DON'T EVEN THINK ABOUT IT

WHY OUR BRAINS ARE WIRED TO IGNORE CLIMATE CHANGE

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To Annie, Ned, and Elsa

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Questions

In 1942 the Polish resistance fighter Jan Karski gave eye witness testimony to the Supreme Court judge Felix Frankfurter of the clearing of the Warsaw Ghetto and the systematic murder of Polish Jews in the Belzec concentration camp. Listening to him, Frankfurter, himself a Jew, and one of the outstanding legal minds of his generation, replied, "I must be frank. I am unable to believe him." He added: "I did not say this young man is lying. I said I am unable to believe him. There is a difference."

WHAT EXPLAINS OUR ABILITY TO separate what we know from what we believe, to put aside the things that seem too painful to accept? How is it possible, when presented with overwhelming evidence, even the evidence of our own eyes, that we can deliberately ignore something—while being entirely aware that this is what we are doing?

These questions have fascinated me for all the years I have been working on climate change*. They are what drew me to write this book and to spend years speaking with the world's leading experts in psychology, economics, the perception of risk, linguistics, cultural anthropology, and evolutionary psychology, not to mention hundreds of non-experts—ordinary people I have encountered on the way.

At each step in this journey, as I tried to understand how we make

* Yes, climate is always changing, but here I am following the international legal definition as being "attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods."

sense of this issue, I uncovered other intriguing anomalies and paradoxes demanding explanation:

- Why do the victims of flooding, drought, and severe storms become *less* willing to talk about climate change or even accept that it is real?
- Why are people who say that climate change is too uncertain to believe more easily convinced of the imminent dangers of terrorist attacks, asteroid strikes, or an alien invasion?
- Why have scientists, normally the most trusted professionals in our society, become distrusted, hated, and the targets for violent abuse?
- Why is America's most prestigious science museum telling more than a million people a year that climate change is a natural cycle and that we can grow new organs to adapt to it?
- Why are science fiction fans, of all people, so unwilling to imagine what the future might really be like?
- Why does having children make people less concerned about climate change?
- How did a rational policy negotiation become a debating slam to be won by the wittiest and most aggressive player?
- Why can stories based on myths and lies become so compelling that a president prefers to take his climate science advice from a bestselling thriller writer rather than the National Academy of Sciences?
- And why *is* an oil company so much more worried about the threats posed by its slippery floors than the threats posed by its products?

Through asking these questions I have come to see climate change in an entirely new light: not as a media battle of science versus vested interests or truth versus fiction, but as the ultimate challenge to our ability to make sense of the world around us. More than any other issue it exposes the deepest workings of our minds, and shows our extraordinary and innate talent for seeing only what we want to see and disregarding what we would prefer not to know.

I work for a small educational charity, advising other nonprofits, governments, and businesses on how they can better talk about a subject

that most people don't really want to talk about at all. I spend most of my working life with people like myself—concerned, well informed, liberal minded environmentalists—so it was a pleasant surprise, while writing this book, to discover I often learned the most from the people who are entirely different from me.

Talking to Texan Tea Partiers led me to ask why we climate communicators have so singularly failed to connect with their concerns. Speaking to evangelical leaders made me question the boundaries between belief and knowledge. I have even enjoyed meeting the people whose life work, to which they apply great dedication and creativity, is to undermine my own life work.

So I do not seek to attack the people who do not believe in climate change. I am interested in how they reach those conclusions, and I am just as interested in how believers reach and hold theirs. I am convinced that the real answers to my questions do not lie in the things that drive us apart so much as in the things we all share: our common psychology, our perception of risk, and our deepest instincts to defend our family and tribe.

These ancient skills are not serving us well. In this book I argue that climate change contains none of the clear signals that we require to mobilize our inbuilt sense of threat and that it is remarkably and dangerously open to misinterpretation.

I find that everyone, experts and non-experts alike, converts climate change into stories that embody their own values, assumptions, and prejudices. I describe how these stories can come to take on a life of their own, following their own rules, evolving and gaining authority as they pass between people.

I suggest that the most pervasive narrative of all is the one that is not voiced: the collective social norm of silence. This response to climate change is all too similar to that other great taboo, death, and I suggest that they may have far more in common than we want to admit.

I argue that accepting climate change requires far more than reading the right books, watching the right documentaries, or ticking off a checklist of well-meaning behaviors: It requires conviction, and this is difficult to form and even harder to maintain. It took me many years to reach my own personal conviction that climate change is real and a deadly serious threat to everything I hold dear. This is not easy knowledge to hold, and in my darker moments I feel a deep sense of dread. I too have learned to

keep that worry on one side: knowing that the threat is real, yet actively choosing not to feel it.

So I have come to realize that I cannot answer my questions by looking too long at the thing that causes this anxiety. There are no graphs, data sets, or complex statistics in this book, and I leave all discussion of possible climate impacts until a final postscript at the very end. This is, I am certain, the right way around. In the end, all of the computer models, scientific predictions, and economic scenarios are constructed around the most important and uncertain variable of all: whether our collective choice will be to accept or to deny what the science is telling us. And this, I hope you will find, is an endlessly disturbing, engrossing, and intriguing question.

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We'll Deal with That Lofty Stuff Some Other Day

Why Disaster Victims Do Not Want to Talk About Climate Change

WENDY ESCOBAR REMEMBERS FEELING SLIGHTLY nervous as she set off with her children to pick up groceries and saw the distant spiral of smoke on the horizon. But she says she never, ever, could have anticipated the speed or intensity of the disaster that followed. By the time she returned an hour later, the police had erected barricades across Texas State Highway 21. She had nothing but the clothes on her back; her daughter, she recalls, was still in her slippers. Two weeks later, when the road was finally reopened, the only family possession she could find in the ashes of the house was her great-grandfather's Purple Heart medal. It was melted almost beyond recognition.

The Bastrop wildfire of October 2011 was exceptional by any standards. Supercharged by thirty-mile-per-hour winds during a period with the lowest annual rainfall ever recorded, it killed two people, burned fifty-four square miles of forest, and could be seen from outer space. It destroyed 1,600 houses; ten times more than any previous wildfire in Texan history.

What was curious, though, was that, when I visited Bastrop a year later not one person, in a string of formal interviews, could recall for me a single conversation in which they had discussed climate change as a potential cause of the drought or the fire.

when he feels such a terrible sadness to see the loss of the future for young people who look forward to fulfilling their lives. "Instead of just running away from it, I try to take a deep breath and close my eyes and let it in."

The campaigner Bill McKibben agrees that climate change does feels uncannily like our own death. When I invite him to explore the theme, he adds an important caveat: This is, he tells me, quite unlike a natural death. "We are grieving for what we are doing and our own inability to deal with it. We all know we are going to die, and we used to be able to cope with the thought that our life was contributing to something larger that would survive us. Now even that has been taken away from us." So even the "immortality project" that compensates for our own deaths has been taken away from us.

Increasingly we are told that whatever we do, we are *committed* to some uncertain future catastrophe that threatens to render the past meaningless. All we can do is wait for it to come. It feels both real and unreal, something we are told will happen, that we might rationalize but we can't quite believe.

This strange sense of impermanence was the central theme in McKibben's seminal book on climate change, *The End of Nature*: "Our comforting sense of the permanence of our natural world, our confidence that it will change gradually and imperceptibly if at all, is, then, the result of a subtly warped perspective . . . We are at the end of nature."

Maybe it is appropriate to leave the last word to the founder of psychotherapy, Sigmund Freud, whose work so often revolved around the centrality of death in our psyche. In his short essay "On Transience," Freud explores the way that our anticipation of future death diminishes our view of the present. In 1915 Freud was walking with a friend in the summer woods, a few months after one hundred thousand men had been massacred in the Battle of Ypres:

> The poet admired the beauty of the nature around us, but it did not delight him. He was disturbed by the idea that all this beauty was bound to fade, that it would vanish through the winter, like all human beauty and everything beautiful and noble. All the things he would otherwise have loved and admired seemed to him to be devalued by the fate of transience for which they were destined.

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From the Head to the Heart

The Phony Division Between Science and Religion

TIM NICHOLSON'S MODEST AND SOFT-SPOKEN style provides a disconcerting cover for an altogether more flamboyant and risk-taking personality. In 1995 Nicholson and ex-army wife Major Jo became local celebrities after they drove from their hometown of Oxford, UK, to Oxford, New Zealand, in a 1954 Morris Oxford—a bulbous British car that looks like a boiled sweet and is about as powerful as a lawnmower.

In 2009, Nicholson was in the news again—this time around the world—when he sued his former employer, a large housing organization, on the grounds that it had fired him from his position because of his deeply held conviction in climate change. Nicholson built his court case on European legislation that protected workers against discrimination on the grounds of "any religious or philosophical belief." He had, quite deliberately, begun another dangerous journey: this time right through the minefield that lies between those who regard anthropogenic climate change as an irrefutable scientific fact and those who see it as an ideologically driven belief.

Skeptics saw the case as confirmation of their long-held argument that climate change was a new and false religion. Environmental campaigners applauded his bravery, and one newspaper, unhelpfully reinforcing the religious theme, declared him to be a green martyr.

Scientists were a lot less convinced. Science writer Wendy Grossman said he should be "appalled" by the case he had brought. She wrote, "Science is not a belief system but the best process we have for establishing the truth. If the issue of climate change is one of competing religious beliefs, then those claiming impending doom can be safely ignored."

Nicholson would never argue that climate change itself was similar to a religious belief. What he was arguing, and what ultimately won him the case, was that this scientific evidence could become the basis of a life-changing moral philosophy and that this was *similar* to many religions—based on principles of caring for others, responsibility, and thoughtfulness. As Nicholson told me, "In the end, climate change is not some facts and figures; it comes down to what's in your head. And that's a belief."

Most climate scientists hate to talk about *belief*, which they regard as diametrically opposed to reality-based facts. Adam Frank, a professor of astrophysics at the University of Rochester, says, "I always feel a bit weird when someone asks me if I 'believe' in climate change, as if it's the Easter Bunny or Santa Claus." Australia's chief scientist Ian Chubb complains, "I am asked every day 'do you believe?' and every now and then I make a mistake and say yes or no. But it's *not* a belief. It's an understanding and interpretation of the evidence."

As with so many of the arguments that surround climate change, this is not really about the word *belief*, but about the religious frames that it triggers and the false polarity it suggests between the rational brain and the emotional brain. In the struggles with deniers, the word *belief* has become poisoned, and many scientists see it as the antithesis of peer-reviewed science. This is why I prefer to use the word *conviction*—to indicate a condition of strongly held opinion, reached through a personal evaluation of the evidence.

Many deniers harbor a deep hatred for all religion, seeking to smear climate change by association. To one business columnist, climate advocates are like "crazed American televangelists who predict that the Antichrist will come next Tuesday or that God will purge the land of homosexuals."

The metaphor is especially strong in Australia. Ian Plimer, a retired petroleum geologist who has built a lucrative new career as a leading Australian denier, based an entire book, *Heaven and Earth*, around this theme, arguing that climate change "creates a fear of damnation, demands appeasement by selling indulgences to the faithful and

demonizes dissenters." Even Cardinal Pell, Australia's most senior Catholic, describes emissions reductions as "religious sacrifices" and compares the sale of carbon credits with "the pre-Reformation practice of selling indulgences."

However, climate skepticism is, in a manner of speaking, a broad church, and it also includes those, especially among the American Christian right, who see climate change as a heresy that "speaks to the inherent spiritual yearnings of human souls and seduces children in our classrooms through spiritual deception." These are the words of Calvin Beisner, the founder of the Cornwall Alliance, which markets a set of twelve DVDs that will "provide the armor" to rise up and slay environmentalism, or as he calls it, the Green Dragon.

In 2006 Beisner and twenty-two evangelical leaders launched "An Evangelical Declaration on Global Warming," arguing that it is a natural cycle. One of the most active promoters of the declaration, Bryan Fischer of the American Family Association, argues that we have a God-given right, indeed requirement, to burn fossil fuels because "the parable of the talents tells us that the wicked and lazy steward was the one who buried his talent in the ground and did not do anything to multiply it."

However, conservative evangelicals, like the political right as a whole, are split between those who think that climate change (if happening at all) is due to natural cycles and those who accept that it is due to human behavior and that taking action to prevent it is the moral equivalent to protecting unborn life and preserving the family. So says the Evangelical Environmental Network in its rival manifesto, "Climate Change: An Evangelical Call for Action." The Network achieved widespread attention for an inspired television commercial about the environmental impacts of car travel that ends with the question "What would Jesus drive?" There are now similar initiatives among Jews, Muslims, Catholics, Buddhists, and Hindus that weave climate change into their own narratives and traditions.

In spite of this, what has been remarkable is how *little* involvement religions have had in the climate change issue. Previous social justice movements, from the anti-slavery campaigns through civil rights, anti-apartheid, anti-debt, and anti-poverty campaigns, arose through church networks.

People of faith have found it hard to incorporate this new issue into their existing worldview. Climate change is seen as an environmental issue that is poorly defined and contested in their theology. For

conservative Christians, it is tainted by its association with the liberal environmental movement and has become bundled among the checklist of issues that define their group loyalty.

Environmentalists are equally wary of religion and seem to form strategic alliances with just about anyone before they talk to religious groups. This is a major tactical error. All of the world's major religions are growing, Christianity and Islam fastest of all, and much of that growth is from the more fundamental strains of their faiths. Within the United States, only 5 percent of people are members of environmental organizations, but more than 70 percent of Americans still identify with a religious faith, and more than a quarter of Americans consider themselves to be born-again or evangelical Christians.

Even Christians who do care tend to keep their faith and climate change "in two separate boxes," says Erin Lothes Biviano, a professor of theology at the College of Saint Elizabeth in New Jersey who spent a year interviewing climate change campaigners in the faith communities. She tells me that they rejected the comparison between climate change and religion because "they have an experiential relationship with their faith that is special, and they would not say that climate change has that same personal luminous quality."

So, what association between religion and climate change *is* appropriate? In one sense, they are clearly incompatible. Religions are based in ancient texts and revealed knowledge. Climate change is grounded in constantly changing and carefully evaluated scientific data. Religions relate to the otherworldly, the spiritual, and the afterlife. Climate change is utterly worldly in its causes and solutions and offers nothing spiritual.

However, climate scientists with strong religious faith argue that this has always been a false divide. Katharine Hayhoe is the director of the Climate Science Center at Texas Tech University and is also an evangelical Christian who is married to a pastor—an unusual combination that has led *Time* magazine to list her as one of the World's 100 most influential people. Hayhoe says, "The facts are not enough. When we look at the planet, when we look at creation, whatever it's telling us is an expression of what God has defined it to be. So instead of studying science, I feel like I'm studying what God was thinking when he set up our planet."

Sir John Houghton, who founded and then chaired the Intergovernmental Panel on Climate Change for fourteen years, is also a preacher in the Methodist Church. In 2002 Houghton hosted a

conference between scientists and U.S. evangelical leaders at Oxford University (because he was told that "Americans love coming to Oxford"), which was the first attempt for a conservative audience to talk with one another about climate change using the language of faith. The conference was a resounding success and initiated a change of heart in participants that many later described as a conversion. The initiative provides further strong evidence that even the most unconvinced people can be persuaded by trusted peers who understand their values and can use their common language.

Like Hayhoe, he says that his religious belief and his scientific research are entirely compatible. God, Houghton tells me, creates the laws, and his role as a scientist is to discover them. He recognizes that scientists talk about the evidence base rather than the belief, but then, for Houghton, religion is also evidence-based. "Even if there are aspects that you do not understand, it all fits together in a way that you cannot escape from and there are laws of evidence to support it."

People of religious faith have understood all along that there is actually no clear dividing line between the rational and the emotional brains, but rather a conversation between the two. As the Ecumenical Patriarch of Constantinople Bartholomew said, "We know what needs to be done [about climate change] and we know how it must be done. Yet, despite the information at our disposal, unfortunately very little is done. It is a long journey from the head to the heart; and it is an even longer journey from the heart to the hands." This is another expression of the challenge of converting the rational-brain understanding of climate change into the emotional-brain commitment to action.

For the purposes of this book, though, what makes religious belief so relevant to climate change conviction is that both struggle against the same cognitive obstacles. As I have already discussed, climate change is extremely challenging because it requires people to accept that something is true solely because of the authority of the communicator, it manifests in events that are distant in time and place, and it challenges our normal experience and our assumptions about the world. Above all, climate change requires people to endure certain short-term losses in order to avoid uncertain long-term costs.

Religion faces every one of these obstacles, but to an even greater degree. It is even less certain, has none of the objective proof of science, is based on evidence that is remote from people's ordinary existence, and

requires people to accept rules governing their most intimate lives—their sexual activities, diet, and child rearing. It has, I grant you, the major advantage of offering personal reward in an afterlife, though this too is based on extreme uncertainty.

As the Reverend Sally Bingham, an Episcopalian preacher and renewables advocate, put it to me: "We believe that Mary was a virgin, that Jesus rose from the dead, that we might go to heaven. So why is it that two thousand years later, we still believe this story? And how can we believe that and not believe what the world's most famous climate scientists tell us?"

Religions also call on people to constrain their wordly desires. The tradition of abstinence and self-restraint works through all the world's great religions: Eastern and Western. To quote Muhammad: "What have I to do with worldly things? My connection with the world is like that of a traveler resting for a while underneath the shade of a tree and then moving on."

Religions embody long-term thinking, encouraging their members to accept responsibilities and invest in a legacy that extends far beyond their own lifetime on Earth. The tagline of the Coalition on the Environment and Jewish Life, for example, is "protecting creation, generation to generation."

Above all, religions have found ways to build strong belief in some extremely uncertain and unsubstantiated claims through the power of social proof and communicator trust. Few are less certain, or more successful, than Mormonism, which has becomes the fastest-growing religion in the United States.

Mitt Romney, former governor of Massachusetts, was the first Mormon—a ward bishop, no less—to run for the presidency. He was also the first candidate to openly repudiate climate science. Which raises a very interesting question: What are the key differences that can lead a highly intelligent and worldly man to say "I am uncertain how much of global warming is attributable to man" and yet accept as *certain* that a transcription of tablets found buried in a hillside contains the word of God. I am not seeking to mock Mormons, just asking a legitimate question: What is it that makes one irrelevant and fraudulent and the other the rock of a man's life?

Maybe the question, then, is not whether climate change is too much like a religion, but whether, in our determination to keep the two apart, we have ignored the most effective, tried, and tested models for overcoming disbelief and denial.

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Climate Conviction

What the Green Team Can Learn from the God Squad

THE IMAGES ON THE VIDEO screens start in familiar documentary style with some low bass tones, a plinking piano, a sun rising, and a slow-motion hand running through the sand. It feels strangely reminiscent of the opening to *2001: A Space Odyssey*—not, I imagine, a favorite film of the twenty-five thousand evangelical Christians who are now rising to their feet, clapping and cheering, as the bass riff picks up and the thirteen-piece rock band rises through the floor of the stage. "Do you hear that beat? Do your *hear* that *beat*? That's the beat of the FREEDOM!" "YAAAAAAY," we all go.

Lakewood Church, the largest church in the United States, offers a great package. Great venue. Great tunes. Great gift shop. Pastor Joel Osteen has a toothy bonhomie and offers folksy feel-good sermons. His feisty blonde wife, Victoria, has a rather more animal appeal as she struts the stage in her pencil skirt and stilettos, intoning breathily, "When you grow in love, you grow in *me*. Let it get deep. Deep in *you*. That love is growing—so PUSH into God more." Crikey.

Nobody there wants to talk about climate change. The Osteens have no desire for an interview despite repeated attempts to get one. When I approach people after the service, many turn away and refuse to talk at all. Others claim ignorance or indifference.

Bob and Michelle from Nashville, though, are trapped alongside me in the pew, palms outstretched to absorb the blessings raining down on them. What do they think? Michelle turns away, unwilling to even discuss it. Bob reckons it's all a natural cycle, but he's sure God is in control. Later on I complain that it's freezing in the air-conditioned basketball stadium that passes for a church. "Yup," he says chuckling, "not much global warming in here."

The question on my mind—a reasonable one really—is to ask what Lakewood might have that the world's greatest crisis does not. Every week Lakewood Church achieves a level of mass mobilization that climate change activists can only dream about. Consider it this way: In February 2013, sixty environmental organizations pulled out the stops to mobilize forty-five thousand people for the largest-ever climate change rally in Washington, D.C. That week, just as many people came to this one church. And just as many came the next. Six times more people will watch this service on television and on the Internet than watched *An Inconvenient Truth* in U.S. cinemas.

If climate change campaigners complain about the lack of foundation funding or media coverage, they should try running an evangelical church. Churches generate their own media, raise their own money, publish their own books, and sell themselves entirely through the quality of the experience they offer converts. They are, as it were, real-time experiments in what moves, excites, and persuades people.

Ara Norenzayan, a social psychologist at the University of British Columbia, is determined to identify the winning psychological qualities that have created the world's dominant religions. After all, he tells me, there are ten thousand religions in the world, so there must be strong reasons why two-thirds of people have come to follow just three of them: Christianity, Hinduism, and Islam. These are, he argues, "the descendants of just a few outlier religious movements that have won in the cultural marketplace through two thousand years of successful experimentation."

Norenzayan is something of an outlier himself, exploring areas that other psychologists consistently ignore. He was one of the researchers who created the acronym WEIRD (western, educated, industrialized, rich, democratic) and has concluded that these same inward-looking assumptions have led psychologists to seriously underestimate the relevance of religion. He observes that experimental psychologists look

around their small subculture and say, 'No one who is important to me is religious, so this must not be very important.'"

He strongly agrees when I suggest to him that the same criticism could be leveled at the climate change movement. "These people are ignoring the largest social movements in the world and the ones that have proven time and again to have the power to galvanize people into action," he says.

So what, I ask him, could the climate movement learn from his work on the psychology of religion? He thinks for a moment, and his answer is fascinating.

"From a WEIRD perspective," he says, "climate change appears to be hopeless because people will never be prepared to make a sacrifice because of the rational calculation. But this is not the case in religions, which contain sacred values that are so fundamental that they are entirely nonnegotiable. They cannot be bought or sold, and people will make any sacrifice to defend them."

Sacred values are not just about religion. Brain scans have found that the parts of the brain associated with sacred values are those associated with other moral choices. Sacred values are embedded throughout our culture—the defense of our children is a sacred value and we would not sell them at any price. Torture is considered to be wrong and is not subject to any temporal discounting—it will be just as wrong ten years from now as it is now. National parks are a sacred value to Americans—you could never sell Yellowstone.

For Norenzayan, a radical solution would require turning action on climate change into a non-negotiable sacred value. But could you mobilize sacred values without a religion? Absolutely he says—and in any case, a religion "is not like a thing; it's an assembly of features that become a group called religion. You could co-opt these successful qualities and use them in other contexts." His view echoes the work of the American sociologist Robert Bellah who argued that religion "is transmitted more by narrative, image, and enactment than through definitions and logical demonstration."

So, what are the features of the great religions and how might they be mobilized to create sacred values around climate change?

First—and I do not wish to be an apologist for the violence and coercion that often accompanied this process—they have all invested heavily in gaining new audiences through missionary outreach and

proselytizing. Much of the growth of Mormonism is due to the high status given to missionary service. Churches have constantly experimented with ways to engage new cultures. Consider, for example, how Catholic missionaries adopted different tactics for working in China. The Franciscans charged in, declaring, "Here is the new God." The Jesuits, under the instructions of their leader, Matteo Ricci, wore Chinese robes, adopted the Chinese language, and avoided all contact with Europeans.

As religions recruited new members, they developed institutions to maintain a community of shared belief through ritual and shared worship. For the pioneering sociologist Émile Durkheim, religion was not just a social creation; it was, he said, society made divine. The reward for belief comes from belonging to the community of belief—and the cost of disbelief is social rejection.

Lakewood Church, by any standards a roaring success in the cultural marketplace, is fueled by the irresistible enthusiasm of its mass gatherings. Its critics, of which there are many among traditional Christians, see it as being little more than a weekly rock concert. But it is more intelligent than that. Pastor Joel Osteen focuses on relevance—giving people something to take away. He preaches around simple themes that are directly relevant to people's lives. Above all, he is upbeat: talking about self-esteem, confidence, and, taking a line from Jesus, how you can "become what you believe." Go higher in life, he urges, rise above your obstacles, live in health, abundance, healing, and victory. And this is why Bob from Nashville loves him so much—"you always feel so much better afterward," he says.

Receiving God's blessing and feeling good need not exclude talk of environmental responsibility or climate change. Northland Church in Longwood, Florida, approaches the scale and showmanship of Lakewood while embracing the message of climate change and caring for God's creation. Under the leadership of its charismatic pastor, Joel Hunter, Northland has grown into one of the thirty largest churches in the country. It is unusual for its experimentation with new communications technologies. Hunter describes his new forty-two-million-dollar church as a "communications device with a sanctuary attached," which enables Sunday services to be beamed to a live congregation of more than fifteen thousand people in three churches and services held in people's homes.

Hunter is warm, considerate, and funny—with his silver hair and broad smile, he looks rather like Jack Palance. I can fully understand why President Obama is glad to have Hunter as a friend and spiritual adviser.

This does not make Hunter into a liberal by any stretch. In his book *A New Kind of Conservative*, he outlines the central authority of the Bible against gay marriage and calls for personal responsibility and smaller government. Hunter likes to describe himself as an independent, deciding on his position issue by issue.

This independence has led to some predictable fire from the Florida far right for his open partnership with Muslim preachers. But that is nothing compared with the attacks he receives for his belief in climate change. The hate mail has now calmed down, but while he is rarely accused of being a "tool of the devil" anymore, people still take him aside to say, "I think you are good man, and you mean well, but *they've got you.*"

Hunter was introduced to the subject by his fellow evangelist Richard Cizik—"my friends are always getting me into trouble," he says—who had attended the 2002 conference organized by Sir John Houghton in Oxford. Cizik describes his experience in Oxford as a conversion experience: "I had, as John Wesley would say, a warming of my heart, a change that only God could do, like Paul's conversion in which he fell off a donkey on the road to Damascus."

Hunter also describes his belief in climate change as a religious conversion. He quotes from the Gospel of John, where Jesus says, "You must be born again. The wind blows wherever it pleases. You hear its sound, but you cannot tell where it comes from or where it is going." You are being called to live your life by a different standard.

Always on the lookout for new narratives, I invite Hunter to explore the ways that his church identifies and nurtures belief in Christ and whether these might help us build wider acceptance of climate change. Three key concepts emerge that are directly relevant to climate change.

First, that belief is held socially and is shared through testimony and witnessing with your peers and community. Hunter describes this as "the huge one": "You have the fellowship of fellow believers. That is the encouragement that we need, to be around people who have the same interests, the same goals, the same values as ourselves."

The church then becomes a safe place to admit to personal problems and struggles with belief and doubt. "We have to make an environment—excuse the pun—where we fully acknowledge that everybody is going to have doubts and struggles, and everybody is going to need encouragement. We see if we can help with that and we walk through that together."

Second, that people can be brought to a commitment at a moment of

choice. In the Bible, people are offered choices: As God says to the people of Israel, "I have set before you life and prosperity, death and destruction, blessings and curses . . . Now choose life, so that you and your children may live." Evangelism seeks to generate a moment when people actively choose to commit themselves to their faith in a public context that sets a social norm for others. The outreach crusades of the great evangelist Billy Graham would culminate in an altar call in which new people were invited to step forward to receive a special blessing. It's a simple but very effective device to break the bystander effect. As Hunter says, "Even if you are a little tentative, you see all these people going forward and you think, 'I have nothing to fear. I will be with them. I'm not left to my own devices. I want to join the movement.'"

And, Hunter need not add, the altar call is also a point at which the church can identify potential new members and then welcome and support them. Evangelical outreach, such as the hugely successful "I Found It" advertising campaign in the 1970s, always directs people to make personal contact through their local church. Environmental outreach around climate change, on the other hand, invariably directs people to websites and places where they can find more information.

Third, Hunter argues that belief in climate change can be understood as a personal revelation. Moments of personal revelation are a universal human experience reported by around three-quarters of people, regardless of their culture or religion. In 1969, more than seven thousand people replied to a small advertisement placed in British newspapers inviting them to share their "experience of a presence or power which is different from your everyday self." They described their experience as joyous, sometime frightening, and always "ineffable" and "unknowable." Although these are often called religious experiences, only a quarter of the respondents use the word *God*.

Professor Brian Hoskins, the director of the Grantham Institute for Climate Change in London, is unusual in his recognition that scientific information requires this transformative moment. "Often what we do is provide the landscape in which Saint Paul can have his moment. I don't believe these come from nowhere; they come from all the information around and then it clicks for someone. We [as scientists] are creating the ether in which people can have that illumination."

Lynda Gratton, a chair of the World Economic Forum, reports that the most ambitious sustainability programs in the business world invariably

stem from the transformative inner experience of a single influential individual. Jochen Zeitz, the former chairman of Puma, says that his stay in a Benedictine monastery inspired him to develop a valuation of environmental impact in his bookkeeping. H. Lee Scott, the former CEO of Walmart, reportedly had a climate change "epiphany" on a field trip in New Hampshire to learn about the impacts of global warming on maple trees.

Eamon Ryan, the former environment minister in the Irish government, told me of how an ecology course at his Jesuit school, which started as "a chance to lark about and smoke behind trees," became his personal "epiphany on the interconnectedness of us and nature." His language is itself a reflection of the teaching of Ignatius Loyola, the founder of the Jesuit movement, who had found his own calling sitting by a river.

Bob Inglis, former Republican representative for South Carolina, asks how we can enable this kind of life-changing conversion. Drawing on the church experience, he formulates it this way to me: "You go to them with a credible messenger and you affirm their truth. And you help them to see that this fits within their story and you honor them by being there with them. Then you can get conversions."

Conversions? Affirm? Witness? Epiphany? These words never appear in the discussions of how we mobilize action on climate change. Acceptance of climate change is assumed to be transferred, as though through osmosis, by reading a book or watching a documentary. When it is acquired, it is assumed, like the data that it is based on, to be solid and unshakeable. Because there is no recognition of climate change conviction, there is no language of climate change doubt, no one is offering to give us encouragement or to help us to "walk though that together." There is no defense against backsliding and denial, and there is no mechanism for coping with grief.

And so, outside the circles of dedicated environmental activists, there is no community of belief. There is no social mechanism for sharing it, least of all witnessing it. People deal with their hopes and fears in isolation, constrained by the socially policed silence and given no encouragement other than a few energy-saving consumer choices. If Christianity were promoted like climate change, it would amount to no more than reading a Gideon's Bible in a motel chalet and trying to be nice to people. The critics are right in this regard—if climate change really were a religion, it would be a wretched one, offering guilt and blame and fear but with no recourse to salvation or forgiveness.

Guilt is a word that appears all the time around climate change. "Is it just me, or does everyone else feel guilty for being alive too?" wrote Jeremy Burgess in an opinion piece in *New Scientist*. What is missing, Burgess noted, is forgiveness, and failing this, "we can only look forward to punishment."

Sally Weintrobe, a psychotherapist, agrees. Without forgiveness, she writes, our feelings about climate change will "become stuck in a climate of hatred, bitter recrimination and relentlessness, easily feeling harshly judged and not moving towards accepting the reality of the loss."

Mechanisms for personal forgiveness are a critical component of the Abrahamic religions. In the Christian faith it is the power of God to forgive that leaves the door open for personal change. In Judaism the ritual of Al Chet, held on the eve of the Day of Atonement, Yom Kippur, enables the recital of sins against oneself, others, and God. Most relevant to climate change, the ritual explicitly regards inaction and silence as the moral equivalents of active sin.

The climate change narrative contains no language of forgiveness. It requires people to accept their entire guilt and responsibility with no option for a new beginning. Not surprisingly, what happens is that people either reject the entire moralistic package or generate their own self-forgiveness through ingenious moral licensing.

Fred Luskin, the director of the Stanford University Forgiveness Projects, is at the center of the booming area of forgiveness research. He tells me that the number of published studies has quadrupled in just ten years, though not one of them has been concerned with forgiveness and climate change. He agrees that this is a major weakness, especially, he suggests, as climate impacts increase and "there will be a frantic rush to punish, to assign blame, to limit freedoms, and to set up good guys versus bad guys."

This is already happening in international negotiations, where the unresolved responsibility for past emissions continues to prevent agreement on a shared approach to future action. According to Luskin, forgiveness is not about pardoning, or excusing; it is "a process of transforming the continuing and destructive feelings of guilt, blame, and anger into positive emotions such as empathy and reconstruction." The absence of a narrative of forgiveness cuts off many of the options for a constructive resolution.

I found talking with Hunter and other evangelicals invigorating. Putting

aside the immediate context of evangelical Christianity—and here I will openly admit that I respect but do not share their religious faith—they outline a vocabulary and methodology for overcoming our cognitive obstacles that is absent from discussions around climate change.

In this book I have shown that scientific data, although undoubtedly vital for alerting our rational brain to the existence of a threat, does not galvanize our emotional brain into action. Indeed, I have suggested, climate change contains enough inherent uncertainty and distance that we can quite deliberately keep what we know contained and detached from what we believe and what we do.

Learning from religions, I suggest that we could find a different approach to climate change that recognizes the importance of *conviction*: the point at which the rational crosses into the emotional, the head into the heart, and we can say, "I've heard enough, I've seen enough—now I am convinced."

Applied to climate change we could accept that this is a process of steadily growing awareness, though it may also progress through personal revelation or moments of informed choice and public commitment. Conviction need not remove questioning and doubt—and it is essential that climate science is never above challenge—and these uncertainties, anxieties, and fears need to be openly recognized within a supportive community of shared conviction.

Finally we could learn to find ways to address the feelings of blame and guilt that lead people to ignore or deny the issue, by enabling people to admit to their failings, to be forgiven, and to aim higher. By concentrating on universal and non-negotiable "sacred values," we could sidestep the arid cost-benefit calculations which encourage us to pass the costs onto future generations.

These ideas are not unique to religions, and can be found in every successful social and political movement in history. We already know how to overcome the cognitive challenges that make it possible for us to ignore climate change. The lessons are all there, if we choose to heed them.

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Why We Are Wired to Ignore Climate Change . . . And Why We Are Wired to Take Action

THROUGH OUR LONG EVOLUTION, WE have inherited fundamental and universal cognitive wiring that shapes the way that we see the world and interpret threats and that motivates us to act on them. Without doubt, climate change has qualities that play poorly to these innate tendencies. It is complex, unfamiliar, slow moving, invisible, and intergenerational. Of all the possible combinations of loss and gain, climate change contains the most challenging: requiring certain short-term loss in order to mitigate against an uncertain longer-term loss.

Climate change also challenges and reverses some deeply held assumptions. We are told that the way of life that we associate with our comfort and the protection of our families is now a menace; that gases we have believed to be benign are now poisonous; that our familiar environment is becoming dangerous and uncertain.

Our social intelligence is well attuned to keeping track of debts and favors, and ensuring equitable distribution of gains and losses. Climate change poses a major challenge here too, with all solutions requiring that rival social groups agree on a distribution of losses and thereafter the allocation of a greatly diminished shared atmospheric commons.

We are best prepared to anticipate threats from other humans. We are inordinately skilled at identifying social allies and enemies, identifying the social cues that define loyalty to our group and that identify the

members of rival out-groups. Climate change is immensely challenging in terms of these categorizations. It is not caused by an external enemy with obvious intention to cause harm. It therefore tends to be fitted around existing enemies and their perceived intentions: a rival superpower, big government, intellectual elites, liberal environmentalists, fossil fuel corporations, lobbyists, right-wing think tanks, or social failings such as overconsumption, overpopulation, or selfishness.

Worse still, and unique among major threats, we all contribute directly through our own emissions and are therefore personally responsible for the ever-increasing costs for ourselves, our in-group, and our children and descendants. This moral challenge, combined with a sense of the relative powerlessness of individual action, helps mobilize a well-ingrained set of defense mechanisms that enables us to ignore the problem—both through personal disavowal and through socially constructed silence.

There is a fundamental division, embedded in the physical structure of our brain, into the analytic and the experiential processing systems—what I have called the rational brain and the emotional brain. The two brains work together on complex tasks, but the engagement of the emotional brain is critical for galvanizing action, especially at a social level. The differences between our rational and our emotional processing systems express themselves in a constant tension between the overly rational presentation of climate science and its translation by campaigners into emotionally appealing narratives.

The cognitive systems require that complex issues be converted into narratives which become the primary medium by which the issue and the social cues that guide attention are transmitted between people. Meaning is therefore created by the way we talk about it (or, I have suggested, the ways that we choose not to talk about it).

Stories and narratives have universal qualities, and we squeeze new information into these standard story patterns. We then justify these stories with reference to available recent experience—usually itself in the form of a socially generated story.

Climate change is, I suggest, exceptionally *multivalent*. It lends itself to multiple interpretations of causality, timing, and impact. This leaves it extremely vulnerable to our innate disposition to select or adapt information so that it confirms our preexisting assumptions—biased assimilation and confirmation bias. If climate change can be interpreted in any

number of ways, it is therefore prone to being interpreted in the way that we choose.

These constructed narratives therefore contain the final reason why we can ignore climate change: they become so culturally specific that people who do not identify with their values can reject the issue they explain.

The narratives formed by the early adopters of the issue came to dominate and frame all subsequent discussion. The early focus on tailpipe emissions rather than wellhead production became a meta-frame that influenced all subsequent narratives concerning the definition of the problem, moral responsibility, and policy solutions.

As the issue matured, deniers became louder and stronger and created their own narratives that came to "pollute" the discourse. These built on and reacted to the existing narratives, often adopting and reworking their frames, to create compelling stories in which familiar enemies were motivated by self-interest to cause intentional harm.

As these narratives became repeated and shared within peer groups, they came to constitute a social proof. These reinforced the other social cues coming from the media and political elites. As the issue developed, these cues accumulated and powerful social feedbacks tended to amplify them, leading people to overestimate the consensus within their own social group and to alter or suppress their own opinion if it did not conform.

What is more, we are all active participants in this process, developing personal narratives that help us to manage the anxiety, moral challenge, and required sacrifices inherent in climate change by choosing to make it yet more distant, less certain, more hopeless, or less relevant to our own values. We even interpret the wider social norms to select the social cues that best reinforce our chosen position. That is to say that, even with the best intentions, we cannot help setting up narratives that are designed to fail against the very biases they are supposed to overcome.

There is, then, no single factor that leads people to ignore climate change. Anyone who suggests that there is will, inevitably, be fulfilling the wicked prophecy and defining the problem to support that conclusion. Rather, there is a set of interrelated negotiations between our personal self-interest and our social identity, in which we actively participate to shape climate change in ways that enable us to avoid it.

The bottom line is that we do not accept climate change because we

wish to avoid the anxiety it generates and the deep changes it requires. In this regard, it is not unlike any other major threat. However, because it carries none of the clear markers that would normally lead our brains to overrule our short-term interests, we actively conspire with each other, and mobilize our own biases to keep it perpetually in the background.

. . . And Why We Are Wired To Take Action

Even with our limitations, humans can accept, understand, and take action on anything. We have immense capacity for pro-social, supportive, and altruistic behavior. Climate change is entirely within our capacity for change. It is challenging, but far from impossible.

Beyond immediate personal threats, we have no instinct stronger than the drive to defend the interests of our own descendants and social group. Climate change is not a minor inconvenience—even though some narratives shape it as such. It is an existential threat on a scale equaled only by nuclear war. It contains threats at every level: to our sense of place, our identity, our way of life, our expectations of the future, and our deepest instincts that lead us to protect our children and defend our tribe.

Nothing is contained within climate change that we are incapable of dealing with. Even though it presents itself in the form of a future threat, we have the capacity to anticipate threats, by giving them the narrative and cultural form that engages our emotional brain and by creating social institutions that sustain our response. We have a strong drive toward such collective enterprises, for they are one of the means by which we cope with the fear of our own mortality.

We also have a virtually unlimited capacity to accept things that might otherwise prove to be cognitively challenging once they are supported within a culture of shared conviction, reinforced through social norms, and conveyed in narratives that speak to our "sacred values." These could just as readily lead us to action as lead us to inaction.

There is no single pathway from information to conviction. The cultural feedbacks that lead climate change to become more distant, uncertain, or hopeless could equally well work the other way by creating a social proof and legitimacy around accepting and taking action. The personal reward for action would then come from an intensified sense of belonging and the satisfaction that comes from contributing to a shared project. Climate change is the one issue that could bring us

together and enable us to overcome our historic divisions. This, rather than the self-interest contained in the economic arguments, is the real reward of taking action.

The final proof that we are not inherently "wired" to ignore climate change—which should be self-evident—is that the majority of people, across the world, already accept that it is a major threat and might be prepared to support the necessary changes. They currently feel isolated and powerless, but could readily be mobilized if their concerns and hopes became validated within a community of shared conviction and purpose. Human history provides so many examples of social movements that have overcome apparently impossible obstacles that we know that we should be capable of meeting this challenge, providing that we move decisively.

But this is just one of the many pathways that are opening up in front of us. Climate change is not a static issue, and extreme weather events of entirely unprecedented scale and duration will continue to build. These events now occur within a cultural and political environment that has been thoroughly primed with socially charged beliefs. The critical questions for the future are how the increasing personal experience of extreme weather will interact with these existing narratives, and whether the result will be an increase or a decrease in our acceptance that our own behavior is their underlying cause.

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In a Nutshell

Some Personal and Highly Biased Ideas for Digging Our Way Out of This Hole

CLIMATE CHANGE IS A SCIENTIFIC fact. Scientists have become so bruised by their political battles that they have come to use much weaker language, declaring that climate change is "very likely" or "unequivocal." Let's just call it a fact, because that is what it is. There is plenty of uncertainty around how the climate is responding to these enormous changes, but being uncertain is not the same as being unsure.

Scientists are remarkably sure that climate change is bringing major impacts—they simply cannot with absolute certainty disentangle the web of cause and effect. The word *certain* is one of those many false friends of words that scientists use in a particular and unusual meaning. In regard to climate change, we are frequently divided by our common language.

Our psychological obstacles are also a scientific fact. The large body of rigorous research-based evidence suggests that climate change struggles to overcome numerous biases against threats that appear to be distant in time and place. We need to make these explicit and recognize that many may be subconscious.

To create proximity we need to **EMPHASIZE THAT CLIMATE CHANGE IS HAPPENING HERE AND NOW.** In particular, we should **BE WARY OF CREATING DISTANCE** by framing climate change as a

future threat for people far away and, especially, as a threat for non-humans, however cute they might be.

Our sense of loss looks backward rather than forward, and research suggests that people are more motivated to restore lost environmental quality than improve current environmental quality. There is therefore a potential to express climate change as an opportunity to **RESTORE PAST LOSS**, whether it is social (lost community, values, purpose) or environmental (lost ecosystems, species, or beauty). The rapidly growing movement for the rewilding of degraded landscapes is an interesting response to the uncertainties of future loss.

We are very well adapted to respond to immediate threats but slow to accommodate moving change. Climate change is a process, not an event, so it requires that we **RECOGNIZE MOMENTS OF PROXIMITY** that can demand attention. These may be moments of political decision making, collective action, or generated conflict. In my view, the Keystone XL pipeline is a legitimate attempt to create a historic moment. Those critics who argue that the pipeline will only ever be a small part of overall U.S. emissions are missing the point. Their complaint is like saying that the locations of seats at the lunch counter of the Greensboro Woolworth's or on the Montgomery buses were trifling examples of racial segregation. Sometimes the act of **CREATING THE SYMBOLIC MOMENT** is far more important than its overall relevance.

Extreme weather events create a moment of proximity and heightened awareness, but also of the increased in-group loyalty and anxiety that can readily exclude consideration of climate change. Even when confronted with direct evidence of climate extremes, the main influence on people's attitudes will still be the views of the people they know and trust.

The interference of outsiders will very likely be counterproductive in such situations, and the best option for building conviction lies with providing the information for trusted local communicators to **OPEN UP A CONVERSATION ABOUT LONG-TERM PREPAREDNESS.** Preparedness and adaptation are routes for people to accept that climate change is real and already under way—and, as I have shown, it is possible to build a discussion around these topics even when it is politically taboo to talk about the wider issues.

However, these approaches will always be specific to each context. Whatever the findings of psychology experiments with their WEIRD experimental subjects, we need to remember that not everyone wants to protect

the status quo, especially if they are already struggling against economic and social injustice. So we need a **NARRATIVE OF POSITIVE CHANGE,** in which our adaptation to climate change does not just protect what is already here but also creates a more just and equitable world.

Climate change is a narrative, shaped through social negotiations and transmitted between peers. People form their response to the narratives, not the science, and so it always needs to **FOLLOW NARRATIVE RULES, WITH RECOGNIZEABLE ACTORS, MOTIVES, CAUSES, AND EFFECTS.** People will be inclined to follow the most compelling narrative, so be careful: **DON'T LET THE NARRATIVE TAKE OVER** the way we think or talk about it.

We interpret climate change through frames, which focus our attention but limit our understanding—they allow us to exclude or ignore meanings that lie outside the frame. Most of the factors that enable us to ignore climate change derive from attempts to limit its meaning; that it is an *environmental* issue, *a threat* or an *opportunity* (but not both), a *wellhead problem* or a *tailpipe problem* (but not both). So, **RESIST SIMPLE FRAMINGS** and **BE OPEN TO NEW MEANINGS.**

Because climate change is a wicked problem, it can easily become defined entirely by its own framings and the solutions we propose, and policy makers can easily become locked into the simple one-off solutions that solve tamer problems. We all need to **ENSURE THAT A WIDE RANGE OF SOLUTIONS IS CONSTANTLY UNDER REVIEW**—a process that planners call iterative risk management.

Frames define battlegrounds, and so limited frames can lead to false debates. Arguments that renewable energy brings greater energy security encourage the expansion of domestic fossil fuels. Arguments that the low-carbon economy will bring jobs become vulnerable to evidence that the high-carbon economy might bring more jobs. As the cognitive linguist George Lakoff says, **NEVER ACCEPT YOUR OPPONENT'S FRAMES**—"don't negate them, or repeat them, or structure your arguments to counter them."

The presence of enemies with the intention to do harm engages our moral brain and energizes our outrage. However, climate change lacks clear enemies: We all contribute to this problem and all stand to suffer its impacts. This is an incomplete and uncompelling narrative, and activists on all sides seek enemies that can fill these missing roles of good against evil, David against Goliath, might against right.

We need major change, and change requires social movements. Some argue that movements need enemies, and this may well be true for generating rapid change. However, there is also a price to pay. This is an in-group, out-group game, so **BE CAREFUL THAT ENEMY NARRATIVES DO NOT FUEL DIVISION** or agitate deep-rooted and distracting animosities at a time when we need to be finding common purpose. My view is that campaign narratives could experiment more with alternative narrative traditions, for example **CREATE A HEROIC QUEST** in which the enemy may be our internal weaknesses rather than an outside group.

Overall, we need to **BUILD A NARRATIVE OF COOPERATION** that can bring people together around a common cause. This should **STRESS COOPERATION NOT UNITY**—we do not have to become the same people, and conservatives in particular require well-defined differences rather than a merger. **ACCEPT THE SPECTRUM OF APPROACHES** with radical protesters, lobbyists, policy makers, and multiple different sectors, all pushing in the same direction if not with the same detailed objectives.

In the way that we tell the climate change story, we need to **BE HONEST ABOUT THE DANGER**—but remember that this will only motivate people if they hear it from trusted communicators and can see opportunities for action and change. **ENCOURAGE POSITIVE VISIONS**, but remember that these may carry social cues that may repel others. The bright side technocratic future vision, for example, is elitist and materialistic, and alienates those who already feel disenfranchised.

When people say that climate change requires a values change, they invariably mean that other people need to change to *their* values. In fact we *all* hold the right values, and humans have an extraordinary capacity to empathize and care about the welfare of others. The problem is that we have not all engaged the right values with this issue. The challenge is how to best **ACTIVATE COOPERATIVE VALUES RATHER THAN COMPETITIVE VALUES. STRESS WHAT WE HAVE IN COMMON**: a better life for our children, health, security, thriving communities.

By contrast, attempts to motivate people though appeals to personal self-interest are unlikely to be successful. Contrary to the assumptions of conventional communications, extensive research confirms that people are poorly motivated by money. Money is important, but it is a proxy for other ends: security, caring for your family, and social identity, which could be addressed in other ways. It is far more effective to **RELATE SOLUTIONS TO CLIMATE CHANGE TO THE SOURCES OF HAPPINESS**, and the connections we feel with our friends, neighbors, and colleagues.

People are best motivated when an action reinforces their identity and sense of belonging to their social group. **EMPHASIZE THAT ACTION ON CLIMATE CHANGE MAKES US PROUD TO BE WHO WE ARE**, and reinforce this with the *social cues* and *social proof* that people like ourselves are seen as concerned and taking action. Most communication around climate change and low-carbon behaviors is anti-replicating, based around loneliness, isolation, and despair. So **ENABLE COMMUNICATIONS WITH BUILT-IN INTERACTION** that can be passed between peers and create visible social norms. We need to stop regarding climate change as an isolated intellectual exercise and **CREATE COMMUNITIES OF SHARED CONVICTION** within which people can share their doubts and fears and draw on the strength of shared commitment.

Climate change is a science *and* a conviction. Following the division built into our own brains between our rational and emotional processing systems, it is entirely possible to know about climate change and yet not to fully believe in it. Conviction is the critical process by which we incorporate climate change into our moral framework and accept the need for action.

A conviction is not a blind faith: We should continue to **KEEP AN OPEN MIND**. There is an excessive level of closed-mindedness on all sides, and two-thirds of people say that they will never change their minds about climate change. Because climate change is ambiguous and multivalent, it is open to multiple interpretations. So **BE ALERT TO YOUR OWN BIAS** and to your own innate tendency to select the information that confirms your existing views.

REMEMBER THAT EXPERTS CAN ALSO BE BIASED by their own specialism or worldview. Clever people indulge in clever confirmation bias. Experts are human too and are also coping with their own internal conflicts, which they may be projecting onto the way that they interpret climate change. So always **SEEK OUT A WIDE RANGE OF VIEWS.**

Listen to people who disagree with you, and recognize that they can sometimes be a source of insight and alert you to your own bias. **DEBATE IS USEFUL** so **LEARN FROM YOUR CRITICS.**

And, for the benefit of conservatives and skeptics, I would add that you, too, should listen to the other side and **RESPECT**

ENVIRONMENTALISTS, who have worked for three decades to keep this issue alive. If you do not like what they say, then you should become more involved in building positive solutions around your values rather than fighting a losing battle to undermine the science.

We should **BE PREPARED TO LEARN FROM RELIGIONS** and the thousands of years of experience they have in creating methods to sustain socially held belief. This does not mean that climate change is a religion, any more than a declared belief in the right to personal freedom, sound finance, or the strength of the military are religions—these are statements of commitment to personally held ideals (taken, as it happens, from Republican presidents).

Learning from religions, we can **PRESENT CLIMATE CHANGE AS A JOURNEY OF CONVICTION** which will contain periods of doubt and uncertainty as well as moments of personal revelation and sudden awareness. Encourage people to explain, in their own words, these moments and the *process* by which they came to terms with the science, recognizing that conviction is sometimes hard to maintain and needs to be reaffirmed.

We should also **CREATE MOMENTS OF COMMITMENT** and **FRAME CLIMATE CHANGE AS AN INFORMED CHOICE** between desirable and catastrophic outcomes, in which people can understand that inaction is itself a choice in favor of severe climate change.

To break through the self-interest of our cognitive biases, and fully activate our emotional brain, we need to **INVOKE THE NONNEGOTIABLE SACRED VALUES** that would enable people to make short-term sacrifices for the long-term collective good—for example, values that prohibit destroying a precious cultural asset, inflicting harm on the weak or innocent, abusing God's creation, and being cruel to our parents or children.

In the formation of conviction, trust is more important than information. Communicators, especially scientists, should learn to **EMPHASIZE THE QUALITIES THAT CREATE TRUST** (their independence, values, accountability) and especially **TELL PERSONAL STORIES**. Communicators should talk about their personal journey, especially if they have come to their conviction from a position of doubt. They should **BE EMOTIONALLY HONEST**, talking openly about their hopes, fear, and anxieties.

Moral consistency is especially important for trust. If you wish to

communicate climate change, you need to **RECOGNIZE THE ROLE OF YOUR OWN EMISSIONS**, not least because a high-emission lifestyle will inevitably corrupt your own judgment, and you should share your own struggle and success in reducing them

Campaigners and politicians love to fantasize that a huge top-down communications projects will finally knock it into people's heads. They are unlikely to work. Instead we need to **ENABLE FRESH, REAL VOICES**, and not depend on the glib slogans of advertising agencies. And this means that the people who currently communicate climate change, especially environmentalists, must be prepared to **BACK OFF AND ENCOURAGE NEW COMMUNICATORS**—not as the guests on their podium but as new speakers in their own right.

Actually, let's go a step further. Climate change does not belong to environmentalists and is not even environmental. Of course, it includes environmental concerns and impacts, but it is so much bigger than that. As soon as we label it, we restrict our understanding of it. Obviously, environmentalists can talk about it however they like in their own networks, but for wider presentation and to the media, I plead, **DROP THE ECO-STUFF**, especially polar bears, saving the planet, and any other language that stakes out climate change as the exclusive cultural domain of environmentalism.

Above all, it is critical that we **CLOSE THE PARTISAN GAP** between left and right by opening up climate change to conservative framings and ownership. This should start with **AFFIRMING WIDER VALUES**, which, it is well established experimentally, makes people far more willing to accept information that challenges their worldview. This requires communicators to reverse the normal flow that converts the science into people's values and begin by understanding and validating their values first and then come up with the ways that climate change can speak to those values.

Testing suggests that new framings of values could include respect for authority, personal responsibility, and loyalty to one's community and nation, avoiding intergenerational debt, and reducing societal dysfunction. I warn environmental liberals that the measure of success will inevitably be the emergence of some new ways of talking that you find unpleasant. Similarly, **NEVER ASSUME THAT WHAT WORKS FOR YOU WILL WORK FOR OTHERS**. Indeed, the fact that you strongly like something may well be an indication that people with other values will hate it.

We also need to **BE HONEST—THIS IS TOUGH.** Psychotherapists argue that the real challenge is that climate change generates strong feelings that can, unless recognized, lead us to disavowal and outright denial. We need to **RECOGNIZE PEOPLE'S FEELINGS OF GRIEF AND ANXIETY**, and acknowledge and provide space for contradiction, ambivalence, loss, and mourning.

The starting point could be providing the space for people to openly acknowledge their feelings and share them. We need to **MOURN WHAT IS LOST, VALUE WHAT REMAINS.** And not just the natural world; we need to **MOURN THE END OF THE FOSSIL FUELS AGE**, which, for all of its dirt and danger, was also exceptionally affluent, mobile, and exciting. The low-carbon world will have new pleasures, but no longer the sweet roar of the Ford Mustang V8.

We should all **BE GLAD TO BE A POLLYANNA.** She has become synonymous with dim-witted optimism, but in the original books by Eleanor H. Porter, the character is clearly shown to be coping with immense grief and suffering through her gratitude for what she does have—her friends, community, and the joy of being alive.

What is clear is that this is a fast-moving issue and everything will change. At present, climate change exists largely as a narrative of anticipation shaped by familiar experience and existing frames. But momentous shifts are under way in the world's climate systems and carbon cycles, which will, within a single lifetime, make climate change entirely real, salient, and unavoidable. This will be a new world in which past certainties will disappear and our inbuilt social and psychological biases will become increasingly influential on our judgment.

This is why current responses are so important. **REMEMBER THAT HOW WE RESPOND NOW WILL PROVIDE THE TEMPLATE FOR FUTURE RESPONSES.** Acceptance, compassion, cooperation, and empathy will produce very different outcomes than aggression, competition, blame, and denial. We hold both futures within ourselves and, as we choose whether and how to think about climate change, we are choosing how we will think about ourselves and the new world we are creating.

Four Degrees

Why This Book Is Important

IN THE INTRODUCTION TO THIS book I pledged that it would not contain information on the impacts of climate change until its final chapter. Later I discussed how scientists struggled to maintain their composure in the face of the information that they held. In particular I mentioned their anxiety that average global temperatures might rise over the threshold of 4 degrees Celsius (7.2 degrees Fahrenheit).

For many years their attention was focused on lower outcomes—especially around two degrees, the level that was adopted by policy makers, somewhat arbitrarily, as the boundary level for "dangerous" climate change. In recent years, though, scientists have become far more willing to warn that four degrees is the actual future we face. Professor Robert Watson, the co-chair of the IPCC, was the first to break ranks in 2008 when he publicly warned governments that they needed to develop adaptation plans for four degrees. The following year international experts met for the first time to present detailed scenarios at the "4 Degrees and Beyond" conference at Oxford University. By 2013, there was sufficient agreement that Mark Maslin, professor of climatology at University College London, could tell the Warsaw climate negotiations, "We are already planning for a 4°C world because that is where we are heading. I do not know of any scientists who do not believe that."

Four degrees is also increasingly on the minds of senior policy makers. The International Energy Agency reports that current emissions figures

We also need to **BE HONEST—THIS IS TOUGH.** Psychotherapists argue that the real challenge is that climate change generates strong feelings that can, unless recognized, lead us to disavowal and outright denial. We need to **RECOGNIZE PEOPLE'S FEELINGS OF GRIEF AND ANXIETY**, and acknowledge and provide space for contradiction, ambivalence, loss, and mourning.

The starting point could be providing the space for people to openly acknowledge their feelings and share them. We need to **MOURN WHAT IS LOST, VALUE WHAT REMAINS.** And not just the natural world; we need to **MOURN THE END OF THE FOSSIL FUELS AGE**, which, for all of its dirt and danger, was also exceptionally affluent, mobile, and exciting. The low-carbon world will have new pleasures, but no longer the sweet roar of the Ford Mustang V8.

We should all **BE GLAD TO BE A POLLYANNA.** She has become synonymous with dim-witted optimism, but in the original books by Eleanor H. Porter, the character is clearly shown to be coping with immense grief and suffering through her gratitude for what she does have—her friends, community, and the joy of being alive.

What is clear is that this is a fast-moving issue and everything will change. At present, climate change exists largely as a narrative of anticipation shaped by familiar experience and existing frames. But momentous shifts are under way in the world's climate systems and carbon cycles, which will, within a single lifetime, make climate change entirely real, salient, and unavoidable. This will be a new world in which past certainties will disappear and our inbuilt social and psychological biases will become increasingly influential on our judgment.

This is why current responses are so important. **REMEMBER THAT HOW WE RESPOND NOW WILL PROVIDE THE TEMPLATE FOR FUTURE RESPONSES.** Acceptance, compassion, cooperation, and empathy will produce very different outcomes than aggression, competition, blame, and denial. We hold both futures within ourselves and, as we choose whether and how to think about climate change, we are choosing how we will think about ourselves and the new world we are creating.

Four Degrees

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