

Exaggerated Science

How Global Warming Research is Creating a Climate of Fear

By Hans von Storch and Nico Stehr

The polar ice caps are disappearing! The Gulf Stream is soon to reverse! Right? Well, maybe. But calling such apocalyptic theories into question is becoming more and more difficult for skeptical scientists. Meanwhile, the public is getting tired of being fed a diet of fear.



AP/ 20th Century Fox

Theories of global warming have left laboratories far behind. Now, they are the stuff of Hollywood.

Gone are the days when climate researchers would be content to sit in their ivory towers, packed to the gills with supercomputers, crunching numbers. Nowadays, their field is more likely to deliver the material of thrillers, and they themselves have acquired the leading roles. The issue has become so hotly contested and the forecasts so spectacular that they are no longer merely the stuff of media reports. And professionals who make their daily bread staging the apocalypse have taken the bait. Last year, filmmaker Roland Emmerich portrayed a global climate collapse triggered by human activity in his film "The Day After Tomorrow". In January, the film's literary counterpart, the novel *State of Fear* by bestselling author Michael Crichton, appeared in German bookstores, six months after having

been published in English.

Crichton's thriller deals with the violent conflict between sober-minded realists and radical idealists when it comes to the subject of climate. The idealists' weapon is organized fear of abrupt climate change, and they interpret any out-of-the-ordinary weather event as evidence of global warming caused by humans. PR consultants deliver the following advice to environmental groups: "You have to structure your information in such a way that it can always be corroborated, no matter what kind of weather we have." The realists, who claim that there is little evidence that meteorological extremes are caused by human activity, are fighting a losing battle. Their dry scientific facts don't stand a chance in a PR battle with the horrific scenarios painted in Technicolor by the climate idealists.

The film and the novel are similar in some respects. While the impending catastrophe in Emmerich's film is climatic, Crichton predicts an economic collapse in his novel. In both cases, however, the culprits are the greenhouse gases produced by human beings. In the film, it's the emissions themselves that lead to disaster, whereas the novel deals with the effects of fear of an impending climatic catastrophe. In Crichton's book, the idealists are so obsessed by their mission that, in a last-ditch effort to shake up public opinion, they finally trigger the catastrophes they themselves have predicted.

Overselling to get attention

Despite some artful fictionalization of the facts, Crichton has certainly delivered an accurate portrayal of the dynamics of communication among the scientific community, environmental organizations, government and civil society. The scientific community does in fact face a serious problem when it comes to public understanding and perception of climate change. Scientific research faces a crisis because its public figures are overselling the issues to gain attention in a hotly contested market for newsworthy information.

The climate change caused by human activity is an important issue.
But is it really what one US senator calls the "most important problem

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on the planet?" Don't global conflicts and poverty present challenges of a similar magnitude? And what about population growth, demographic changes and more common natural disasters?

Nowadays, there are few people in the United States who are interested in the Greenhouse Effect. At the end of the 1980s and the beginning of the 1990s it was a different story. There was the great drought of 1988 and then the 1993 Mississippi floods -- both events that really should have provided a wake-up call to the public vis-à-vis climate change. But it failed to materialize in the United States, and interest in the subject quickly waned. According to a survey conducted by CBS in May 2003, environmental problems were no longer ranked among the six hottest topics. Even among environmental problems, the issue of climate change was only ranked seventh. Although public opinion in Germany has taken a somewhat different course, how much longer will that be the case?



Everything can be blamed on human-caused climate change. Here, the flood that devastated parts of Eastern Germany in 2002.

Catastrophe is interesting: Sober analysis boring

Like the protagonists in Crichton's thriller, the general belief is that in order to keep public attention focused on the issue of "climate catastrophe" (a term, incidentally, that doesn't exist outside of German-speaking countries), it has to be presented "somewhat more attractively." In the early 1990s, just as Germany was being hit by severe wind storms, the German media were reporting that the storms were becoming more and more severe. Since then, storms of this magnitude have once again become less common in northern Europe, a fact now ignored by the media. They have also ignored the fact that changes in barometric pressure measured in Stockholm since the days of Napoleon reveal no systematic change in the frequency and severity of storms. Instead, the media are now filled with stories of heat waves and floods. Like the characters in Crichton's novel who incite public fear, the media are now claiming that all kinds of extreme events are increasing in frequency. Using this logic, a drought in the German state of Brandenburg fits together seamlessly with a catastrophic flood of the Oder River and the two events don't contradict each other.

In addition to normal floods and storms, other more dramatic threat scenarios -- such as a reversal of the Gulf Stream that would lead to a drop in temperatures in large parts of Europe or the rapid melting of the Greenland ice shelf -- are being added to the image of approaching disaster. There was even public speculation as to whether the Asian tsunamis could somehow be attributed to the disastrous work of the human race.



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And while one river is flooding, the other is drying up. Also because of global warming. Here, the Rhine River during the super-hot summer of 2003.

Public attention won't remain focused on these issues for long. Soon people will become inured to climate warnings and return to more everyday matters: joblessness, trans-Atlantic enmity, Turkey's joining the European Union or Prince Charles's marriage to Camilla Parker Bowles. Because of our short attention spans, we will experience how the prophets of doom paint the dangers of climate change in ever more lurid detail. One can already imagine the future images of horror: a breaking off of the western Antarctic ice shelf, which would cause sea levels to rise dramatically, and, after a few decades of unbridled carbon dioxide emissions, an abrupt temperature shift that would make the earth's atmosphere as incompatible with human life as that of Venus. Can such predictions, which have been known to the public for a long time, readily compete with the Hollywood images created by directors like Emmerich?

The price for provoking fear is high, because it's a practice that sacrifices the otherwise prized principle of caution. A scarce resource -- public attention and confidence in the reliability of science -- is being consumed without being renewed by a practice of offering positive examples.

But what do climate researchers themselves think about the issue, and how do they interact with the media and the public at large?

Is there scientific consensus?

The public statements made by well-known German climate researchers create the impression that the scientific fundamentals of the climate problems have essentially been solved. They claim that the scientific community has already established the conditions for taking concerted action. In this case, concerted action means reducing greenhouse gases as much as possible.

This is a view that in fact does not correspond to the situation in the scientific community. That's because a significant number of climatologists are by no means convinced that the underlying issues have been adequately addressed. Last year, for example, a survey of climate researchers from all over the world revealed that a quarter of respondents still question whether human activity is responsible for the most recent climatic changes.

But most researchers do believe that a shift in global climate caused by human activity is already occurring, and that it will accelerate in the future and become even more apparent. Higher temperatures and higher sea levels will accompany this shift. Scientists predict that in the more distant future, that is, in about 100 years, a substantial rise in greenhouse gas levels in the Earth's atmosphere will lead to more severe precipitation events in the northern hemisphere; some regions could experience more severe and others weaker storms.



20th Century Fox

The public no longer knows what to believe -- and is getting bored of the subject.

But there are always scientists for whom, in keeping with the maxims of the alarmists in Crichton's book, these scenarios are insufficiently dramatic. For this reason, they are increasingly drawing connections between current extreme weather events and the climate shift caused by human activity. They do, it is true, tend to use cautious language in drawing such parallels and interviews become exercises in understatement. When asked such questions as: "Are high water levels on the Elbe River, the hurricanes in Florida and this year's mild winter evidence of climate catastrophe?" they respond that while this cannot be proven scientifically, some believe it to be the case. None of these statements is incorrect, but when combined they lead to the obvious conclusion that of course these weather events are proof of climate catastrophe, a statement so explicit that no one would venture to volunteer it.

Always choose the most dramatic figure

The pattern is always the same. The significance of individual events is turned into material suitable for media presentation and is then cleverly dramatized. When the outlook for the future is discussed, the scenario that predicts the highest growth rates for greenhouse gas emissions -- which, of course, comes with the most dramatic climatic consequences -- is always selected from among all possible scenarios. Those predicting significantly smaller increases in greenhouse gas levels are not mentioned.



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Who benefits from this? The assumption is made that fear compels people to act, but we forget that it also produces a rather short-lived reaction. Climate change, on the other hand, requires a long-term response. The impact on the public may be "better" in the short term, thereby also positively affecting reputations and research funding. But to ensure that the entire system continues to function in the long term, each new claim about the future of our climate and of the planet must be just a little more dramatic than the last. It's difficult to attract the public's attention to the climate-related extinction of animal species following reports on apocalyptic heat waves. The only kind of news that can trump these kinds of reports would be something on the order of a reversal of the Gulf Stream.

Every prediction has to trump the last. Melting Antarctic ice is one of the current horror scenarios du jour.

All of this leads to a spiral of exaggeration. Each individual step in this process may seem harmless, but on the whole, the knowledge imparted to the public about climate, climatic fluctuations, climate shift and climatic effects is dramatically distorted.

Unfortunately, the corrective mechanisms in science are failing.

Public reservations with regard to the standard evidence of climate catastrophe are often viewed as unfortunate within the scientific community, since they harm the "worthy cause," especially because, as scientists claim, they could be "misused by skeptics." Dramatization on a small scale is considered acceptable, whereas correcting exaggeration is viewed as dangerous because it is politically inopportune. This means that doubts are not voiced publicly. Instead, the scientific community creates the impression that the scientific underpinnings of climate change research are solid and only require minor additions and adjustments.

Science losing objectivity

This self-censorship in the minds of scientists ultimately leads to a sort of deafness toward new, surprising insights that compete with or even contradict the conventional explanatory models. Science is deteriorating into a repair shop for conventional, politically opportune scientific claims. Not only does science become impotent; it also loses its ability to objectively inform the public.

An example of this phenomenon is the discussion surrounding the so-called hockey stick, a temperature curve that supposedly portrays developments of the last 1,000 years. The curve derives its name from its hockey stick-like shape. In 2001, the Intergovernmental Panel on Climate Change, a panel of climate researchers established by the United Nations, rashly institutionalized the hockey stick curve as an iconic symbol of human-induced climate change. In the curve, the upward-tilting blade of the hockey stick that follows decades of stable temperatures represents human influence.

In an article we published in the professional journal "Science" in October 2004, we were able to demonstrate that the underlying methodology that led to this hockey stick curve is flawed. Our intention was to turn back the spiral of exaggerations somewhat, but without calling the core statement into question, which is that human-induced climate change does exist. Prominent members of the climate research community did not respond to the article by engaging use in a dispute over the facts. Instead, they were concerned that the worthy cause of climate protection had been harmed.

Other scientists are succumbing to a form of fanaticism almost reminiscent of the McCarthy era. In their minds, criticism of methodology is nothing but the monstrous product of "conservative think-tanks and misinformation campaigns by the oil and coal lobby," which they believe is their duty to expose. In contrast, dramatization of climate shift is defended as being useful from the standpoint of educating the public.

The principle that drives other branches of science should be equally applicable to climate research: dissent drives continued development, and differences of opinion are not unfortunate matters to be kept within the community. Silencing dissent and uncertainty for the benefit of a politically worthy cause reduces credibility, because the public is more well-informed than generally assumed. In the long term, the supposedly useful dramatizations achieve exactly the opposite of what they are intended to achieve. If this happens, both science and society will have missed an opportunity.

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