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Degrees of Separation

How Climate Experts Cope with What They Know

Sitting on a panel at the 2012 annual assembly of the Tyndall Centre for Climate Change Research, I remember vividly the palpable unease that entered the room when the discussion turned to four degrees. There was a hesitation in broaching the subject. Voices became quieter and less confident. Nonetheless, everyone in the room talked about four degrees Celsius of warming as being entirely probable if not unavoidable.

At the reception later that evening, the scientists chatted amiably in pairs and small groups, clutching their glasses of warm white wine and balancing plates of canapés. With their slightly rumpled old-fashioned clothes and their polite, intense demeanor, they looked like any other group of highly educated professionals—to my eyes, rather like the audience for a concert of somewhat challenging chamber music.

However, listening to the detail of their conversations reminded me that this gathering was far from ordinary. The people in this room constituted a large part—maybe even the majority—of those in Britain who truly understood why a global temperature increase of two degrees might, just, be manageable, and why one of four degrees would be an utter catastrophe. This, after all, is what they have spent their lives studying. Of all people, they know all too well that the phrase *four degrees* is shorthand for environmental, social, and economic collapse. And, as their models keep

telling them, we are heading straight for it and could well reach it within sixty years.*

According to Professor Lonnie Thompson, a climatologist at Ohio State University, those in his profession are a stolid group, not given to "theatrical rantings about falling skies." However, he says, they now feel compelled to speak out about the dangers because "virtually all of us are now convinced that global warming poses a clear and present danger to civilization." Extraordinary though this statement is, even more extraordinary is that it appeared in an otherwise sober report in the journal of a respected international science association.

Every year their warnings have become ever clearer and more serious. And, it seems, every year they have become less believed. Returning to the quote with which I started this book, these scientists are, I fear, uncomfortably similar to the handful of people in 1942 who knew what was happening to the Jews of Europe, who carried the weight of that dreadful knowledge but struggled to persuade anyone of the existence of a crime of such immensity.

One scientist told me that he was so disturbed by the latest findings that he wrote to a few close friends—he named some of the world's most senior scientists—and asked them: the future of humanity depends on this, is there any chance—please any chance—that we could be wrong? They replied immediately, saying that they too constantly worried about this and (contrary to what the skeptics claim) were always open to the possibility of being wrong. However, whenever they went back over the evidence, they could not avoid the uncomfortable conclusion that they had indeed gotten this right. "We are active fatalists," he told me.

Activists and campaigners also struggle with this sense of anxiety, suffering sleepless nights and panic attacks. Dorian Williams, an anthropology senior at Brandeis University who leads the campus divestment campaign for 350.org, says that she experiences "very serious, very low states of being for hours to days to weeks at a time." It's never going to go away, she says, but "you just have to work through it so that you can keep fighting."

People who deal every day with climate change as a reality provide an

* I discuss some of the implications of a four-degree temperature increase in the final chapter of this book.

important insight into the ways that humanity as a whole will cope with its psychological and moral challenges. Almost all analysis concerns the psychology of people who refuse to accept the science—which, understandably, they resent. But what about the people who are already convinced? They are the advance party and, as climate impacts build, everyone will follow their lead.

Their internal moral dilemmas come to a head as they struggle to square what they know about the impacts of high-carbon lifestyles with the pressure to conform to a society where those lifestyles are not just encouraged but also often required as a mark of social belonging.

I have an informal social research project—life is one long experiment after all—in which I gently coax climate change experts to talk to me about their personal holidays. A senior climate economist at the World Bank admitted that he flew regularly for breaks in South Africa but said that that this was a force for good because the carbon offsets he bought "help set a price in the carbon market." A national media environment correspondent decided to fly with his family to Sri Lanka because, he said, "I can't see much hope." A climate scientist specializing in polar research takes several long haul flights every year for skiing holidays because the "job is so stressful." The lead climate campaigner for one of the largest U.S. environmental organizations flew so often for her work that she could take regular long-distance holidays using her air miles with an automatic upgrade to business class.

All of them felt uncomfortable discussing their leisure flying, and I have found that there is a norm of silence—a meta-silence even—around this topic. Nonetheless, when prompted, all of them could present complex narratives to justify their own behaviors, often containing a moral license or deferring to the social norm among their fellow middle-class professionals. They all argued that they would gladly stop flying but—and here they drew on their insider understanding of the scale of the problem—a single personal sacrifice is meaningless unless it is supported by wider systemic and social change. Ironically, their own well-informed arguments provide the clearest evidence possible that scientific information, on its own, is unable to counter socially engrained behaviors.

Professor Kevin Anderson, the former director of the Tyndall Centre, is unusual for his reluctance to fly for any reason. His audience at a recent conference in China was astonished and impressed when he told them

he had come (and would return) by train. He is convinced that this added to the legitimacy of his science.

Anderson regards it as "incredibly disturbing" that the people who shape climate policy are such profligate fliers. He tells me of a conversation with the director of one of the largest power utilities in Britain, who told him, quite casually, that the following weekend he was flying with his horse to China to go riding. Anderson explodes, "We were both about to give evidence at a government hearing on climate change and he was flying his bloody *horse* to China! . . . And when I challenged him, he looked at me like I was some kind of radical lefty!"

Experts seem to believe, Anderson tells me, that the pearls of wisdom that they've rained down from thirty-two thousand feet in a first-class seat are so important that they outweigh their emissions and those of the people like them. They don't see that the reason we have this problem is precisely because of people like them and, he adds, being more conciliatory, "people like me."

And, I should also add, people like *me*—because I am an expert flyer too. I fly rarely and I always try to justify each flight. But as that word *justify* reveals, I am also prone to constructing a narrative that can resolve the inner conflict I feel every time I sit on a plane. It is all immensely frustrating because I must admit that I love travel and, in my pre–climate change days, I flew a lot. So I know very well that flying is addictive.

Mark Ellingham, the founder of the Rough Guides travel books, coined the phrase "binge flying," which he compares with nicotine addiction. Interviews with frequent travelers find them using the same language as other forms of addiction. They talk about the buzz or rush, their loss of inhibitions, finding new meaning in life, and their depression on their return.

Maybe this is why the self-serving narratives we experts mobilize to justify our personal flying are so uncannily similar to those that people raise around addictions: I need to do this, I'm not hurting anyone, everyone else does it, I've worked for it, I can stop anytime, other people are far worse.

Texas state climatologist John Nielsen-Gammon says that the public needs to remember that the people who work on climate issues may be smart but are still human beings like any others, "driven by varying mixtures of ambition, curiosity, orneriness, self-confidence, and altruism."

However, climate experts *are* different from other people in one

critical aspect: We are the lead communicators of climate change and our own actions will always be monitored as a measure of our trustworthiness. In other areas, inconsistent behavior by decision makers is utterly relevant: the racial prejudice of judges, the tax evasion by politicians, and the sexual behavior of priests are all matters of intense public attention because we know intuitively that an internal conflict may undermine their judgment.

Inevitably we run the risk that we will project our own values, inconsistencies, and silences onto the story we tell. Is it any surprise, given these internal conflicts, that there is so little mention of flying among the list of personal actions promoted by environmental groups and the U.S. Environmental Protection Agency? Or, indeed, that international aviation is not included in national emissions calculations or the Kyoto Protocol?

Renee Lertzman, a visiting psychology fellow at Portland State University, argues that it is mistaken to judge these inconsistencies as arrogant or hypocritical or apathetic. They are, she says, best understood as a strategy by which experts defend themselves against their anxiety and the internal dilemmas that cause them pain. "We cannot tolerate our own complicity, so we externalize and project our concern onto others—the airline industry or the failure of government policy to control it," she tells me.

She recalls a participant in one of her workshops complaining that people who fly "lie" when they say that they care about climate change. No, she stresses, "it is *not* lying—these are intentions that they are struggling to negotiate." Nor, she says, is there a gap between what they say and what they do. She prefers to see this as a tangle of conflicting needs, or, she suggests, a tapestry.

Rosemary Randall, a psychotherapist who has worked extensively with climate scientists, says that she frequently encounters their "bewilderment, depression, and despair at public attacks or indifference." Their solution, she suggests, has been "to move further into the world of reason—more graphs, tighter arguments, greater precision."

Another psychologist, who works alongside climate scientists in one of the largest British research councils (and so preferred to talk to me off the record) is perpetually disturbed that her colleagues fly constantly and never talk about their anxiety or the implications of their work. She is convinced that, as a result, generating ever more knowledge has become the end in itself. They have, she told me, created "a huge information machine run by experts, reinforced by other experts, and all they do is sit around in expert committees, and make their expert presentations to each other."

This rationalist expert culture protects scientists from the emotional content of their work. When Lertzman interviewed scientists at the Environmental Protection Agency in 1998, she expected them to share stories about their emotional struggle at the frontline. She tells me she was really surprised to hear them say, "'I am a scientist and I don't engage on that level.'"

In the fascinating article "When Swordfish Conservation Biologists Eat Swordfish," the marine biologist Giovanni Bearzi complains that biologists who spend their professional lives researching unsustainable fishing can nonetheless sit down at a restaurant and order swordfish or tuna from those declining stocks. It is, he says, "as if monks advocating poverty were to wear jewelry and expensive silk robes."

Yet, if Lertzman and Randall are right, we could see this in a quite different light. When people gratuitously perform the thing they warn against, it suggests a ritual of public disavowal. They are managing their own emotional anxiety by policing a strict cognitive divide between work and play, information and responsibility, the rational brain and the emotional brain. Activists often quote the motto "be the change you wish to see," which they ascribe to Mahatma Gandhi (although, of course, he never actually said this). In a way, these experts are also acting out the world they wish to see—a world in which they do their job, governments do their job, resources are managed sustainably, and then they can fly to Italy on holiday and have that well-earned swordfish steak—goddamnit!

Professor Chris Rapley, former director of the Science Museum in London and one of Britain's most senior climate scientists, has become an unlikely advocate for the psychoanalytic arguments, which he gladly defends against the positivist prejudice within the science community that "psychotherapy is not rigorous and quantitative."

Rapley speaks with remarkable honesty and clarity about the internal stress he endures from what he knows. "It is," he tells me, "*so* difficult to be optimistic, however much you argue yourself into an optimistic position. I know I have tended to deal with my own anxiety by placing what I know into watertight compartments. The fact that we climate scientists can sleep comfortably at night tells you that we have unconsciously worked very hard at this."

Lertzman and her fellow psychotherapists argue that we are all irrational, unconscious, confused human beings and we are *all* struggling to make sense of this issue. This is why she finds the cognitive explanations for our avoidance of climate change to be "incredibly limited." They put the blame on the "ignorant, self-centered, shortsighted people, in contrast to the enlightened and evolved people." The focus on political affiliation is also superficial because it does not explore what leads people to become so strongly identified with those affiliations. Hatred, she says, is always a clue that something else is going on.

For Lertzman, the argument that climate change is too hard for us to deal with is "ridiculous," and if we turn it on its head, "there is plenty of evidence that we have enormous capacity for deep care and concern." The question is then how to reframe the argument away from the gap and into the tangle of the tapestry. People need to be in the place where their anxieties are recognized, to be able to say, "Yes, this is scary; this is hard," and only then, she says, can we be truly mature, creative, strategic, and innovative.

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Intimations of Mortality

Why the Future Goes Dark

THE JACOB K. JAVITS CONVENTION Center in New York City is heaving—115,000 fans crammed in for the second day of Comic-Con, the largest comics convention on the East Coast. I am here to ask a simple question: What do you think the future will be like?

My reasoning is this: These people are young, smart, and curious about technology and future worlds. Surely, as they stand around in lines waiting for autographs, they will have spare time to answer a few questions from a stray British social researcher—not in costume, although one woman eyes my scruffy trench coat and asks, "Out of curiosity, have you come as Inspector Gadget?"

So, I ask them, what *do* you think the future will be like?

The surprise is that they have little idea or, it would seem, desire to find out. One woman says, "I've never thought that far ahead—I like living in the present." A man farther down the line is concerned that it might be "a one-color-jumpsuit kind of future." "Like *Logan's Run*," he adds when I look perplexed.

Brian Ferrara is selling nine-hundred-dollar replica weapons from science fiction video games. "I'm not a doomsday prophecy kind of guy, but I am a realist," he says. So, being realistic, he doesn't see a bright future, but he is very vague about the details. Maybe, he speculates, we will be immobilized, strapped to a chair with a feeding tube.

One couple are more politically alert, having spent time with the