

The eye of the storm

Outspoken climate scientist James Hansen has just completed his first book, due for release in December. Interview by **Keith Kloor**.

James Hansen, arguably the world's most famous climate scientist, is prone to shouting from the rooftops. The director of NASA's Goddard Institute of Space Studies in New York, Hansen has, in recent years, become better known for his climate activism than his scientific research. Last July, he said on his website that "the global climate is near tipping points" and that the consequences would "be irreversible — if we do not promptly slow fossil fuel emissions during the next few decades".

His conviction that a climate catastrophe is looming has led Hansen to increasingly take on the role of advocate, sending numerous pleading letters to world leaders and CEOs, and attending

well-publicized protests against coal plants with the explicit aim of being arrested. It's also prompted him, at the age of 68, to write his first book. The title, *Storms of My Grandchildren*, refers to the ferocity of extreme weather events that will greet the next generation if the unmitigated use of fossil fuels continues.

Due out in December, the book is also the silver lining of Hansen's recent fight with prostate cancer. The illness afforded him a six-week recuperative period during which he hammered out the last chapters, Hansen tells me during an interview in mid-November at the rural Pennsylvania home he shares with his wife Anniek. Now cancer-free, Hansen is ready to take on the world again, and with it the

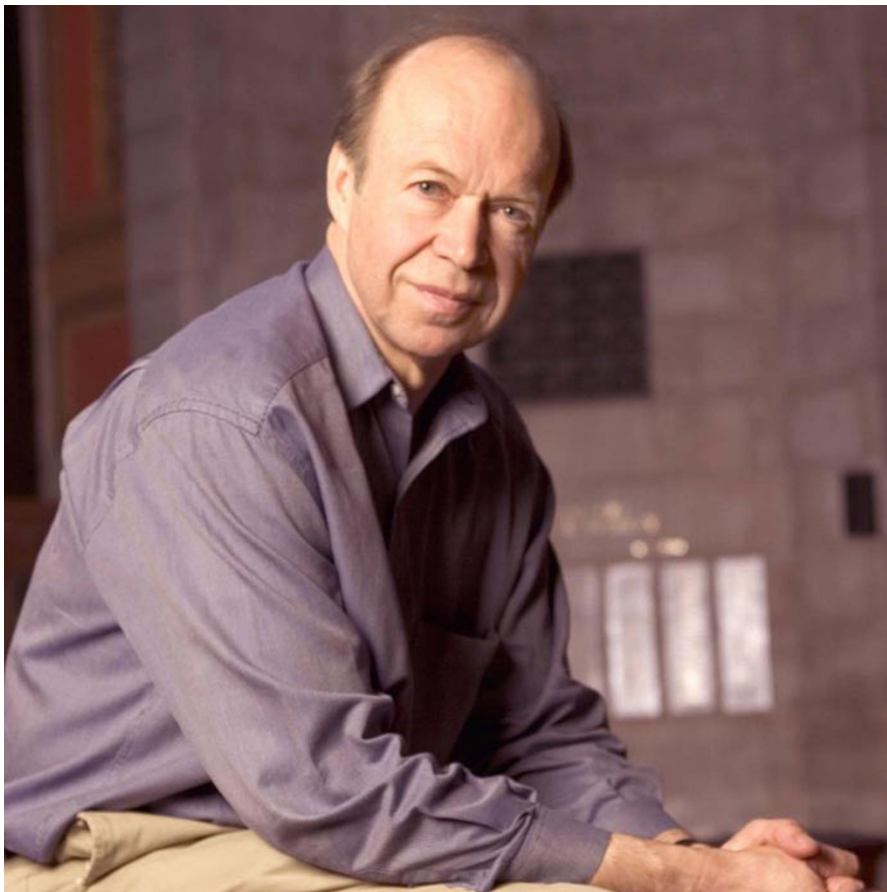
politicians who, in his view, are simply failing to protect his grandchildren from dangerous climate change. In a wide-ranging discussion, Hansen focuses largely on the urgency of the climate problem and the political inertia against solving it, both prominent themes in his book. "I am sorry to say," he writes, "that most of what politicians are doing on the climate front is greenwashing — their proposals sound good, but they are deceiving you and themselves at the same time."

According to Hansen, that includes US President Obama. Even former Vice President Al Gore, who perhaps has done more than anyone to raise awareness of climate change, is evidently deceiving himself. "I saw him on Larry King last night," says Hansen, "and what really worries me is that he sounds optimistic that we're now on a track to solve this problem." He lets out an incredulous chuckle. "We're not, however, on a track, and that's clear."

AHEAD OF THE CURVE

If anyone is well-poised to make this claim, it's Hansen. Often referred to as the 'grandfather of global warming', he first publicly aired his concerns about the climate back in 1988, during testimony to the US Senate in which he said that the Earth had entered a long-term warming trend and that man-made greenhouse gases were almost certainly responsible. Hansen based his assertion on climate model projections, which he published later that year and which still hold up today. Over the past two decades, Hansen has published regularly in journals, but he has come to favour historical data from the paleoclimate record over climate models, which he acknowledges are imperfect and — more worrisome to him — confusing to the public.

His foray into the world's ancient climate has led him to change his initial assumption that humanity could make do with a greenhouse gas loading of 450 parts per million (p.p.m.) in the atmosphere. Hansen is now convinced that even this would be dangerous. "It's crucial", writes Hansen in his book, "that we immediately recognize the need to



ARNOLD ADLER

James Hansen, Director of NASA's Goddard Institute of Space Studies in New York.

reduce atmospheric carbon dioxide to at most 350 p.p.m. in order to avoid disasters for coming generations.” He says that keeping the atmospheric concentration of greenhouse gases (measured in CO₂ equivalent emissions) below 350 p.p.m. should prevent average temperature from rising more than 1 °C above recent levels, which is where Hansen thinks we need to stay in the long term. That corresponds to 1.7 °C above the average pre-industrial temperature, somewhat lower than the 2 °C target officially recognized as the cut-off point for avoiding dangerous climate change. In its 2007 report, the Intergovernmental Panel on Climate Change concluded that keeping warming to 2–2.4 °C would mean stabilizing at about 450 p.p.m. The 2009 level is 387 p.p.m.

But growing recognition that 450 p.p.m. might not be low enough to avoid dangerous climate impacts suggests that Hansen may again be ahead of the curve. Some, however, have started to question whether Hansen’s advocacy compromises his authority as a climate scientist. Hansen addresses this in the book’s opening pages: “I am aware of claims that I have become a preacher in recent years. That is not correct. Something did change though. I realized that I am a witness not only to what is happening in our climate system, but also to greenwash. Politicians are happy if scientists provide information and then go away and shut up. But science and policy cannot be divorced.”

I ask Hansen to elaborate on this point. “There’s a huge gap between their public position and the realities of their policies,” he says. “That’s the situation we have now in Congress,” he adds, alluding to the cap-and-trade legislation that is currently being reviewed by the US Senate. He opposes the bill, in large part because of the offsets system that would allow polluters to continue spewing emissions, but also because political horse-trading has brought in provisions that will enable aging coal plants to stay in operation. The only solution, Hansen says, is to “phase out fossil fuels”. And the best way to do that, he contends, is through a carbon tax or, as he puts it, “a rising price on carbon emissions”.

Hansen’s vocal opinions on the pending bill, which he has called a temple of doom, are a sore spot for environmentalists, leading to claims that he is making enemies of those who share his goals. Some of his other statements have generated storms of a different sort. Perhaps the most explosive came in

2007, when he equated coal trains with Nazi death trains headed to crematoria concentration camps. “There were a few people who were offended by it, and I apologized to them, so I slightly changed the wording,” Hansen tells me, referring to how he addresses the matter in the book. “I don’t use the word crematoria. But I still say coal trains are death trains.”

REALITY BITES

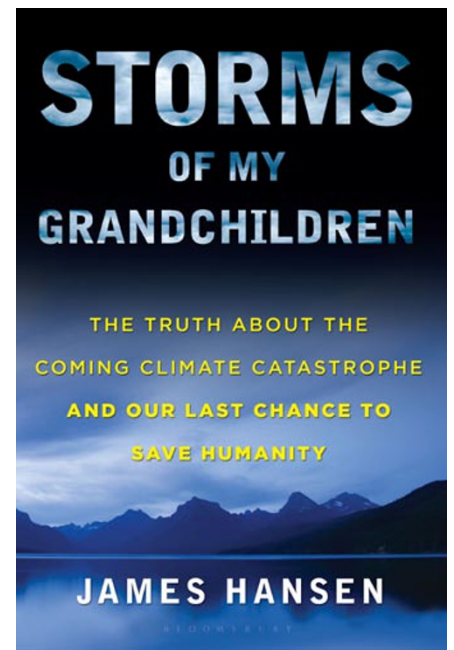
Hansen is realistic enough, though, to admit that all “the large pools of oil and gas are going to be used.... They are owned by countries like Russia and Saudi Arabia, and no [international climate] agreement is going to prevent them from selling those resources.” At this, he lets out a mordant chuckle. At least on this matter, he doesn’t come across as the uncompromising sort, which is how some of his critics portray him.

He also points out that coal use has increased in recent years and has gone back to being the top carbon emitter. “We’re moving back to coal,” he says. Indeed, a day after I meet with Hansen, China and the US — the top two emitters of greenhouse gases and the two countries with the largest coal reserves on the planet — issue a joint statement of cooperation on environmental issues, one of them being a pledge to promote 21st century coal technologies. In his book, Hansen makes it clear that no additional coal plants should go online until clean coal technology is in place.

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James Hansen

He also believes that any sensible US climate strategy has to include nuclear power. On this score, Hansen again runs afoul of many American environmentalists who are reflexively anti-nuclear. I don’t think the public understands the issue, Hansen says. You have to compare coal versus nuclear. Neither is ideal, but the safety record of nuclear is unmatched. Also, there are many countries that have it and are going to use it. I ask Hansen what he thinks about ongoing efforts to encourage citizens to shrink their carbon footprints, and whether he has tried to reduce his



BLOOMSBURY

Storms of My Grandchildren is due for release in December.

own. Somewhat surprisingly, he plays it down, saying that individuals cannot solve the problem. “If you reduce your carbon footprint, one of the effects is to reduce the demand, and if a lot of people do that, it makes [fossil fuel] cheaper so somebody else can burn it,” says Hansen. But one of the best actions an individual can take, he allows, is to stop eating meat. “I’ve almost become a vegetarian,” he says.

Returning to the possible future storms of his grandchildren, I ask Hansen how he could close a big gap in people’s minds: the gap between a vague, abstract awareness of climate tipping points and their projected impacts in the distant future. He shakes his head and laughs again softly before pointing out the kitchen window at the tranquil blue sky. Yes, he acknowledges, “climate change is an exceedingly difficult problem”.

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Editor’s note: *Storms of My Grandchildren: The Truth About the Coming Climate Catastrophe and Our Last Chance to Save Humanity* is due for release by Bloomsbury USA on 10 December 2009.