and that their descendants have held to this day.

I agree with the Founding Fathers: if we establish a direct democracy where all people have an equal say, elite power and privilege will be dissolved, eventually. There will no longer be such extremes of wealth inequality, and everyone – including the super-rich – will be much happier because of it. I don't think a planetary democracy would disintegrate into mob rule or despotism, or some grim form of communism. As Rebecca Solnit discovered when she visited former disaster zones, when governments collapse the vast majority of people act more altruistically and compassionately towards others. They come together organically in communities and local democracies. This pattern is repeated again and again.

We seem to be quickly approaching that threshold where, as the social ecologist Murray Bookchin warned, our world 'will either undergo revolutionary changes, so far-reaching in character that humanity will totally transform its social relations and its very conception of life, or it will suffer an apocalypse that may well end humanity's tenure on the planet'. This process will only be finished when humanity no longer exists on Earth, or when we have established a just and humane society, liberated from artificial scarcity and free of domination.

Occupy represented the emergence of a new social organism, based on direct democracy and consensus. Like a windblown seed from a hothouse flower, Occupy infiltrated the control zone of imperial power, found a crack in the concrete, took root and suddenly blossomed. During

the occupation, Zuccotti Park functioned as a new social organism.

The chaotic appearance of the park as a shanty town or tent city masked a well-defined order. In a short period of time, the Occupiers turned their temporary autonomous zone into a tightly organized command-and-control centre with sectors designated for particular functions. Within its small radius, Occupy included areas for public debate, education, communication, drumming, meditation, waste management, rest and so on. It was much like a cell, with internal functions, maintaining a permeable boundary with the world around it. Occupy Wall Street constantly incorporated new molecules – in the form of curious strangers – from the outside. Either visitors would circulate out again, or they would find their function within the cell's metabolism and stay put.

Spontaneous Evolution

Let's consider what's happening – and what we might make happen – through the lens of evolutionary biology. Long ago, the trillions of cellular entities and microorganisms that make up our bodies were competing with each other, devouring each other, as they blindly sought to grow and reproduce. Through a series of crises – through an evolutionary process of trial and error – they found they could further their interests by cooperating with each other. They learned to devise more complex structures, like eyes, bones, muscles and skin.

Spontaneous Evolution is a collaboration between Bruce Lipton, a cell biologist, and Steve Bhaerman, a political philosopher. They believe we are being impelled towards our next stage of planetary civilization, marked by interdependence. We will learn to coordinate our functions within the symbiotic super-organism made up of humanity as a whole in a harmonic relationship with the Earth's ecology.

As an analogy, they consider the process of the caterpillar becoming a butterfly. In the chrysalis, the caterpillar doesn't just sprout wings. After it has devoured all of the food surrounding it, the caterpillar's entire body melts down into a biotic goop. The code for the transmutation of the organism is held by a handful of 'imaginal cells' that begin to propagate as the caterpillar dissolves. At first, the dying caterpillar's immune system attacks the imaginal cells, but this only

strengthens them. As they multiply, they install the operating code for the transforming organism.

‘When provided with a new awareness,’ write Lipton and Bhaerman, ‘the cellular population that comprises the deteriorating larva collaborates to restructure their society in order to experience the next highest level of their evolution.’ We have to hope that at the inevitable end of the metamorphosis of human society, we will have a live butterfly, not a dead moth – or an army of robot flies.

Biology reveals a pattern of fractal self-similarity on different scales and levels of complexity. Immature ecosystems are characterized by competition and aggression, while mature ecosystems are based on cooperation and sharing: our own bodies provide an example of this. They follow the same principle defined by the United States’ original slogan: ‘*e pluribus unum*’ – ‘from the many, one’.

Evolution does not happen incrementally. Crises induce sudden mutations and rapid leaps. These leaps represent ‘an evolution of increasing levels of communal complexity and interrelationships’. Theoretically, humans are on the verge of making a jump to collective harmony, modelled on the coordinated activity that happens within our bodies, which work together to support the success of the whole without wasting or hoarding energy. That is what the pattern of evolution suggests.

Unless we wipe ourselves out entirely, I think it is inevitable. The only question, actually, is the time-scale and the amount of destruction that will occur before we make this transition. It could take hundreds or thousands of years (which are tiny segments of time, compared to the millions and billions of years of evolution), during which the human population may crash drastically due to ecological catastrophe – perhaps down to a few hundred million or less. A better option is that we use our current infrastructure to bring about this change in our current lifespans, sparing our human family untold misery and suffering.

What we will see in the future is not a further biological evolution of individual humans – we won’t suddenly mutate to be able to breathe methane and eat plastic – but a social evolution, facilitated by technologies and social technologies. Breaking through the current obstacles posed by governments, the financial system, the cult of profit

and hyper-individuality, we will learn to build durable communities. A community is an assembly of individuals sharing the same interests and seeking the same goals – which can be as simple as a peaceful, happy life. Just like the microorganisms in our bodies, which gave up some degree of autonomy to become integrated within a greater whole, we will form communities to gain increased self-awareness and resilience – to enhance our happiness.

In *Non-Zero: The Logic of Human Destiny*, Robert Wright similarly proposes that evolution reveals a direction, pointing towards humanity becoming a harmonic planetary super-organism, a holon made up of nested holons. We are, inexorably, becoming a planetary community that orchestrates itself in an ever-more harmonic and unified way. ‘As technology continues to shorten economic distance, the logical scope of supranational governance could conceivably become the whole planet,’ he writes. Where I differ with Wright is that the kind of ‘supranational governance’ he envisions seems like the neoliberal New World Order taken to the next level. Instead of more corporate globalization, we can choose to reinvent our political and social systems to support local autonomy and bioregionalism within a truly planetary framework.

According to the postmodern worldview, as alienated individuals, we fight to maximize our personal advantage in a cutthroat world. The reductive scientific paradigm sees the universe as mechanistic, with genes as the master molecules determining our fate, but the new vision from biology is one of interdependence and symbiosis instead of cutthroat competition.

Much like single-celled organisms hundreds of millions of years ago, we find ourselves at a threshold where we must overcome our sense of separate identity to evolve new social organs. To survive, we must overcome limited self-interest and learn to cooperate for the benefit of the whole. This requires a change in our social nature.

As a new paradigm, epigenetics overturns the mechanistic ideology, presented by Richard Dawkins and others, that sees DNA as ‘the selfish gene’ or the ‘master molecule’ which controls the organism’s behaviour. The DNA code within a cell can produce tens of thousands of proteins. How genes express themselves, what proteins they produce, depends on the cell’s relationship with its environment, as the cell chooses, in a sense, what to incorporate into the cell’s metabolism through its

permeable membrane, based on cues it picks up from its surroundings. In other words, instead of being helpless captives of our genes, we have great power to influence both our health and our environment, if we can reckon with the subconscious programmes that guide much of our behaviour.

If we are going to make a leap to a new state of consciousness and social system, we must overcome the subconscious beliefs that distort our perceptions of our world and ourselves. At the moment, a great proportion of our behaviour is controlled by invisible ghosts, phantoms from the past. These ghosts limit people's awareness of their innate potential – their capacity to see their world clearly, heal themselves and work together for humanity's collective benefit. This is another reason that our self-transformation requires a spiritual evolution, an opening of consciousness, not just a political change.

Occult Conspiracy

So far, I have tried to be as honest as possible about what I personally believe is happening to our world. I have suggested we can see the ecological crisis as an initiation and also as a necessary stage in our evolution as a species. To me, it seems that nature has not abandoned us, but has orchestrated this transition. The best I can do is give you my best efforts to understand our situation, holding nothing back. As I said earlier, you don't have to agree with me about everything.

I have been primarily focused on the material and tangible aspects of our plight, but I think we should consider also the occult or invisible forces that may be involved, without overdoing or belabouring an examination of this question. Some writers, such as David Icke or John Lash, believe that humanity is currently controlled by off-planet or extra-terrestrial forces. This is also discussed or alluded to in many ancient works.

The Gnostics are often thought to be a sect of Christianity. In fact, the Gnostics were not Christian heretics. They carried the knowledge of the ancient Mystery Schools, which were brought to an end when the Roman Empire adopted Christianity in the fourth century AD. The Gnostics thought this world was an illusion – much like the simulated reality of *The Matrix* – constructed by deviant spirits, which they called

the Archons, ruled by a cruel, deranged Demiurge. The Archons sought to compel humanity to believe in them, and to deny the existence of a true reality that we can only find through our personal efforts. In the Gnostic Gospels, Christ says, 'Open the door for yourself, so you will know what is.' But as Christianity merged with the Roman Empire, it enforced faith and obedience, rather than self-knowledge.

According to Lash, the Gnostics recognized the rise of Christianity as a deviation from spiritual truth. They believed it was devised by the Archons, who wanted to maintain control of humanity. When the Gnostics tried to educate the people and sound the alarm, they were killed – brutally assassinated, burnt at the stake. The priests used methods of indoctrination to control the people, in place of initiatory techniques.

David Icke believes that humanity was manipulated by extra-terrestrials at some point in our past. We were intended to be a slave species. These aliens either interbred with, or perhaps performed genetic experiments on, our primate or hominid ancestors. He thinks the ruling families – many of whom can trace their family trees back to early Roman emperors – are focused on bloodlines, because they can trace their genetic descent back to our alien, reptilian overlords. The trace of this heritage is the combination of genius with sociopathy. I find this an interesting thesis, but too literal and one-dimensional.

The alchemical philosopher Patrick Harpur looks at our situation differently. He questions the basis of modern, mental-rational consciousness. We have an inveterate tendency to believe that things must be either literal or imaginary, true or false. We are trapped in either-or dualism. Traditional and aboriginal cultures don't share this bias.

'Traditional societies do not distinguish between myth and history in the way that we do. Mythical events were not thought to have literally happened; yet in another sense they were true, as if they had,' Harpur writes. He quoted an ancient author, Sallust (86–34 BC), who wrote: 'These things never happened; they are always.' I believe we will attain the next level of consciousness as a species – overcoming the limits of mental-rational postmodernity – when we integrate the scientific worldview with this traditional perspective. We will transition from a dualistic viewpoint to an integral realization, accepting the paradoxical nature of reality.

Even our belief in a linear cause and effect is ultimately an act of faith. The universe might be organized on principles that are quite different from what we understand or imagine. The effect might precede the cause, as Nietzsche noted. 'History is that mythical variant we have chosen to take literally,' Harpur asserts.

By gaining initiation into the spiritual worlds, people realize the world is a cosmic illusion, ultimately a dream, as Tibetan Lamas remind us, as 5-meO-DMT directly reveals. Paradoxically, this doesn't make the world any less important or 'real'. The dream we are in is our precious opportunity for learning and awakening, for evolving spiritually. As it is in dreams, time may not be as linear or as straightforward as we believe it to be. There may, indeed, be other forces – powers or principalities – who seek to manipulate humanity, as the Gnostics believed; who play with us through history. But these forces are also, in the end, projections of our psyche.

Pronoia

If only one consciousness unfolds its creative capacities through all of us, then everything we experience as a nemesis or an opponent is actually a helper or a teacher in disguise. We have more reason to be 'pronoiac' than paranoiac. Pronoia is a concept developed by the astrologer Rob Brezsny. He thinks the universe is actually conspiring, at every step, to give us the most amazing experience we can handle at that moment.

I tend to agree with Brezsny, but I also think pronoia only makes sense – the world seems more pronoiac to a California dreamer than a Somalian refugee – if we also integrate Eastern ideas of karma and reincarnation. According to these wisdom traditions, our souls pass through many lifetimes; our actions in one lifetime determine our opportunities in future lives. Physics has demonstrated 'quantum nonlocality', where particles remain connected, even across vast distances, indicating that time itself is an illusion. Perhaps as we extend our knowledge of the quantum world, we will gain deeper ways of conceiving phenomena that are now considered mystical, such as reincarnation, or the *chakra* system.

If space and time are tools of our animal understanding, if they don't exist in reality – a reality defined by quantum nonlocality – then

what we call a 'past life' might be more like resonance with an energy cluster. A particular set of experiences, feelings and thoughts might leave an imprint or remain connected through the quantum world. The subtle bodies and esoteric energy centres could have substance through consciousness itself, held in a morphogenetic field.

What some left-wing critics call 'empire' is a projection of our collective ego. The ego seeks control and solidity and can't admit these are illusions. In *The Wizard of Oz*, Dorothy discovers that a frightening spectacle of omnipotence is created by a little man hidden behind a curtain. We are in that situation today. The little man represents all of our fears and inadequacies, our lack of faith in our own powers.

In our society, a tiny group – the ruling elite, dubbed the 1 per cent by Occupiers – run the financial institutions, the mass media, the energy corporations. Seeking to maintain their power and control, this group employs experts in persuasion and propaganda, neurolinguistic programming and social psychology. It has inherited a whole structure of empire that is based on indoctrinating people, controlling them through artificial scarcity and violence, and keeping them ignorant, divided, disempowered, acting against their own interests. Now this control system is reaching its limit, confronting an obstacle which it can't control or assimilate.

I could go much further down this rabbit hole. I could look at the connections between the Bavarian Illuminati, the Freemasons, the Yale secret society Skull and Bones, and so on. I could consider the nihilistic worship of power as something occult and, in Steiner's terms, Ahrimanic. I don't think it will be helpful. Conspiracy theories have a hypnotizing, fixating quality. They can be profoundly disempowering.

I do not doubt there are many levels of conspiracy and complicity among those in power. Some of them may have an occult understanding of our situation. Some may be literal Satanists. Some may believe they have contacts with entities, Gods or grey aliens, that are not from this world. Whether this is true or not, it doesn't mean we can avoid our responsibility or abdicate our agency.

I recognize there are very strange, sinister worlds relegated to the cultural margins. These range from well-documented satanic rituals of child abuse among British Members of Parliament to semi-credible reports on treaties and technology transfers between the US

government and extra-terrestrials. But these levels of subterranean connection and conspiratorial shadows are nothing compared to much more unbelievable facts. Among these is the fact that we exist at all (on a planet spinning around a star at 67,000 mph, as that star spins around the centre of the Milky Way at 450,000 mph), that the moon and the sun appear to be the same size in the sky and form perfect eclipses, that the relationships between the orbits of our planets weave perfect harmonic patterns according to Phi-based ratios, and so on.

Previous civilizations such as the Aztec, classic Maya and Egyptian understood that dark and light were complementary principles and both needed to be honoured and recognized. They created initiatory paths for those innately attracted to sorcery, malevolence and cruelty, as well as those who used ritual magic for benevolent ends and healing purposes. Mesoamerican cultures had temples dedicated to Quetzalcoatl or Kukulcan – a creator deity who protected life – as well as places to worship Tezcatlipoca, the god of black magic and the jaguar. In this way, those with innately destructive or sociopathic tendencies were integrated into the social order. By denying this polarity, monotheistic religions like Christianity actually empowered those with sociopathic tendencies to become leaders of society as a whole. If we are going to restore the sacred dimension to post-postmodern civilization, we will have to find a way to acknowledge the power of darkness, but place it within a system that allows the benevolent forces of light to guide, guard and rule.

In the transition from ancient myth-based societies to modern civilization, we lost ceremonies and rituals of initiation, while the priests and ruling elites designed a social structure based on hierarchical control and indoctrination, which kept the power in their hands, forcing the masses into obedience. In order for humanity to survive and eventually thrive, we must bring about a polar reversal of this system by creating a new synthesis, using its tools and techniques to bring about our freedom. As we will explore, there are many reasons to believe we can engineer this transformation.