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Our Emerging Cultural Shift: Regaining the Moral Case to Address Climate Change

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Abstract:

Today, we have made climate change trivial by making its solutions easy, looking for simple answers that are palatable, generally framing it in the language of commerce. In the long run, it won't work. There is no technological or political silver bullet to solving our environmental problems. While important in the short term, Elon Musk and the power of the market alone will not save us in the long term. In the long term, we will have to change the way we think. Without systemic changes in our culture and values, we will never recover from the destructive path on which we are embarked. This warning becomes all the more urgent as we find ourselves facing a new scale of environmental problems in what scientists are calling the Anthropocene, an era that requires a fundamental change in the intellectual, cultural and psychological conceptions of who we are as humans, what is the world around us, and how the two are intertwined. And to that end, solutions must be found in religion and philosophy. If the collective responsibility we need in the Anthropocene is connected to the teachings of the Bible, Torah, Quran, Bhagavad-gītā, Tripitaka and oral traditions of indigenous peoples, or the philosophies of Aurelius, Locke, Voltaire, Madison, Wordsworth, Thoreau, and Russell, then the world can change on its axis. It has happened before and with great upheaval, and it can happen again. But it will involve a culture shift as grand and sweeping as the Enlightenment, Reformation or Scientific Revolution.

Keywords:

Climate Change, Anthropocene, Culture, Religion, Philosophy, Enlightenment

Our Emerging Cultural Shift: Regaining the Moral Case to Address Climate Change

I receive hate mail for my research and my writing on why people reject the science of climate change. Most of it can be sorted into a few basic messages. Some people fear economic disaster. These emails ask why “ideologues like yourself want to force the USA to lower its standard of living,” “de-develop the world” or bring about the “Marxist destruction of civilization.” That last email opened with the appropriately matched salutation - “Greetings Komrade.” Others fear increased government regulation and a loss of freedom, warning that “green jobs is just an ideological push for a Euro-style disaster” or that “the environmental agenda seeks to use the state to create scarcity as a means to exert their will, and the state’s authority, over your lives.” Still others distrust scientists as elitist, warning that “you self-appointed overseers” expect that “us peasants will take you and your fellow ‘scientists’ seriously.”

Yet another category of hate mail is religious in orientation. One critic wrote, “You think you are doing good, but you are working for Satan” while another speculated “you are a secular evolutionist, right?” A recognition of climate change comes from the devil? If I believe in climate change, I must not believe in God and evolution? This is a vibrant strand of the climate debate. Rush Limbaugh devoted episode of his show¹ to make the argument that climate change and a belief in God are mutually exclusive. The very thought that humans have become so powerful that we can alter the global climate is, to some, complete hubris. In their eyes, we are not that important. God is in charge out there, we are not, and we live as the beneficiaries of His divine providence.

These attacks aren’t limited to mail, though. I have faced them in person. After one of my talks, an angry man held up a Bible and informed me that God promised Noah he would not flood the earth again. Therefore, “the seas cannot be rising.” After another talk, a young woman approached me, clearly upset. She said she believed in climate change, but she came from a deeply fundamentalist family and the science of the former did not mesh with the theology of the latter. Her family saw climate change through the lens of the Book of Revelations. In short, if the world would come to an end through fire, and climate change will bring higher temperatures, maybe climate change is the fulfillment of that prophecy. “So why resist it if it’s God’s will?”

How do you answer a question like that? I did my best. “Isn’t that the same,” I offered, “as saying that since we are all going to eventually die and go on to an afterlife, we should simply hasten the process and kill ourselves?” Seeing only mild agreement, I pursued a different tack. “Since climate change affects the world’s poor more than ourselves, is allowing it to happen the same as persecuting the poor?” I hope I gave her something to think about but how could a

professor from liberal Ann Arbor counter her family's conservative religious values in a ten-minute conversation? We're talking about millennia of religious dogma here. It will not change overnight.

When these critiques, both by mail and in-person, first began, I was perplexed. Why would someone send angry messages to someone they don't know over a scientific issue? Through these experiences, and later backed by my (and other's) research,² I have come learn that it's because, for them, this is *not* a scientific issue. The reason that the climate debate is so polarizing is because the issue and those that promote it threaten deeply held values for certain segments of society.

And that is the lesson that I draw from these experiences. We as a society can only fully address climate change when it is reflected in our deepest values about who we are and how we should live. In short, it must be embedded in our religious and philosophical values—values that organize how we see the world, even if they're implicit. That will take work and effort, a lot of effort. But anything short of changing our beliefs will fall short of addressing the full scope of the climate challenge.

This point is not just for those who deny the science. Even the most liberal among us, those who contend most strongly for action on climate change, have lived our entire lives steeped in values that are increasingly at odds with a sustainable world. Building a livable world requires a new understanding of our species' role on Earth. Reorienting this sense of self is something that all of us must confront. Easier said than done, perhaps. But here's where it might start.

Making climate change trivial

Looking to change religious and philosophical values may seem like overkill to some. Many people respond to the climate crisis by looking to technology and consumer decisions—to more windmills, solar cells, electric cars, and fewer plastic bags. According to this line of thinking, we have to change only a little about ourselves; instead, we'll need better, more climate-friendly gadgets.

But for at least half a century, there has been a parallel tradition³ that rejects this faith in market or technology-based solutions. It asserts that these solutions may in fact be setting us back. In 1949, ecologist Aldo Leopold⁴ wrote that “No important change in ethics was ever accomplished without an internal change in our intellectual emphasis, loyalties, affections, and convictions. The proof that conservation has not yet touched these foundations of conduct lies in the fact that philosophy and religion have not yet heard of it. In our attempt to make conservation easy, we have made it trivial.”

His words bear repeating today. We have made climate change trivial by making its solutions easy, looking for simple answers that are palatable, generally framing it in the language of commerce. We count carbon emissions and look to the decreasing price of solar cells and the increasing market value of Tesla as measures that we are making progress. But making the “business case” to address climate change is as absurd as making the business case to not commit suicide. And yet, that is how we are trying to change our culture, one consumer transaction at a time.

In the long run, it won’t work. While free-marketers and technology entrepreneurs may advertise otherwise, there is no technological or political silver bullet to solving our environmental problems. While they will reduce our carbon footprint, they will not make it go away. Electric cars are good but they are still cars that require energy and resources to be built, operated, recycled and disposed, all of which increase our carbon emissions (even if some of that energy comes from renewables). Geo-engineering may be good as a way to ameliorate our impact on the environment (though many fear that they will make things worse). But both geo-engineering and electric cars are designed to allow us to continue our prior lives without change – we will continue to live in ever larger homes, drive ever larger cars and consume as we always have. In short, these are Band-Aid solutions that do not address the root problems that lie within our culture. While important in the short term, Elon Musk and the power of the market alone will not save us in the long term. In the long term, we will have to change the way we think.

The source of the climate problem is not just our technology or economy. The source of the problem is our beliefs and values that define their purpose and form.⁵ If we continue to desire perpetual economic expansion, endless population growth, more material stuff to buy and throw away, plastics in any form and purpose, and an environment that will never cease to provide the resources we want and accept the waste we dump into it, then we will fall back into the convenient and lazy mindset that technology and policy will fix the problem for us. But without systemic changes in our culture and values, we will never recover from the destructive path on which we are embarked. This warning becomes all the more urgent as we find ourselves facing a new scale of environmental problems in what scientists are calling the Anthropocene.

The challenge is not climate change, it’s the Anthropocene

Consider the fundamental question of climate change: Do you believe that we, as a species, have grown to such numbers and our technology to such power that we can alter the global climate?

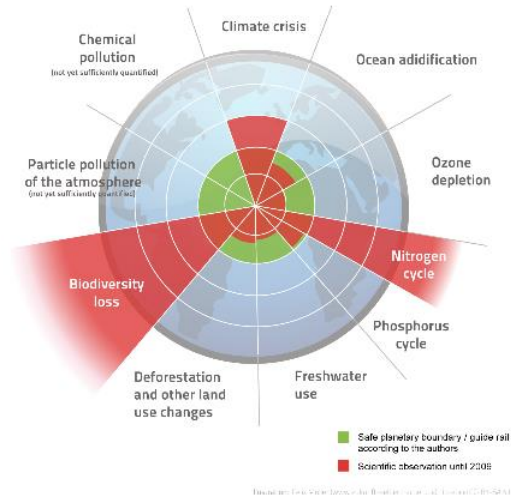
If you answer this question yes, then you are accepting a new and profoundly different reality for the human experience. You are accepting that we have entered what scientists are calling the Anthropocene, a new geologic epoch in which the world's 7.5 billion people are now taking charge of the Earth's ecosystems.

First proposed by Nobel prize winning chemist Paul Crutzen and biologist Eugene Stoermer in 2000, the Anthropocene,⁶ the "Age of Humans," started around the industrial revolution of the early 1800s (though some place its origins much earlier, others place it with James Watt's invention of the steam engine in 1776 and still others place it with the first atomic tests in 1945). Whenever it started, the Anthropocene became more acute with "the Great Acceleration"⁷ from the 1950s onwards. Indeed, the 2003 UN Millennium Ecosystem Assessment⁸ concluded that "over the past 50 years, humans have changed ecosystems more rapidly and extensively than in any comparable period of time in human history." Since that report was published, the rate of change has not diminished. The world you grew up in is not the same as the world that the next generation is growing up in. And the problems they face are fundamentally different than those that have marked the "modern environmental movement" since it started in the 1970s.

To fully understand the Anthropocene, we have to understand how it extends beyond "mere" climate change. Crucially, it describes and integrates other aspects of the planet's ecosystem that are fundamentally shifting. One group of scientists have identified nine "planetary boundaries"⁹ that represent "thresholds below which humanity can safely operate and beyond which the stability of planetary-scale systems cannot be relied upon."¹⁰ Climate change is obviously one of them. But we are also dumping excessive amounts of nitrogen into the environment, and causing species to go extinct at alarming rates.¹¹ The former is causing algae blooms and massive dead zones in our rivers, lakes and oceans; the latter is causing what is called the "sixth mass extinction,"¹² where as much as half of all present species could be extinct by 2100.

Planetary Boundaries

after Hoff and Rockström, C. in *Science*, 30, 12, 2009



Source: Rockström, J. et al. (2009), "Planetary Boundaries: Exploring the Safe Operating Space for Humanity," *Ecology and Society*, 14(2): 32.

Looking to the other six boundaries, one seems to be on the mend – ozone depletion – but the other five loom menacingly on the horizon. We are causing the oceans to become more acidic (and warmer), which is bleaching the coral reefs and destroying the base of the aquatic food chain; we use more than half of the world's readily accessible freshwater at rates that cannot be replenished; we have converted massive amounts of forests, grasslands, wetlands and other vegetated areas to human use, mostly for agricultural purposes; we continue to use the atmosphere as a dumping ground for pollution, particularly aerosols, which change weather patterns; and we dump toxic chemicals into the environment with diverse and unpredicted impacts.

An important caveat is needed here. The word "we" in the previous paragraph does not include those who did not contribute to our Anthropocene challenges. We need to recognize that the responsibility between the developing and developed world is not equal. "We" are those in the affluent world who have, according to scientists, helped humanity cross three of these planetary boundaries. The unprecedented and widening income gap in both the United States and the world is being paralleled by a similarly widening "climate divide"¹³ where the poorest of the world are least responsible for climate change and are most at risk, while the affluent of the world are most to blame but have the resources to adapt to its impacts. People in New York may be able to afford to build sea walls; people in Bangladesh may not. Consider, for example, a recent trend in private fire-fighting teams¹⁴ for the affluent, their expensive homes and their cautious insurance providers. This has led some to suggest that the proper term for this new epoch should be "Capitalocene"¹⁵ to call out capitalism, and particularly the Western economy, as the cause.

As the term suggests, “planetary boundaries” are far more consequential than the insults we have historically inflicted on the environment. Instead, they represent ways in which we are now teetering on the edge of irreversibly altering our environment—perhaps on the very edge of livability. And, as we move from 3 billion people when I was born in 1961 to 7.5 billion people today and reach 10 billion people by 2050, the problems we face will become even more acute. Let that sink in; it took roughly 5,000 years for humans to reach 3 billion people and in my lifetime, that number will be more than tripled!

But despite this startling fact, in many ways, we are becoming desensitized to our impact on the environment in ways similar to our desensitization of violence through repeated exposure and normalization in video games¹⁶ or social media.¹⁷ J.B. MacKinnon explains in his book *The Once and Future World*¹⁸ the processes by which we accept whatever environmental conditions we are born into as normal while our parents see the same as a sign of sad decay. In my home state of Michigan, we now accept as “normal” that we cannot eat many fish¹⁹ caught in our rivers, streams, and areas of the Great Lakes due to high amounts of PCBs, dioxins, or mercury that accumulate in their fat and flesh.

Consider another example of a conversation I had two years ago with a research scientist in the pharmaceutical industry. He casually mentioned that there are measurable levels of ibuprofen in the Mediterranean Sea. I could not hide my shock at either what he said or the offhandedness with which he said it. He went on to explain that ibuprofen is a relatively benign compound. What really worries scientists like him are drugs like birth control pills and anti-depressants. When we take a drug, large quantities of the active chemicals pass through our body and enter the sewage treatment system, which is unable to remove them. Then they enter the aquatic ecosystem where they are changing the flora, the fauna and our source of drinking water and food. Numerous studies find weird birth defects near waste discharge pipes. In 2016, researchers in Puget Sound²⁰ detected nearly 80 medications in salmon, including Prozac, Valium, Zoloft, OxyContin, Advil, Benadryl, Lipitor, even cocaine. Welcome to the Anthropocene.

These kinds of stories are astonishing – as was a 2010 traffic jam in China that lasted eleven days²¹ (consumers and manufacturers were unworried: the auto sector continues to see China as the dominant market of the future) – but only for a little while. We grow to accept them as we seem to accept the absurd litany of destruction that is the Anthropocene. We have all heard the list before, and it tends to numb us into a debilitating stupor. The result is, all too often, indifference bred by ignorance or denial and resentment bred by defensiveness or guilt.

We don’t need to be told about the problem again. We need to know how we can understand it, how we can explain it to others, how we can come to a collective acceptance of why it happened and how we can fashion a response.

So, while the concept of the Anthropocene moves through the process of formal recognition by the International Commission on Stratigraphy, the real work will be coming to collective terms with how our society will change in the face of that reality. Just as important as this geological shift is the resultant cultural shift around the belief structures upon which society is based. The Anthropocene Era represents an emergent awareness of a fundamental change in the intellectual, cultural and psychological conceptions of who we are as humans, what is the world around us, and how the two are intertwined.

Professor of environmental studies Neil Evernden captured the scale of this challenge in his 1993 book *The Natural Alien*²² when he wrote, “The [environmental] crisis is not simply something we can examine and resolve. We *are* the environmental crisis. The crisis is a visible manifestation of our very being, like territory revealing the self at its center. The environmental crisis is inherent in everything we believe and do; it is inherent in the context of our lives.” In 2014, geographer Rory Rowan²³ continued this thinking when he wrote that, “The Anthropocene is not a problem for which there can be a solution. Rather, it names an emergent set of geo-social conditions that already fundamentally structure the horizon of human existence. It is thus not a new factor that can be accommodated within existing conceptual frameworks, including those within which policy is developed, but signals a profound shift in the human relation to the planet that questions the very foundations of these frameworks themselves.”

The Anthropocene will change our culture and our values one way or another. There is no avoiding it. What is not yet clear is whether that change will be proactive or imposed, thoughtfully planned or hastily reactive, enlightened enough to recognize the full scope of the issues or remain entrenched in the discord that marks our present debate over climate change. This is where religion and philosophy can help.

How religion and philosophy may solve a problem like the “commons”

Life in the Anthropocene is the ultimate “commons problem”²⁴ where our survival depends upon our collective actions; the morality of individual actions takes on new meaning. The fossil fuels burned for use in New York, Shanghai, or Moscow have import for the poor people in low-lying areas of Bangladesh and the coral reef ecosystems of Australia. The meat eaten on single-use plastic in Ann Arbor impacts the global environment we all share. We are all members of the same species that is threatened by the challenges of the Anthropocene. We are in this together.

But how do we bring such thinking into our deepest values of purpose and meaning?

Can you imagine a theology that would suggest that we will be judged together as a collective and that heaven awaits us if all life that we touch has been improved by our presence, including both human and non-human; that the meaning of life is a collective effort, not an individual competition?

I offer this, not as a theological proposition but as a thought experiment, one that is not without precedent. There is a Hindu notion that the totality of everyone's subtle bodies can be understood as one great, collective soul; Ralph Waldo Emerson theorized about the "over-soul,"²⁵ the collective indivisible soul of which all individual souls or identities are included.

Do you think we are ready for such a new set of values? This seems hard to imagine when the values that seem to dominate the Western and developed world is that collective responsibility has become the antithesis of freedom; where 91% of all income growth²⁶ between 2009 and 2012 was enjoyed by the wealthiest 1% of Americans and they still pushed for more tax relief²⁷ in the present administration; where those with means live inside gated communities or behind ever greater sea walls; and where the "prosperity gospel"²⁸ imbues such actions with a divine blessing, teaching that individual wealth is a God-given virtue.

To get out of this, we have to connect concern for the environment with our deepest sense of what we love and what we hold as sacred.

Moving beyond the business case, we might ask, as author Duane Elgin²⁹ does, "When will humanity express its moral outrage that it is wrong to devastate an entire planet for countless generations to come, just to satisfy the consumer desires of a fraction of humanity for a single lifetime?" Indeed, the world's wealthiest 20% consume 86% of all the world's goods and services³⁰ while the poorest 20% consume just 1.3%. In fact, the three richest people in the world have assets that exceed the combined gross domestic product of the 48 least developed countries! And not just a global issue, income inequality in the U.S. is the highest it's been since 1928³¹ and is more unequal than most of its developed-world peers. By asking about the fairness and justice of such skewed distributions, we can begin to regain the language that it is simply the right thing to do to protect the global climate. The language of economics and commerce may be expedient, but it is incomplete; by using it, something is lost. Changing our actions to save money will only get us so far. Changing them because it connects to our deepest values of what is just, wise and true can take us much further. This is where religion and philosophy come in. While some see them as the obstacle, I see them as the solution.

For the 84 percent of the world population (and 77 percent of US population) that, according to the Pew Research Center,³² identifies with a particular faith, religion may be the force against the materialistic and individualistic tide. Even for those who no longer practice that religion, they may still be taught at a young age about environmental right and wrong and connect it to their personal philosophy. And for those who still practice, they will connect environmental

values to their religious values and will act upon them in ways far more powerful than an economic or regulatory pressure could motivate. As the adage goes, "a man [sic] will do so much for a buck, more for another man, but he will die for a cause."

In the end, if the collective responsibility we need in the Anthropocene is connected to the teachings of the Bible, Torah, Quran, Bhagavad-gītā, Tripitaka and oral traditions of indigenous peoples, or the philosophies of Aurelius, Locke, Voltaire, Madison, Wordsworth, Thoreau, and Russell, then the world can change on its axis. It has happened before and with great upheaval, and it can happen again. But it will involve a culture shift as grand and sweeping as the Enlightenment, Reformation or Scientific Revolution.

We need a Re-Enlightenment

In the Middle Ages, people in the Western world viewed nature as unknowable, subsuming the human endeavor and animated by mystical forces that were best explained by religious dogma—mostly of the Catholic Church. Nature was seen as evil and feared for its mystery and its danger.

But between the 16th and 18th centuries that worldview changed. From 1517 to 1648, the Protestant Reformation dismantled the Catholic Church's control of knowledge; from 1550 to 1700, the Scientific Revolution taught that nature could be demystified and cataloged through rational scientific inquiry; and from 1685 to 1815, the Enlightenment brought about the "Age of Reason" and exalted the human ability to understand and control the world around us. Captured by the phrase *Sapere aude*, "dare to know," this was a great step forward for humankind, allowing us to gain more control of our lives and accomplish great things through the development of a global economy that improved our standard of living and increased our lifespans. We did this, in part, by waging war on nature and striving to conquer it. "[Nature will be] bound into service," Francis Bacon wrote, "hounded in her wanderings and put on the rack and tortured for her secrets."

Today, the Age of the Anthropocene signals that the worldviews of the Enlightenment are no longer adequate to understand the natural world and our impact upon it. This awareness is not a rejection of the scientific method, but a rejection of a purely technocratic approach and the excessive belief in the reductive power of scientific knowledge to pursue an ongoing conquest of nature. At its most extreme, it is a rejection of "scientism,"³³ the belief in the physical sciences to the exclusion of other forms of knowledge. With its preference for quantitative over qualitative measures, focus on parts over the whole and pursuit of outcomes like human utility, technical efficiency and political expedience as unquestioned goods, we are now learning to recognize that there are limits to a purely scientific understanding of how nature works and

what we are doing to it. Though the development of new technologies to reduce our environmental impact are a good thing, they are only reducing the velocity at which we are approaching a climate crisis; they are not changing course. As a metaphor,³⁴ consider that we have ended the war in Iraq, but that is fundamentally different than creating the peace. Stopping the war on nature that the Enlightenment ushered in will not create the peace.

To do that, we need new ways of viewing our Anthropocene problems and solutions. Or, more to the point, we need to apply other ways of knowing ourselves, the environment and the relation between the two. Science is one important tool, but is not the only one. There are questions that quantitative science alone cannot answer, but philosophy, theology, the humanities and the social sciences, as well as tacit, vernacular, and pragmatic knowledge can help. What is life; what is beauty; what is love; why does music or art touch us so deeply; what is right and just; how much is enough and sufficient³⁵ to make us happy and fulfilled? These questions reside in the domain of what makes life worth living, and all are difficult terrain for quantitative, logical science.

For example, science and economic thinking may lead us to see the value of a forest in terms of its market value as lumber or a carbon sink. But that means that it will only be protected until a higher economic or material value is found. Such reasoning, though logical, ignores the many values of the ecosystem that is a forest, which includes the complex array of life forms within it and their intricate interconnections and dependencies. It also ignores any deeper meaning and purpose that may be both inherent or derived. So, the simple act of cutting down a forest and replanting it with acres of corn, wheat, barley or even more trees is not equivalent; it destroys the ecosystem and, as essayist Wendell Berry³⁶ has repeatedly reminds us, a piece of ourselves and our culture.

The problem is that we often don't know the damage that we are doing until well after it is done and the environmental and human value is lost. There is a whole litany of chemicals that were once thought to be beneficial, only to be found after their application to be dangerous to humans, animals or the environment: chlorofluorocarbons (CFCs), polychlorinated biphenyl (PCB), and dichlorodiphenyltrichloroethane (DDT) just to name a few. Countless dams and developments have decimated fragile ecosystems that were later deemed critical for a stable ecosystem (consider Houston's recognition³⁷ after Hurricane Harvey that it needs wetlands and floodplains to absorb the surge of tropical storms). Many species were driven to extinction before we even knew what we were doing. In a repeated pattern, we are blindly stumbling into the Anthropocene. "We have become, by the power of a glorious evolutionary accident called intelligence, the stewards of life's continuity on earth," paleontologist Stephen Jay Gould³⁸ wrote. "We did not ask for this role, but we cannot abjure it. We may not be suited to it, but here we are."

To adopt such a bold, new and unintended role as stewards of life's continuity on earth, we are embarking on what University of Alberta professor Dev Jennings and I have described as a "Re-Enlightenment."³⁹ Recognizing that the term Enlightenment carries some cultural baggage (not the least of which is whether the period accelerated colonialism⁴⁰ and exploitation), the comparison is useful in capturing the scale and scope of the culture shift before us.

In the Enlightenment, we disconnected ourselves from "nature," viewing it as something separate from ourselves. In the Re-Enlightenment, we will reconnect those two worlds. Instead of viewing nature as simply a resource or waste sink for our own benefit, we will find ways to see the value it possesses beyond human utility and efficiency. We will see value in all life and appreciate inter-dependencies that cannot be detected in a laboratory or calculated in a market exchange. The fact that we can't measure or price this value does not mean that it doesn't exist. It simply needs to be examined and expressed in different ways. Just as the Romantics of the late 18th and early 19th centuries countered scientific rationalism with knowledge that was expressed most profoundly in art, literature and music, we will reengage with all the ways of knowing the world and appreciate the entirety of nature with humans as an integral piece of the whole.

Only when we change the same religious and philosophical beliefs that Aldo Leopold felt were missing in 1949 will we create a sustainable future. Though many futures are possible and we will not know how much we have changed for centuries to come, that is the point. This is a marathon, not a sprint. It will transpire over the course of our lives as well as those of our children and grandchildren. Without facing up to this level of depth and this length of time, we will overlook the scale of the challenge and many will give up far too soon. Failure to do this will doom us to repeating and exacerbating the problems that we will have already set in motion.

Many rightly express alarm that we are not moving fast enough and are therefore doomed. Some believe that we have already waited too long and only a dark future lies ahead. Ethicist Clive Hamilton⁴¹ warns that, "those who argue for the 'good Anthropocene' are unscientific and live in a fantasy world of their own construction. ... I cannot see how, in a world warmed by four degrees, anything can be described as good." I look at books on my shelves and see dismal titles that send a similar signal: *Learning to Die in the Anthropocene*⁴² and *We're Doomed, Now What?*⁴³

But even if you are among the camp that believes it's too late to prevent many dire changes to society and the natural world, we must still try. With each passing day, the signal events of the Anthropocene are becoming increasingly hard to ignore while the concept and its meaning for our existence are becoming easier to understand. At some point the signals and the concepts will converge and the world will change. In fact, we can see signs that this is happening already.

Is the Re-Enlightenment taking place?

If a Re-Enlightenment sounds daunting, perhaps it's comforting to see murmurings that cultural change is already afoot.

Let's compare two influential documents. The first was written in 1967 by historian Lynn White in *Science* magazine and was called "The historical roots of our ecological crisis."⁴⁴ In it, he wrote that our ecological problems are caused by Judeo-Christian beliefs derived from the book of Genesis and its mandate that we should subdue nature. This leads us to think of ourselves as "superior to nature, contemptuous of it, willing to use it for our slightest whim," and he doubted that changes in those attitudes could occur unless, first, "orthodox Christian arrogance towards nature" were somehow dispelled and, second, we move beyond the idea that science and technology alone can solve our ecological crisis. The article caused quite a stir as a scandalous and provocative condemnation of religion.

Fast forward to 2015 when Pope Francis published his encyclical letter *Laudato Si*,⁴⁵ or "On Care for Our Common Home," which laid out what amounts to a rebuttal to White and offers some important foundations for a Re-Enlightenment. I appreciate that the pope does not speak for all people, much less all Christians or even all Catholics. But what he did in this letter is important for several reasons. To begin, he argued that we have been misinterpreting the Bible for millennia. In a section whose title nods at White's critique - "The human roots of the ecological crisis" - he wrote that the idea that the book of Genesis grants us "dominion over the earth" "is not a correct interpretation of the Bible as understood by the Church" and that its persistence "has encouraged the unbridled exploitation of nature by painting [man] as domineering and destructive by nature." As a corrective, he offered a new story for interpreting the Genesis mandate, one in which human beings are called to "till and keep" the garden that is for our temporary use, where tilling refers to cultivating, plowing, or working, and keeping means caring, protecting, overseeing, and preserving for others. The Catholic catechism provocatively views environmental degradation as theft from future generations.

From there, he acknowledged that we have a collective problem and responsibility to protect our "common home," and that we need "a new way of thinking about human beings, life, society and our relationship with nature" to replace our modern cultural ailments of unrestrained consumerism, faith in technology, and pursuit of profits. He even offered practical advice to increase our education on the environment, become engaged in the political and civic domains, and move away from our materialistic "throw-away culture" to one that is more interconnected with the natural world, each other and with future generations. Overall, the Pope offered a bold appeal to reevaluate our worldviews, values and spiritual beliefs and usher in Re-Enlightenment in the face of the Anthropocene.

The message is also important for its source. This was not the kind of outside provocation that White offered. Instead it came from within the religious community. The pope, along with leaders⁴⁶ from the Protestant, Jewish, Muslim, Hindu and Buddhist traditions who offered similar messages, reach the world's religious in ways that scientists, environmentalists and politicians cannot. When people hear the message from the church, mosque, synagogue or temple to address climate change and protect the environment, it connects to their deepest sense of who they are and why they are alive. It connects, as social psychologist Jonathan Haidt explains in *The Righteous Mind*,⁴⁷ with their intuitive sense of morality, the values they share with the groups to which they identify, the sense of altruistic care they offer to what they love and the history that made all of this so.

In a similar way, philosophers⁴⁸ and historians⁴⁹ are asking questions about how the Anthropocene epoch compels changes in previously taken for granted ideas about ethics, morals and values.

Scholars like Bruno Latour,⁵⁰ Mike Hulme,⁵¹ Dipesh Chakrabarty⁵² and others have explored how this new epoch breaks down the age-old distinction between nature and society, between natural history and human history, and gives rise to new approaches to issues of justice: “justice between generations, between small island-nations and the polluting countries (both past and prospective), between developed, industrialized nations (historically responsible for most emissions) and the newly industrialized ones.”⁵³ With such new approaches comes the opportunity to recalibrate Enlightenment ideas such as “freedom, choice, morality, citizenship, difference and rights.”⁵⁴

These stirrings in the worlds of religion and philosophy signal that Re-Enlightenment has already begun, though it may be hard to see. We won't know if it will succeed for decades or centuries, just as no one knew how long the Scientific Revolution or the Enlightenment would take, nor what it would be like when it was done, nor even that they were in it at the time – many of the terms did not emerge until centuries later. Neither you nor I will see how Re-Enlightenment will turn out, but we can see clues if we look carefully and in the right places. In the words of William Gibson, “The future is already here—it's just not very evenly distributed.” And that leads to the most interesting question before us: What might this future look like?

A brief glimpse into the Re-Enlightenment

Much of the writing on the future in a climate-changed world tends to be dystopian (picture the movie *The Day After Tomorrow*).⁵⁵ Writer Roy Scranton⁵⁶ warns of a collapse in culture that parallels past genocides, asking whether “we will be able to transition to a new way of life in the world we've made,” one where we can no longer take many things for granted, such as: a

global marketplace capable of swiftly satisfying a plethora of human desires; easy travel over vast distances; air-conditioned environments; wilderness preserved for human appreciation; better lives for our children; safety from natural disasters; and abundant clean water. In his book *The Uninhabitable Earth*,⁵⁷ David Wallace-Wells lays out a similarly dystopian future but also notes that there is great uncertainty in predicting our future because it is unclear what humans will do to change that future.

With that in mind, can we envision some way in which we adapt to avoid the worst-case scenarios such authors foretell? Though our impact in the Anthropocene has set certain outcomes into motion, can our culture and values begin to accept what is happening and our responsibility both for its cause and for its solution? If so, what kind of world might we imagine?

To begin, we will have learned how to be a net positive influence on the environment, moving many companies⁵⁸ today, such as Marks & Spencer,⁵⁹ Toyota⁶⁰ and even Shell⁶¹ are pushing in that direction (though many use carbon offsets⁶² which some find to be suspect). Going further, we will have adjusted our diet to eat less meat, and many will eat none at all. Can't picture it? In 2019, fake-meat producer Beyond Meat⁶³ had a very successful initial public offering (IPO) and is now selling product through fast food outlets like Burger King. Consulting firm A.T. Kearney⁶⁴ predicts that by 2040 as much as 60% of the meat we eat will be either grown in vats or replaced by plant-based products that look and taste like meat. In the future, we will have seen the end of private ownership of automobiles. This one is painful for me as I love cars. But when I say that to my students, they look at me like I have three heads. They have a weak appetite for car ownership and are ready to embrace the driverless mobility future (though recent studies⁶⁵ suggest that the driverless future may be further out than originally thought). These are just a taste of the kinds of new behaviors and new technologies that are in our coming future.

But harkening back to Aldo Leopold, what will be the "internal change in intellectual emphasis, loyalties, affections, and convictions" that will make this future possible? That's where this gets really interesting.

We will have discovered that the virtues of frugality, thrift and modesty will come back into vogue, leading us to measure our self-worth by our character and not by the material goods that we own and consume; the motivations of greed, envy and lust will have been displaced by a genuine sense of sufficiency and benevolence to know when we have enough for our needs and happiness and stop comparing ourselves to the material wealth of those around us; we will have moved beyond an arrogant sense of self-entitlement and developed a deeper sense of humility for the limits of our understanding of the natural world around us; we will have adopted a spirit of generosity and love that leads us to care for the natural world and see the

deeper moral implications in individual acts that impact it and the rest of society; we will have developed the wisdom to see the broader connections and inter-dependencies of the social and natural worlds around us. In short, we will have found that we have embraced the values that religion and philosophy have been teaching for millennia.

What a world this would be, one worth pursuing as a better place to live, thrive and flourish. And a positive vision of a future to be embraced is much more powerful and motivating than a dystopian vision of a future to be avoided.

The pursuit of this kind of future society and the process of Re-Enlightenment that will take us there will have been guided by a belief that it is the right and just thing to do, and begun with a recognition that, while we might hope for it to be accomplished quickly and in our lifetimes, the reality is that it will not. But that makes the urgency for action all the more real. In the words of John F. Kennedy, “The great French Marshall Lyautey once asked his gardener to plant a tree. The gardener said ‘why plant it? It won’t flower for 100 years.’ ‘In that case,’ the Marshall replied, ‘plant it this afternoon.’”

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