



THE WEEKLY CLOSER

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"You'll find more dissent at a North Korean political rally than in this program, which would have benefited from contrarian views, perhaps from MIT's Richard S. Lindzen or William Gray, the world's foremost expert on hurricanes and a critic of global-warming orthodoxy. Both are serious scientists, yet neither appears to be in Brokaw's Rolodex."

Brokaw Warns of Melting Glaciers, Greenhouse Gases: TV Review
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NRC REPORT: EPA MUST IMPROVE RISK ASSESSMENT

On Tuesday, Chairman Inhofe welcomed the National Research Council (NRC) of the National Academy of Sciences (NAS) new report, "Health Risks from Dioxin and Related Compounds: Evaluation of the Environmental Protection Agency (EPA) Reassessment." The report comes two weeks after the Government Accountability Office (GAO) released a report, "[Human Health Risk Assessment: EPA has Taken Steps to Strengthen Its Process, but Improvements Needed in Planning, Data Development, and Training.](#)" Both reports find that the EPA must take additional significant steps to improve risk assessment.

"Eighteen leading scientists unanimously concluded in the NRC report that the EPA failed to clearly state the uncertainty that is present in its dioxin risk reassessment, leading to a 'false sense of precision in the conclusions' of that assessment," Chairman Inhofe said. "Further, the NAS report criticized EPA for not using certain scientific methods, underscoring a recent GAO report finding that EPA staff are often reluctant to embrace new science.

"As Chairman, I am concerned that the failure to implement the recommendations by the GAO, and now NAS, will undermine and further erode the credibility of the scientific process at EPA. The public counts on EPA to provide reliable scientific conclusions in an open and honest manner, and these reports call that into question. As Chairman of the Committee that oversees the EPA, I am committed to holding EPA accountable to these recommendations."

REAUTHORIZATION WILL BE
CONSIDERED ON THE SENATE
FLOOR NEXT WEEK.

July 19, 2006

Full committee hearing on
the science and risk
assessment behind the
Environmental Protection
Agency's proposed
revisions to the particulate
matter air quality
standards.

9:00 am

SD-628

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The NRC report can be found on the [Web site of the National Academy of Sciences](#).

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BROKAW'S OBJECTIVITY COMPROMISED IN GLOBAL WARMING SPECIAL

The EPW Majority Press office on Tuesday issued a press release stating that former NBC News anchor Tom Brokaw's lack of objectivity and balance on the issue of global warming appears to have tainted his upcoming Discovery Channel documentary called: "Global Warming: What You Need To Know" airing on July 16.

Brokaw's partisan past and his reliance on scientists who openly endorsed Democrat Presidential candidate John Kerry in 2004 and who are financially affiliated with left wing environmental groups, has resulted in a documentary that is devoid of balance and objectivity.

Former Colorado state climatologist (as of July 1, 2006) and professor emeritus of atmospheric sciences at Colorado State University, Senior Research Scientist in the Cooperative Institute for Research in Environmental Sciences (CIRES), and a Senior Research Associate position in the Department of Atmospheric and Oceanic Sciences (ATOC). Roger Pielke, Sr, viewed an advance copy of the Brokaw's special and declared that it contained "errors and misconceptions."

"The show relied on just a few scientists with a particular personal viewpoint on this subject which misleads the public on the broader view that is actually held by most climate scientists," [Pielke wrote on July 7](#).

Unfortunately, viewers should not expect a scientifically balanced view of the climate from the former NBC newsman. Brokaw who has been affiliated with the Sierra Club and has recently lavished praise on former Vice President Al Gore's film "An Inconvenient Truth." Brokaw, who called Gore's film "stylish and compelling", has called the science behind catastrophic human caused global warming "irrefutable." Brokaw also chose to ignore all 60 scientists who wrote to Canadian Prime Minister Stephen Harper in April of 2006 questioning the science of climate alarmism.

Brokaw's partisan environmental credentials are so firmly established that the former anchor was offered a job in the Clinton-Gore Administration to be the director of the National Park Service in 1993. According to *The Washington Post*, Brokaw 'very seriously' considered the offer at the time but decided to remain with NBC News. "I have a lot of friends in the environmental movement," Brokaw said. Brokaw's wife also serves as vice president of the environmental group Conservation International.

In his new Discovery Channel special, Brokaw does not disclose the potential and known biases of the scientists he chose to feature.

For example, Brokaw presents NASA's James Hansen as an authority on climate change without revealing to viewers the extensive political and financial ties that Hansen has to Democratic Party partisans. Hansen, the director of the agency's Goddard Institute for Space Studies, [received](#) a \$250,000 grant from the charitable foundation headed by former Democrat Presidential candidate John Kerry's wife, Teresa Heinz.

Subsequent to the Heinz Foundation grant, Hansen publicly [endorsed](#) Democrat John Kerry for president in 2004, a political endorsement considered to be highly unusual for a NASA scientist.

Hansen also has acted as a consultant to Gore's slide-show presentations on global warming, on which Gore's movie is based. Hansen has actively promoted Gore and his movie, even appearing at a New York City Town Hall meeting with Gore and several Hollywood producers in May.

Hansen wrote in an article in the journal [Natural Science](#) in 2003 that the use of "extreme scenarios" to dramatize climate change "may have been appropriate at one time" to drive the public's attention to the issue --- a disturbing admission by a prominent scientist.

Brokaw's special also features Michael Oppenheimer, a professor of geosciences and international affairs at Princeton University. Brokaw once again fails to disclose Oppenheimer's partisan and ideological affiliations to viewers.

Brokaw fails to note that Oppenheimer actively campaigned against President George Bush in 2004 and, like Hansen, endorsed Senator Kerry for president. Oppenheimer was affiliated with the partisan group Scientists and Engineers for Change and the green group Environment2004 financially bankrolled in part by the Heinz Foundation where Teresa Heinz-Kerry serves as the chairwoman. Environment2004, which put up [billboards](#) in Florida mocking President Bush in the final months of the 2004 presidential election.

Viewers of Brokaw's program will not be informed that Oppenheimer personally donated to the group Environment2004, a group that was so partisan it encouraged visitors to their Webpage to "get involved" in defeating President Bush by playing a game called

In addition, Oppenheimer also serves as a "science advisor" to the left wing and politically charged group [Environmental Defense](#) and was a co-founder of Climate Action Network.

Finally, Oppenheimer appeared with Hollywood activist Leonardo DiCaprio and Gore's movie producer Laurie David on Oprah Winfrey's talk show.

Brokaw's Special 'a disappointment'

Brokaw's special has led climatologist Pielke to [conclude](#) that Brokaw presents "a narrow view of the issue of natural and human climate variability and change."

“It is a disappointment that this show, hosted by Tom Brokaw, did not use the two hours to present a balanced view on the spectrum of perspectives on the human influences on the climate system,” Pielke wrote.

Pielke has authored more than 275 peer reviewed journal articles on climate. According to Pielke, Brokaw also presents flawed science in his program.

“Rapid glacial retreat is not a new observation, nor are all glaciers retreating. The Grand Pacific glacier in Glacier Bay National Park, for example, retreated 48 miles from 1794 to 1879, and a further 17 miles by 1916. Large masses of glacial ice breaking from the Antarctic continent are not a new feature of this region,” Pielke noted.

The Discovery Channel, the BBC and NBC News Productions jointly produced Brokaw’s global warming special.

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CHAIRMAN INHOFE’S OPENING STATEMENT: SUBCOMMITTEE HEARING ON PARTICULATE MATTER STANDARDS

JULY 12, 2006

Mr. Wehrum, thank you for coming to testify to the Committee to provide us with your views on the current national ambient air quality standards review of particulate matter and your proposal to tighten the current daily standard. I would make the point that I do not believe the science justifies ratcheting down the regulations at this time, given that the estimated risk today is less than what was estimated in 1997 under Carol Browner when the current standard was set.

I am also troubled that Environmental Protection Agency (EPA) has been selective in what studies it has chosen to give weight to in this review, thus skewing the results by downplaying studies which show the current standard is sufficiently strict to protect human health with an adequate margin of safety.

But we will examine the science issues in detail during the hearing next Wednesday. Today, we are focused on better understanding the process by which EPA makes these determinations, the history of past decisions, and impacts caused by possible tightened standards. I believe the economic impacts will be severe.

I am troubled that EPA has not provided to the public or this oversight Committee a comprehensive regulatory impact analysis. While a NAAQS review is based on health considerations by statute, Congress wrote the law and is responsible not only for overseeing its execution, but for evaluating whether the way it is crafted is appropriate in light of its unintended consequences.

Moreover, any assessments of health benefits can only be made with an understanding of the economic consequences because there is a clear link between economic vitality and human health. In short, wealth is health. Poorer communities often suffer from inadequate infrastructure and that in turn will be exacerbated if these areas are designated nonattainment unnecessarily. As we have heard in the past, when electricity prices rise, the poor and elderly in inner cities such as Chicago, turn off their air condition and scores die each summer because they can't afford their A/C. As local officials know all too well, additional burdens placed on new manufacturing facilities discourage them from locating in these regions.

It is my belief that we should be judicious in selecting what standards we impose on our cities and states, taking into account what would be required to fully attain these standards by the deadline set by the Clean Air Act, and then enforce these standards to ensure public health. It makes no sense to set unnecessarily and unrealistically stringent requirements, but then to excuse areas which will not comply because it is expensive while others that take their commitment seriously suffer job losses and slower growth. I am thinking in particular of California, which has consistently failed to meet previous standards and has continued to receive exemptions.

As a former mayor, I know that air regulations – and the increased control burdens that accompany them for many areas – can be an important factor in decisions by companies as to where to locate their facilities.

Many counties, through the implementation of current regulations such as the diesel rule, clean air interstate rule, and others, will come into compliance with current health standards. Yet these areas will be designated nonattainment with the new standards, and thus forced to impose additional controls and to remain unattractive for new business investments. By moving the goal posts, we upset the ability of these communities to pursue their compliance strategies and keep them in an endless loop that depresses their economies.

I know some of my colleagues don't think we should be holding today's hearing, but it would be irresponsible if this Committee did not conduct thoughtful oversight of not only the science-health issues, as we will less than a week from today, but also the potential economic impacts from these regulations. We have to look at both sides and I applaud Chairman Voinovich for holding today's hearing.

Thank you.

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IN CASE YOU MISSED IT...

Wall Street Journal

Hockey Stick Hokum

July 14, 2006; Page A12

It is routine these days to read in newspapers or hear -- almost anywhere the subject of climate change comes up -- that the 1990s were the "warmest decade in a millennium" and that 1998 was the warmest year in the last 1,000.

This assertion has become so accepted that it is often recited without qualification, and even without giving a source for the "fact." But a report soon to be released by the House Energy and Commerce Committee by three independent statisticians underlines yet again just how shaky this "consensus" view is, and how recent its vintage.

The claim originates from a 1999 paper by paleoclimatologist Michael Mann. Prior to Mr. Mann's work, the accepted view, as embodied in the U.N.'s 1990 report from the Intergovernmental Panel on Climate Change (IPCC), was that the world had undergone a warming period in the Middle Ages, followed by a mid-millennium cold spell and a subsequent warming period -- the current one. That consensus, as shown in the first of the two IPCC-provided graphs nearby, held that the Medieval warm period was considerably warmer than the present day...

The trouble is that there's no reason to believe that Mr. Mann, or his "hockey stick" graph of global temperature changes, is right. Questions were raised about Mr. Mann's paper almost as soon as it was published. In 2003, two Canadians, Ross McKittrick and Steven McIntyre, published an article in a peer-reviewed journal showing that Mr. Mann's methodology could produce hockey sticks from even random, trendless data....

The three researchers -- Edward J. Wegman of George Mason University, David W. Scott of Rice University and Yasmin H. Said of Johns Hopkins University -- are not climatologists; they're statisticians. Their task was to look at Mr. Mann's methods from a statistical perspective and assess their validity. Their conclusion is that Mr. Mann's papers are plagued by basic statistical errors that call his conclusions into doubt. Further, Professor Wegman's report upholds the finding of Messrs. McIntyre and McKittrick that Mr. Mann's methodology is biased toward producing "hockey stick" shaped graphs...

In addition to debunking the hockey stick, Mr. Wegman goes a step further in his report, attempting to answer why Mr. Mann's mistakes were not exposed by his fellow climatologists. Instead, it fell to two outsiders, Messrs. McIntyre and McKittrick, to uncover the errors.

Mr. Wegman brings to bear a technique called social-network analysis to examine the community of climate researchers. His conclusion is that the coterie of most frequently published climatologists is so insular and close-knit that no effective independent review of the work of Mr. Mann is likely. "As analyzed in our social network," Mr. Wegman writes, "there is a tightly knit group of individuals who passionately believe in their thesis." He continues: "However, our perception is that this group has a self-reinforcing feedback mechanism and, moreover, the work has been sufficiently politicized that they can hardly reassess their public positions without losing credibility."

In other words, climate research often more closely resembles a mutual-admiration society than a competitive and open-minded search for scientific

knowledge. And Mr. Wegman's social-network graphs suggest that Mr. Mann himself -- and his hockey stick -- is at the center of that network.

Mr. Wegman's report was initially requested by the House Energy Committee because some lawmakers were concerned that major decisions about our economy could be made on the basis of the dubious research embodied in the hockey stick. Some of the more partisan scientists and journalists howled that this was an attempt at intimidation. But as Mr. Wegman's paper shows, Congress was right to worry; his conclusions make "consensus" look more like group-think. And the dismissive reaction of the climate-research establishment to the McIntyre-McKittrick critique of the hockey stick confirms that impression.

Click [here](#) for the full text of the editorial.

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Bloomberg

BROKAW WARNS OF MELTING GLACIERS, GREENHOUSE GASES: TV REVIEW

Dave Shiflett is a critic for Bloomberg News. The opinions expressed are his own.

July 14

Tom Brokaw's special on global warming claims to have "no agenda," though some viewers will quickly suspect he's out to make us sweat.

If mankind doesn't change its polluting ways, New Yorkers will soon be snorkeling to work. That's the basic message of "Global Warming: What You Need to Know," which airs on July 16 at 9 p.m. New York time on the Discovery Channel.

Brokaw, like former Vice President Al Gore and many prominent scientists, is convinced that carbon-dioxide emissions are the main cause of global warming and that without serious change we should expect gondoliers in San Francisco. The former NBC anchorman delivers the bad news in his trademark solemn monotone and travels widely to marshal his argument...

No Dissent

Then there's the U.S., world leader in CO₂ emissions thanks to our love of the internal-combustion engine, large appliances and jet travel.

Brokaw relies largely on a handful of experts in the two-hour show, particularly NASA's James Hansen and Princeton professor Michael Oppenheimer. Both support Brokaw's view of global warming and consider the scientific debate closed.

Brokaw scoffs at the notion that there are "any remaining doubts humans are behind temperature rises," while Hansen says "99.5 percent of scientists say we know what's going on."

You'll find more dissent at a North Korean political rally than in this program, which would have benefited from contrarian views, perhaps from MIT's Richard S. Lindzen or William Gray, the world's foremost expert on hurricanes and a critic of global-warming orthodoxy. Both are serious scientists, yet neither appears to be in Brokaw's Rolodex.

Kyoto Protocol

Brokaw does ask Oppenheimer why critics "refuse to believe it's a fact." Oppenheimer says some may find the issue too "frightening," while others have a "financial interest" in the status quo. In other words, critics are stooges for industry. Does that mean Brokaw is a stooge for environmentalists?

While the show claims some of the damage is "irreversible," Brokaw holds out hope that personal and political action can bring about significant change. Americans can greatly reduce their CO2 output by driving smaller cars, taking the bus, using fluorescent light bulbs and exercising a bit more thermostat discipline.

Brokaw praises the Kyoto Protocol, which sets goals for reducing greenhouse-gas emissions in industrialized countries. The Bush administration opposes the agreement, saying it would hurt the U.S. economy and not have much impact in heavily polluting countries like China...

If we don't act soon, Brokaw says, we may reach a "tipping point" of no return: New York and other coastal cities will be submerged, while Bangladesh will vanish beneath the waves. We're also told there could be mass extinction of wildlife, a plague of disease-bearing insect swarms, extreme weather and famine causing mass starvation.

A powerful presentation, to be sure, though certainly one with an agenda.

Click [here](#) for the full text of the Review.

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National Post

Misled again: The Hockey Stick climate

History is flawed, and so is the process by which its author's claims have been adjudicated

By Steve McIntyre and Ross McKittrick

Steve McIntyre is a retired mineral exploration businessman who operates www.climateaudit.org

Ross McKittrick is an associate professor of economics at the University of Guelph.

Wednesday, July 12, 2006

Many people have heard the claim that the 1990s were the warmest decade of

the millennium and that 1998 was the warmest year. Environment Canada headlined them on pamphlets mailed across the country a few years ago. These claims interested us in verifying exactly how scientists were able to assert so confidently that the late 20th century was warmer than when the Vikings were farming Greenland (the Medieval Warm Period). Last year, the National Post profiled our published research, which had identified major flaws in what was called the Hockey Stick -- a graph prominently featured in a report from the Intergovernmental Panel on Climate Change (IPCC) in 2001...

In February, 2006, the NAS appointed a panel of 12 eminent academics involved in climate science but not directly involved in the temperature reconstructions of the past 1,000 years. They were not an entirely "independent" panel, as some were occasional co-authors with the Hockey Stick authors. But even this limited independence was a major departure from procedures of the IPCC, which permits authors actively involved in scientific controversy to summarize the research -- even if they end up acting as reviewers of their own work!

In March, 2006, the NAS panel held meetings in Washington at which we made a presentation (along with Mann and seven other scientists in the field).

On July 6, the panel issued a 155-page report, which managed the delicate feat of accepting virtually all the criticisms of the Hockey Stick while still saying polite things about it. A European climate scientist, who understood the balancing act, wrote us afterwards to point out it was the most severe criticism of the Hockey Stick nowadays possible.

At the NAS panel, we said that Mann's principal components were biased toward producing hockey stick-shaped series; the NAS agreed. We said that bristlecones were not a reliable temperature proxy; the NAS agreed and said they should be "avoided." We said that Mann's reconstruction failed important verification tests; the NAS agreed. We said that more than one test statistic should be reported when assessing statistical validity; the NAS agreed. We said that current methods underestimated the inherent uncertainty; the NAS agreed. On and on. On no occasion was any claim of ours refuted.

Our original articles argued that Mann's data and methodology did not permit him to claim with confidence that 1998 was the "warmest year" of the millennium or that the 1990s were the warmest decade. The NAS panel even agreed with this. After observing that little confidence could be placed in reconstructions before 1600, they stated: Even less confidence can be placed in the original conclusions by Mann et al. (1999) that "the 1990s are likely the warmest decade, and 1998 the warmest year, in at least a millennium ..."

Based on some other studies, they conceded that Mann's reconstruction was still "plausible" but, contrary to the IPCC, they said it was impossible to put confidence intervals on this opinion.

The House science committee had asked the NAS panel to report on whether paleoclimate authors were withholding data and methods. The panel chairman said this topic was "too big" for them to answer. The NAS apparently plans a

new panel on the generic subject of availability of scientific data.

The NAS panel drew attention to other recent studies claiming that the 20th century was warmer than the Medieval Warm Period. We've attempted to replicate these other studies as well, only to run into one obstacle after another in identifying data and methods -- similar to the problems that led to the original congressional questions about the Mann study. In one case, the authors even refused to identify the sites from which data was collected for their study!

Despite these pointless obstacles, we know enough about the "other studies" to be confident that none of them meets the methodological standards now recommended by the panel. In fact, somewhat remarkably, two of the most recent studies even continue to use Mann's discredited principal components series.

In its press release, the NAS headlined that the present era is the warmest in 400 years. However, long before anyone had ever heard of the IPCC or the Hockey Stick, this was the prevailing view of scientists, who coined the term Little Ice Age to refer to the period leading up to modern warming. It isn't news to say the average temperature is higher now compared to the past 400 years. It was news in 2001 when the IPCC claimed with confidence that the 1990s were the warmest in 1,000 years. The real news from the NAS is that it disagreed and withdrew any claim to confidence prior to 1600.

At the NAS press conference, the panel was asked about "overselling" of the warmest-in-a-millennium claim and whether any lessons could be learned. Panel chairman Gerry North noted that the Mann paper was very recent when this claim was made and observed that it was "very dangerous to pull one paper out of the literature fresh before it's had time to season." However, the panel did not comment on IPCC procedures that invited this problem.

The IPCC lead author who selected Mann's reconstruction for prominent display in the review of millennial temperature history was none other than Mann himself. At the time, he was a fresh and ambitious PhD, an odd choice to write the "consensus" review of climate history.

The system that allows such conflicts of interest has been severely criticized by some senior climate scientists, including Hans von Storch of Germany. However, the flawed process remains unchanged for the next IPCC assessment report, due in January, 2007. As reviewers of that report, we have expressed concerns to the IPCC about prominent use of graphics and empirical results from the lead authors' own freshly published papers, which have not been in print long enough to have undergone adequate, independent review and assessment and, in some cases, not even long enough to meet IPCC publication deadlines.

In our opinion, most of the press coverage to date missed one of the biggest stories.

When asked at the press conference about lessons that could be learned,

panelist Kurt Cuffey said the prominent use of the Hockey Stick graphic by the IPCC sent "a very misleading message." He said the over-selling did not come from the "science community," but from the "interaction of part of the science community with the broader public discourse and in particular with the way the [Mann et al.] reconstruction was used by the IPCC in the 2001 report."

But haven't we been told that the IPCC is the "science community?" If a knowledgeable observer such as Cuffey distinguishes the two, blaming the IPCC while defending the "science community," shouldn't we be trying to figure out exactly how the IPCC process ended up sending out a "very misleading message?" And if the process has not been fixed -- and there is no evidence that it has -- how do we know that the IPCC won't send another equally "misleading" message in the upcoming Fourth Assessment report?

Click [here](#) for the full text of the Op/Ed.

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CARBON DIOXIDE AND TEMPERATURES: ICE CORE CORRELATIONS

By Lubos Motl, Physicist, Harvard University Assistant Professor

Friday, July 07, 2006

The movie of the former future U.S. president has impressed many viewers: it is an optimized promotion of the alarmist understanding of the global climate. Moreover, it shows a more attractive Al Gore than the old Al Gore whom we know from the 2000 campaign.

A few years ago, Gore visited Harvard and with Jochen Brocks, my fellow Fellow, we went to see him. Jochen is a leftist, of course, but he claimed that Gore looked repulsive, unhuman, and evil. I am a rightist but paradoxically, I never had terribly serious complaints about Gore's looks.

Don't get me wrong: I certainly think that George Bush is more human and looks like a more trustworthy and more human being than Al Gore, and I wish him the best on his 60th birthday! Nevertheless, their design is not the primary thing that determines my political and scientific opinions.

That's why I am going to discuss more important issues, namely the scientific ones. The most powerful argument in Al Gore's movie were the graphs showing the correlation between the carbon dioxide concentrations and the temperature extracted from ice data in the last 650,000 years.

No doubt, the correlation is nearly perfect. No doubt, the climate on the Earth in the 650,000 years before the industrial revolution can be described very accurately by a single function of time. But if two things, A and B, are correlated, does it imply a particular causal relationship?

In classical physics, the answer is essentially Yes. The perfect correlation must either mean that A is caused by B, or B is caused by A, or both A and B are

caused by something else, namely D. It is completely clear what is Al Gore's answer: the temperature was determined by the concentrations of carbon dioxide. That's why all of us are going to die in a hell by The Independence Day 2016 unless all of us accept Al Gore as the ultimate savior, neglecting that he is not a Christ but rather an anti-Christ as Rae Ann has noticed. ;-)

According to Gore, the concentration of carbon dioxide was evolving according to its free will and does not require any explanation. The concentration could have been caused by oil companies owned by various mammoths. At any rate, Al Gore does not have to answer why the carbon dioxide concentration was changing in the first place. He does not have to answer because he is the savior.

Now imagine that you have the freedom to think about these things rationally, as opposed to metareligious quasithinking under the influence of crazy brainwashing. First, let us try with the following exercise.

Imagine that you find out that whenever you smell methane in the living room, you can also find a certain person in the same room. The correlation is nearly perfect. What is the conclusion? Someone could propose that the methane in the room is the cause whose presence creates the person. I would propose an "alternative" explanation: it is the person who creates the methane whenever he is in the room. Choose any explanation you want.

I picked methane because it will play a role in the main example, too.

You should notice that the graph above shows a perfect correlation not only between the temperature (A) and the carbon dioxide concentration (B), but also between the temperature (A) and the methane concentration (C). What is the cause and what is the consequence if three quantities are correlated so nicely?

Note that the answer can't be unique a priori. At most one of the three quantities - A,B,C - can be the primary cause. Which one? Clearly, if you choose one of the gases, your explanation will be asymmetric and it won't explain all the correlations in a satisfactory way. If you say that the carbon dioxide concentration determines the temperature, you must still explain why the methane concentration (and other concentrations such as N₂O, for that matter) follows the same time dependence. You will clearly need a different explanation. If the CO₂ greenhouse effect is primary, you can't explain why the concentrations of CO₂ and CH₄ coincide. Unless you find another inevitable explanation of this subtlety, your theory will be very weak.

Actually, we have more than logical arguments of this kind. We know very well why the causal relation is the opposite one. Imagine that you have a small bottle with 385 milliliters of Coke. It originally contained 4 volumes of carbon dioxide: if you extract carbon dioxide from one bottle of Coke to empty bottles at normal conditions, you will fill four bottles. I had to learn these things when we discussed various thermodynamical issues with Brian Greene when he was writing his second excellent book. Now, imagine that the CO₂ has leaked a bit and there is only 1 volume of CO₂ left in the bottle.

Take this bottle to your car whose internal volume is 1 cube meter i.e. 1 million milliliters. The carbon dioxide from the Coke makes 385 ppm (parts per million) of the volume of your car - just like the ratio in the atmosphere.

Suddenly, you notice a strange correlation between the concentration and character of the bubbles in the bottle on one side, and the temperature in your car on the other side. You will have two possible interpretations. Either the leaking CO₂ in the Coke determines the temperature in your car because the Coke with more CO₂ is a bit darker for the Sun that is shining to your windows (or for the infrared rays reflected from the chairs), or the temperature in your car determines how the bubbles behave in the bottle. Which explanation do you choose? ;-)

I think that any sane person obviously chooses the temperature as the cause and the concentrations as a consequence. Everyone who has ever tried to open a bottle of lemonade during a hot day must know why. Hot liquids are not able to absorb gases so well. Warmer oceans are not able to absorb atmospheric gases either. Clearly, if the temperature goes up, less carbon dioxide and methane can be bound to the ocean waters, which is why their concentration in the atmosphere goes up.

This explanation obviously works both for CO₂ as well as CH₄ and other gases that could appear such as N₂O.

There are many other mechanisms that contribute to the correlation between the temperature and the concentrations - for example, the growth of plants and animals (consumers and producers of CO₂) depend on temperatures - but all the most important contributions to the correlation work because the temperature is primary and the concentrations are secondary. If you think for a while, you will realize that the example with the car is actually pretty much realistic and the ability of water to bind gases is much stronger an effect than the greenhouse effect.

Even if you did not believe that conclusion and preferred the Al Gore's explanation that methane and CO₂ create the person or the warming, you will have problems to predict the future. While the correlation between A,B,C was nearly perfect in the past, we have violated this perfect harmony because we produce CO₂ and CH₄ at different rates. We can deliberately do so. You won't get any natural prediction for the temperature because the correlation data itself can't tell you how much the two gases contribute.

You should better look at physics, and physics tells you quite clearly that the ability of water to bind gases is more important an effect for the correlation than the greenhouse effect. The temperature is the primary cause of secondary quantities such as various concentrations - and I would expect advocates of a "global warming" theory to agree with me that the temperature should be the fundamental quantity. This description explains all the correlations and not just some of them.

Much like all other potential explanations, it still says nothing about the origin of the "primary" quantity, in this case temperature. If temperature is indeed the primary and fundamental quantity, why was it changing the way it did?

There are many contributions to the temperature variations we partially know - such as various periodic astronomical cycles or solar variation - and there are many others that we don't know well or we don't know at all - such as nonlinear chaotic effects in the formation of different kinds of clouds. But I think that even though we don't know some things for sure and in their entirety, we can still be pretty much sure that certain hypotheses are almost certainly incorrect. The hypothesis that the CO₂ concentration was primary and it determined the CH₄ concentrations and the temperature is one of such extremely unlikely hypotheses.

And that's the memo.

Update: there exists a simpler way to show that the temperature was the cause and the carbon dioxide was a consequence. If you look carefully at the graphs, you will see that the carbon dioxide concentrations lag behind the temperature by 800 years. This was explained in Scientific American as well as [RealClimate](#) where they also essentially claim that you can easily produce a time machine as long as you want to travel only 800 years - or anything less than 5,000 years - to your past. ;-) I leave it up to you whether you learn just the hard data or also their bizarre interpretation, and whether you will think that the RealClimate people are sane according to this interpretation. I don't think so.

Click [here](#) for the full text.

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