

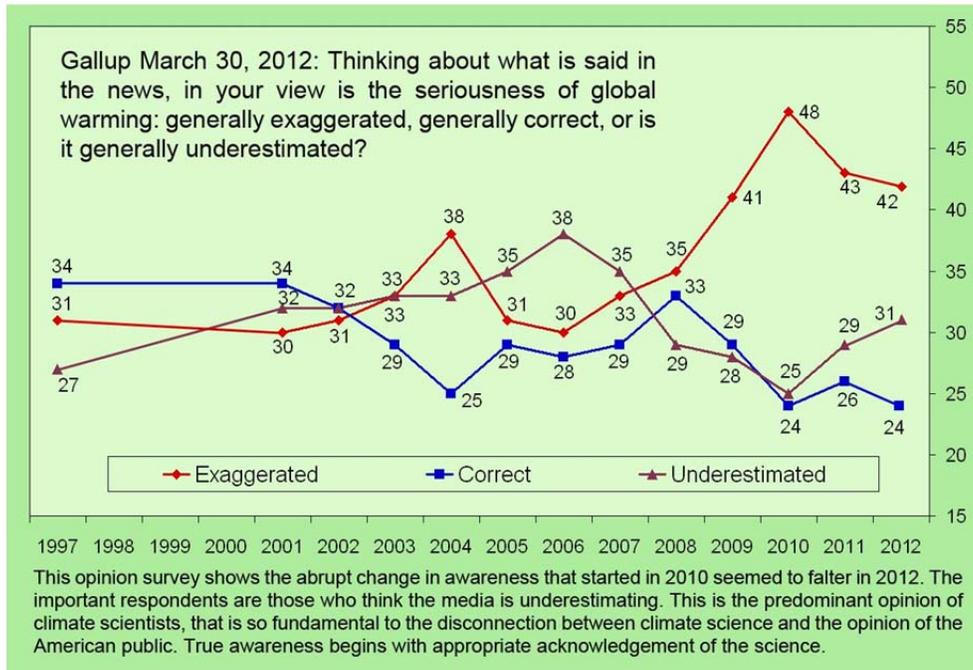
The Climate Change Awareness Drought is Over

Part One: It's Time to Change the Tone



This three part series explores the recent change in public awareness of climate change issues, the causes behind the change, biases, the latest science showing how much our climate has already changed, and academic support for a vigorous change in messaging.

May 17, 2012, Austin, Texas: *Polls, surveys and academic evaluations of public opinion are showing a shift in our collective understanding of climate change. Since the turn of the century, belief in the causes of and reality of climate change has fluctuated wildly at levels below those seen in the 1990s. Some of this change has been caused by political cues. These are the messages that we get from our leaders and interest groups motivated to “advertise” their message. Change in awareness is also caused by actual climate extremes. Because the extremes are here to stay and there is a growing distrust of the “voices” that advertise the message being disproven by the extremes, the increasing change in awareness is grounds for a shift in advocacy policy towards how we urge for climate change action.*



In a 2008, George Mason University says that only 60 percent of climate scientists believed that Earth was warming in 1991, compared to 97% today. Public understanding of climate issues was fair to poor until the Bush Administration came into office and awareness significantly declined. But President Clinton is not blameless because he first failed to do something about Senate Resolution 98 (in 1997), that refused to ratify the Kyoto Protocol, and for four more years did not sign.

Bush's subsequent failure to sign and then his premeditated campaign to derail international climate change policy work gave American's permission to deny. *The United States was the only country in the world except for Afghanistan and South Sudan that did not sign Kyoto.*

Beginning in 2005 we saw a string of unprecedented blizzards in the northeastern U.S. and northern Europe. The cold weather convinced many that climate change was indeed as the voices were saying and they could continue to disregard the message from scientists. In 2009 more political cues penetrated the media deeply with the theft of climate scientists' emails attention drawn to a single error in the 2007 IPCC (Intergovernmental Panel on Climate Change) Report (Known as Himalayagate), and slanderous campaign discrediting the 2007 IPCC reporting on the Amazon was faulty (Amazonagate).

Opinions About Global Warming: 2006-2011

	2006	2007	2008	2009	2010	2011
Is there solid evidence the earth is warming?						
Yes	77	77	71	57	59	63
Because of human activity	47	47	47	36	34	38
Because of natural patterns	20	20	18	16	18	18
Don't know	10	10	6	6	6	6
No	17	16	21	33	32	28
Mixed evidence/Don't know	<u>6</u>	<u>7</u>	<u>8</u>	<u>10</u>	<u>9</u>	<u>9</u>
	100	100	100	100	100	100
How serious a problem is global warming?						
Very serious	43	45	44	35	32	38
Somewhat serious	36	32	29	30	31	27
Not too serious	11	12	13	15	16	16
Not a problem	9	8	11	17	18	17
Don't know	<u>1</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>
	100	100	100	100	100	100

PEW RESEARCH CENTER Nov. 9-14, 2011. Figures may not add to 100% because of rounding.

The climate science community hoped things would change with Obama's election in 2008. Their message about climate change, although with muted action, was radically different from the Bush Administration's message. Political cues had radically changed across the country and even the failed Copenhagen Summit kept

climate change in the news and was laying the foundation for a change in awareness. In 2010 it finally happened. The press was paying attention to scientific findings showing that blizzards and snowtastrophes were associated with an unprecedented weather pattern in the Arctic, caused by climate change, sending abnormally severe winter weather far south on a berserk jet stream.

Then unprecedented weather simply exploded in 2010 with the Russian heat wave and Pakistan floods and in 2011 the extremes went off the charts. A study led by Anthony Leiserowitz out of Yale released in February 2012 tells us:

A large majority of Americans believe that global warming made several high profile extreme weather events worse, including the unusually warm winter of December 2011 and January 2012 (72%), record high summer temperatures in the U.S. in 2011 (70%), the drought in Texas and Oklahoma in 2011 (69%), record snowfall in the U.S. in 2010 and 2011 (61%), the Mississippi River floods in the spring of 2011 (63%), and Hurricane Irene (59%).

Gallup: March 30, 2012

Americans' Worries About Global Warming Up Slightly

But remains much lower than the previous high of 72% in 2000

by Frank Newport

PRINCETON, NJ -- Fifty-five percent of Americans worry a great deal or a fair amount about global warming, up from 51% in 2011, but still significantly lower than the previous high of 72% in 2000.

How much do you personally worry about global warming?

■ % Worry a great deal/a fair amount



Gallup first asked Americans to rate their concern about "the 'greenhouse effect' or global warming" in 1989, and has measured it as part of the annual Gallup Environment survey every March since 2001. An average of 60% of Americans since 1989 have worried a great deal or a fair amount about global warming, but concern has fluctuated significantly over this time period. After increasing in the late 1990s and rising to a high of 72% in 2000, worry declined to a low of 51% in 2004. It picked up again in 2005, reaching 66% in 2008, before falling again in recent years -- including another 51% reading in 2011.

It is possible that this year's uptick signals the start of a new period of increased worry, but the high level of variability in this trend makes such predictions difficult.

<http://www.gallup.com/poll/153653/Americans-Worries-Global-Warming-Slightly.aspx?version=print>
April 5, 2012

For twenty years, the vast majority of climate scientists have been warning us that changes like these would happen if we did not reduce our emissions. We did not and they did. Now these same scientists (and more) are warning us that, the extremes will continue to worsen even if we do stop all emissions, and a longer delay means more danger than otherwise. The message is getting through.

The Yale study tells us that over the past several years, Americans say the weather in the U.S. has been getting worse rather than better by a margin of over 2 to 1 (52% vs. 22%). The National Climatic Data Center tells us that 14 weather disasters costing more than a billion dollars each (inflation

adjusted) happened in 2011. This is 56 percent more than the previous record of 9 set in just 2005 and 3 times as many as the average of the last decade (4.8 per year, 3.8 in the 1990s).

Peer reviewed literature is now coming out that shows, in addition to the unprecedented blizzards, things like the Moscow heat wave in 2010, the Pakistan floods in 2010, the European heat wave of 2003 and the Texas heat wave of 2011 (in-press) were caused by climate change. The National Center for Atmospheric Research

tells us that across the planet high temperature records are happening twice as often as low temperature records. In a stable climate this ratio should be one to one. The Yale study goes on:

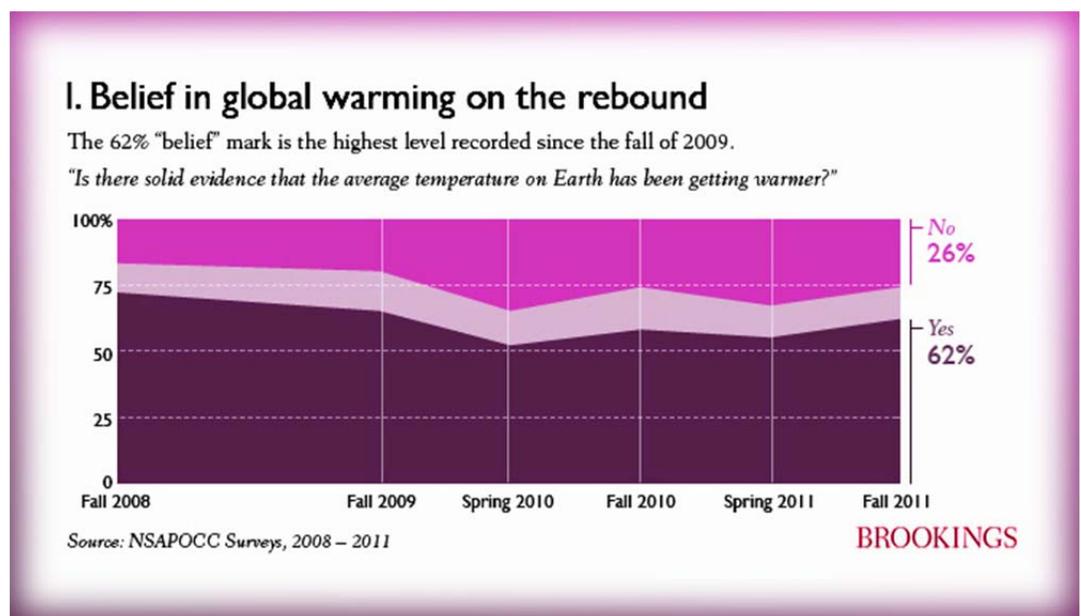
About half of all Americans say that heat waves (53%), droughts (46%) and very heavy rain storms (43%) have become more common in their local area over the past few decades. People in the Northeast and Midwest are more likely to report that heavy rainstorms have become more frequent in their local area, while people in the South and West are more likely to report that droughts have increased. Many Americans also say that extreme weather has increased the occurrence of other problems in their local area, including harm to crops (46%), floods (39%), problems with air quality (38%), forest fires (34%), problems with water quality (31%), and problems with transportation (23%). People in the Northeast and Midwest are more likely to report that local floods and harm to crops have become more frequent, while people in the South and West are more likely to report that forest fires in their local area have become more frequent.

The shift in awareness is very encouraging and oddly, even more encouraging is the concept that the shift seems quite likely to be more or less permanent because the number of unprecedented weather events will very likely continue to increase. The Brookings Institute tells us the change in awareness began in the spring of 2010.

American's environmental priorities have shown global warming at the very bottom since at least 2004. But it's the relative position of the issue that counts however (and of course the other issues being measured). When we compare March 2011 to March 2012 we see that those who "worry a great deal" about global warming have increased 5 percent to 30 percent. The lowest it has ever been in this record that dates back to 1989 is 24 percent in 1997.

Gallup's 1997 to 2011 poll about public belief in the seriousness of global warming shows a four percent increase from 2010 to 2011. Pew shows a six percent increase in the belief that evidence is "solid" from 2010 to 2011. Rasmussen is up four to six percent since 2010. Another Gallup poll from 1989 to 2011, about how much individuals personally worry about climate change, is also up four percent in 2011.

The Brookings Institute shows a ten percent increase in the belief of solid evidence showing Earth's temperature has been getting warmer in the 18-month period between spring 2010 and fall 2011. And finally, once again looking at Gallup's long-term list of American's environmental concerns, global warming is still on the bottom but that five point increase from 25 to 30 percent is a 20 percent increase in one year.



Overall this is a solid three to five percent annual increase (or more), which is a very healthy change in overall public perception. Considering that this rate will likely increase, in just two or three years public sentiment could be at an all-time high.

Biased? (The science and/or the polls and petitions and “is this weather or climate we are talking about?”)

Non-believers out there would say my evaluation is one-sided or cherry picked and that I should be looking at “other” sources of information and that public belief is a consequence of the climate scientists’ or government conspiracy. So looking at the three major treatise of the dissenter group, the most astonishing is the Oregon Institute of Science and Medicine Global Warming Petition Project with signatures of more than 31,000 scientists.

The original petition in 1998 that collected 17,000 signatures included a 12-page peer review-like paper that looked exactly like a *U.S. Proceedings of the National Academy of Sciences* (PNAS) publication complete with date, volume and page numbers (it was not a published paper of any kind). The author of the petition, Frederick Seitz (founder of the Marshall Institute), is a former president of the National Academy of Sciences (NAS). The NAS has taken the extraordinary step of disassociating itself from the Oregon Petition in this statement:

The petition was mailed with an op-ed article from The Wall Street Journal and a manuscript in a format that is nearly identical to that of scientific articles published in the Proceedings of the National Academy of Sciences. The NAS Council would like to make it clear that this petition has nothing to do with the National Academy of Sciences and that the manuscript was not published in the Proceedings of the National Academy of Sciences or in any other peer-reviewed journal. (the NAS statement goes on) The petition does not reflect the conclusions of expert reports of the Academy.

Gallup: How much do you think about...

	Great deal	Fair amount	Only a little/ Not at all
<i>2012 Mar 8-11 (sorted by “a great deal”)</i>			
Contamination of soil and water by toxic waste	50	28	21
Pollution of drinking water	48	30	21
Pollution of rivers, lakes, and reservoirs	48	31	21
The loss of tropical rain forests	37	27	36
Air pollution	36	35	29
Extinction of plant and animal species	36	29	35
Global warming	30	25	45
<i>2011 Mar 3-6 (sorted by “a great deal”)</i>			
Pollution of drinking water	51	26	23
Contamination of soil and water by toxic waste	48	31	20
Pollution of rivers, lakes, and reservoirs	46	33	22
Maintenance of the nation’s supply of fresh water for household needs	46	29	24
Air pollution	36	36	28
Extinction of plant and animal species	34	30	36
The loss of tropical rain forests	34	29	35
Urban sprawl and loss of open spaces	27	30	42
Global warming	25	26	48

This “petition” contains signatures of over 13,000 medical doctors, engineers and general science majors. Many if not all of these good folks could be qualified to say something about climate science, but are they? Generally, expert opinion in science is relegated to those with advanced degrees in specific disciplines. Engineers and medical doctors do not practice fundamental science, they apply fundamental science. There’s a big difference. Out of all of the signatures that can even be identified, only an exceedingly small fraction are actual climate scientists. From the sidebar of Scientific American “Climate of Uncertainty” in October 2001:

Scientific American took a random sample of 30 of the 1,400 signatories claiming to hold a Ph.D. [of the original 17,000] in a climate-related science. Of the 26 we were able to identify in various databases, 11 said they still agreed with the petition--one was an active climate researcher, two others had relevant expertise, and eight signed based on an informal evaluation. Six said they would not sign the petition today, three did not remember any such petition, one had died, and five did not answer repeated messages.

As an example of the lack of control in who signs this petition, there are 10,102 in the category of general engineering and general science broken down into I) Engineering (7,280), II) Electrical Engineering (2,169) and III) Metallurgy (384), and General Science (269). Not include in the engineering category are 223 nuclear engineers, 2,169 electrical engineers, 1,693 chemical engineers, and 2,637 mechanical engineers. Over half (16,555) of the signatures are from engineers. Are engineers capable of understanding climate? Sure. I am an engineer. Are engineers represented in the academic literature publishing about climate? The answer is a resounding “no.” To finish with the Oregon Petition; it includes 81 food scientists and 384 metallurgical scientists.

Climate Change Reconsidered is an 880 page report prepared by the Marshall Institute and co-authored by Fred Singer. The opening remarks of the original video press conference of this 2009 report on their website primarily refers to the 31,000 “scientists” of the Oregon Institute Petition as their scientific support. The header on their website tells us to “Learn the Benefits of Atmospheric CO₂.” Singer is an 83 year old physicist who made a name for himself studying clouds. Singer also made a name for himself fighting against the anti-smoking movement and he was outspoken against regulations to curb acid rain. Then he fought against global protection for the ozone layer.

Emailgate, Himalayagate, Amazongate, etc.: Theft of personal emails; a single error about Himalayan glacier among thousands of facts in the 2007 IPCC Report and a Scribner’s citation error about the Amazon are resources that have been considered. The email scientists have been cleared of all charges by four separate independent investigations.

As for public opinion, there are certainly other sources of information on public opinion that I have not cited, and many of them say the same thing that I have reported, like the Public Religion Research Institute. But then there are those sources like The Heartland Institute or the George C. Marshall Institute that have carried out long and expensive campaigns to discredit. When the Heartland Institute compares the Unabomber to those who believe the consensus position on climate change, a line must be drawn. Rush Limbaugh and the talking heads on Fox News use similar crude tools to frighten and attempt to discredit with their “message.” This is not something that happens in credible science.



To conclude part one of this series, the relatively recent increase in unprecedented weather extremes has shaken up an increased public apathy towards climate change that has been prevalent since about the turn of the century. The opinions of the dissenters are well established, prominently advertised and look enormously authoritative, but they lack hardly any credibility. Climate scientists have been warning us that weather extremes would happen sooner if we did not reduce emissions. We did not and they did. The American public has broadly taken notice, blamed the unprecedented nature of these weather extremes on climate change, and this is represented by numerous public opinion polls, surveys and recently published academic work. It's time to ramp up the discussion.

In Part 2 (out of 3) of this series titled "Voices Tell Us the Warmists are Dead," we will explore academic work showing the lack of credentialed viewpoints in the scientific opinions of the dissenters, and the exceedingly small number of credentialed climate scientists that do not support the consensus.

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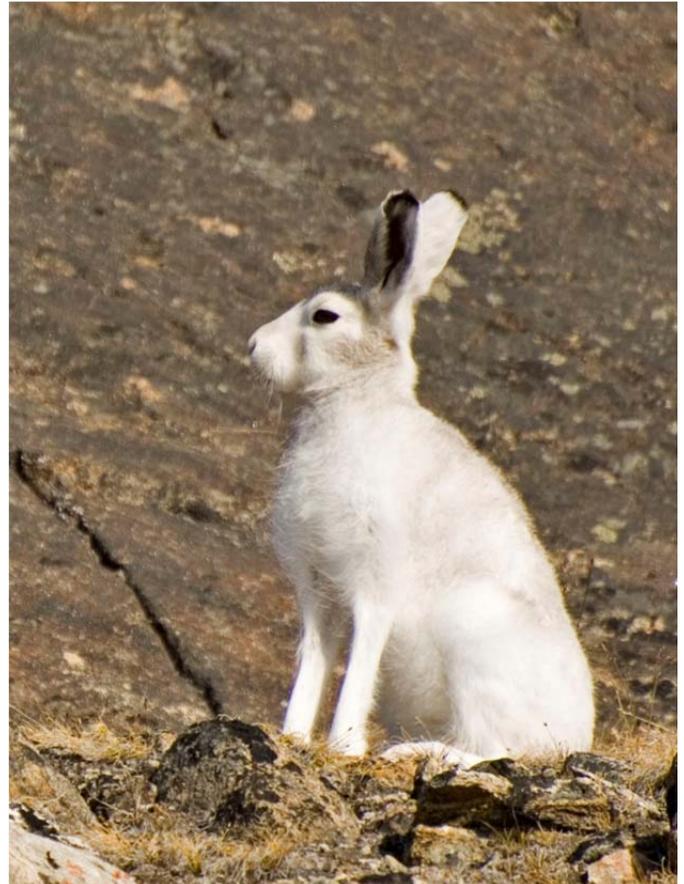
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The Climate Change Awareness Drought is Over

Part Two: Voices Tell Us “The Warmists Are Dead”

Which side is biased and how do we tell with all the noise in the media?

May 24, 2012, Austin, Texas: *Polls, surveys and academic evaluations of public opinion are showing a shift in the collective public understanding of climate change. Unprecedented extreme weather and political cues have allowed Americans to begin to disregard what the “voices” have been telling us. The voices, and their “message,” lack credibility, yet their message is endlessly repeated in the media echo chamber. The brute force of Mother Nature can overcome many obstacles however. The increasing change in awareness is grounds for a shift in advocacy policy towards how we urge for climate change action. It is time to begin anew. Climate pollutants are just pollutants. They will be no harder to limit and clean up than have been the challenges to find solutions to human toilet pollution over the last century. The voices have no credibility. Their money allows them to speak with millions of voices. The media is not qualified to tell the climate right from climate wrong.*



The bias in climate change messaging is well documented in academia. This bias comes from conservative news reporting sources and those institutions like the Heartland Institute or George C. Marshall Institute. One example of the bias in messaging comes from Stanford in 2010. It found that more exposure to Fox News quite significantly biased the respondents view against the consensus position on climate change. These researchers found that 82 percent of survey respondents that watched no Fox News believed the Earth’s temperature has been rising while 19 percent fewer Fox News viewers (63 percent) believed this. They found that 85 percent of respondents that watched no Fox News believed that the temperature increase is caused mostly by things people do or about equally by things people do and natural causes, whereas 25 percent fewer Fox News Viewers (60 percent) believed this.

In this study the authors tell us: “more exposure to Fox News was associated with more rejection of many mainstream scientists’ claims about global warming, with less trust in scientists, and with more belief that ameliorating global warming would hurt the U.S. economy.”

A more comprehensive study dealing with the reasons behind the different beliefs of viewers predominantly watching the Fox News Channel was presented by Feldman et al., in the *International Journal of Press/Politics* in 2011. Their findings backed up the Stanford study but went further. They found that Fox News viewers were consistently polarized in their beliefs vs. CNN and MSNBC viewers that showed no polarization.

The campaign to deceive is a monster. All one has to do is pick up a few books to define the magnitude of this concerted effort led by Conservative think tanks and institutions representing big money, fossil fuels and big business. The books are becoming endless and among their highly credentialed publishers are: Powell, *The Inquisition of Climate Science*, Columbia University Press, 2011; Bradley, *Global Warming and Political Intimidation*, University of Massachusetts Press, 2011; Dr. Michael Mann, *The Hockey Stick and the Climate Wars*, Columbia University Press, 2012; Hulme, *Why We Disagree About Climate Change*, Cambridge University Press, 2009, and Dr. Naomi Oreskes, *Merchants of Doubt*, 2010, Bloomsbury. And to wring this out, a paper in *Political Science* in December 2010 reviewed 141 books on portraying a skeptical view of the consensus and found 92 percent of them were funded by Conservative think tanks.

Television commercials from sources like Exxon, British Petroleum and the American Petroleum Institute (there are many more) litter our evening viewing entertainment with proclamations that fossil fuels are good, are central to our society and that we need more of them in the greatest whole-hearted American way. This of course (except for the sarcasm) is very valid. Our society has evolved with fossil fuels and it is very obvious that significant changes in the cost of energy can cripple our world.

But the amount of propaganda produced by these sources, vs. the propaganda produced by sources whose message is to address our fossil fuel “addiction” is simply staggering. This kind of messaging influences us tremendously.



One book that I left off the above list that shows the great extent of organized propaganda created to persuade the American public about the dissenter's viewpoint concerning climate change is *Hogan and Littlemore, Climate Cover-Up: The Crusade to Deny Global Warming*, Greystone, 2009, and Oreskes and Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*, Bloomsbury, 2010. These publishers are not the Academic powerhouses common to the above list, but the authors pursued this issue with a passion only similar to Rachel Carson and her *Silent Spring* which was published by a trade publisher Houghton Mifflin in 1962.

What about prominent scientists with dissenting positions like the Pielkes or Judith Curry? There are a few climate scientists whose views have been significantly reported in the media (and significantly promoted by interests capable of broadly advertising their message) that hold some viewpoints different from the consensus crowd. These scientists are mostly represented by the 2 to 3 percent of actively publishing climate scientists described in Anderegg et al. in their paper from 2010 (see the discussion of this work below as well as Oreskes 2004, Doran and Zimmerman 2007, Bray and Storch 2010 and Farnsworth and Lichter 2011).



There will always be dissenting views in science. Some are valid based on existing knowledge, others are rapidly disproven. Similar controversies in science have been repeated time after time, to name a few: planetary orbital theory, ice age theory, germ theory, continual drift theory and atomic theory. It took 100 years for ice age theory to be accepted by the vast majority of scientists. Yet still, somewhere near half of the population in the U.S. believes Earth is less than 10,000 years old.

Is it weather? Are these public opinions reflecting changes in

the weather, not changes in climate? Is the trend long enough to be valid? Climate after all, is decades of weather. This change in trend is only a few years. If a doctor warns someone for twenty years that their smoking could give them cancer, and it occurs, was it caused by smoking?

The “weather is not climate” argument is a good argument and one that I use often, but it simply does not apply here. The “weather” has been getting weirder for decades. Now the extremes have become unprecedented as discussed in Part three under “How Valid is the Trend?”

The findings in these polls and surveys are about respondent’s opinions about weather events, not about weather or climate itself. The validity of the trends in these cases is no different than the validity of public opinion poll trends looking at who is most likely to win a political race. Statistical validity is based on sample size, sample diversity and statistical measurements. The statistical validity of short-term opinion polls is little different from the statistical validity of long-term climate data. It just takes much, much longer to accumulate climate data than public opinion data and the data are much different in shape and form.

To lay the “bias” question aside, certainly there is bias. But, it is not coming from the vast majority of climate scientists. To illustrate the extent of the scientific acknowledgment of man's impact on our climate, Naomi Oreskes, Professor of History and Science Studies at the University of California San Diego, in a paper in the journal *Science*, in 2004 (updated in 2005), revealed an astounding truth about academic thinking and current climate changes.

The study analyzes the contents of the ISI database. The ISI database (The Institute for Scientific Information) is an ongoing collection of over 18,000 scientific journals and is the foremost compendium of academic peer reviewed papers in the world. The ISI database provides a comprehensive coverage of the world’s most important and influential research. Oreskes searched the database period 1993 to 2003 for papers with the key words "global climate change" in their summaries.

This search found 928 papers. Seventy-five percent of the papers argued that climate change was caused by man, evaluated the impacts of climate change caused by man or discussed alternatives to lessen the impacts of climate change caused by man. Twenty-five percent dealt with scientific methods or the study of our ancient climate and took no position as to whether our current climate change is being caused by man. *Zero percent of these papers argued that the climate changes we are seeing on our planet today are a natural occurrence.* Of course, this research is only related to those papers with the key words “global climate change” in their summaries.



The “ukaliq”, or Arctic hare, is four times the size of our lower latitude cottontail rabbit that we are all accustomed to.

Doran and Zimmerman from the University of Chicago, Illinois, in the publication of the 50,000 member American Geophysical Union *EOS*, surveyed over 10,000 earth scientists about their professional opinions on climate change in 2007. Of over 3,000 responses, 90 percent (including prominent scientists who disagree with the consensus) say the earth is warming and 82 percent say it is caused by man. Of those specialists whose work consists of more than 50 percent of their publishing related to climate science, 96 percent say the earth is warming and 97 percent of those say it is because of man. Interestingly, they found only 47% of petroleum geologists and 67% of meteorologists surveyed agreed there was human involvement in global warming.

A study by Bray and Storch (2010) from the Institute for Coastal Research in Geesthacht, Germany looked at over 2,000 international climate scientists’ opinions in 2008. The respondents for their study came from the Oreskes study mentioned above, from the authors in ISI database journals showing the ten highest impact ratings between 1998 and 2007 and from climate or weather related organizations such as the National Center for Atmospheric Research, the similar Max Planck Institute in Germany, the American Meteorological Society, etc. They found that 94 percent of 375 respondents answering their survey agreed that climate change was occurring and 84 percent said it was caused by man. This work did not break out the responses per the respondents’ area of scientific expertise.

Farnsworth and Lichter at George Mason University have published a Research Note in the *International Journal of Public Opinion Research* (Oxford University Press) in October 2011 titled *The Structure of Scientific Opinion on Climate Change*. Their survey list came equally from the American Meteorological Society and the American Geophysical Union, and was limited to individuals listed in the prestigious publication *American Men*

& *Women of Science*, which is the most widely recognized biographical reference work on leading American scientists.

Their selection procedure did not include media weathercasters and they received responses from, 489 of their 998 questionnaires (which is a really high response rate). Why no television weatherpersons? Weather and climate as we are concerned with here are distinctly different. Weather looks at “climate” for the future in terms of days, maybe weeks and sometimes months. Climate science is concerned with “weather” from the past and future based on the shortest time frames of years and generally 30 years to centuries and millennia. Weatherpersons are certainly knowledgeable about climate, but no more so than say, pharmacologists are knowledgeable about cancer.

What Farnsworth and Lichter found was that 97% of their respondents agreed that Earth was warming and 84% said it was because of man. Only 5 percent disagreed that it was because of man. They tell us that the greater proportion of atmospheric and, metrological scientists in their sample could be the reason why their “belief in man-caused climate change results” was lower than Doran and Zimmerman. “Surprisingly” (said that in the paper), industry based scientists were not predisposed to show a preference one way or the other towards man-caused climate change. And tellingly, scientists based in academia were more likely to see climate change impacts more severely than their counterparts in industry and government positions.

Anderegg and colleagues (2010), from Stanford, the University of Toronto, the William and Flora Hewlett Foundation, in the *Proceedings of the National Academy of Sciences*, reported that between 97 and 98 percent of nearly 1,400 climate scientists’ publications reviewed, published by climate scientists who are most actively publishing findings in their field, support the human-caused climate change consensus. Out of the two to three percent that do not support the consensus, 80 percent have published fewer than 20 papers.



There are lots of Arctic hares now, but their environment is changing as rapidly as any on the planet. Parts of the Arctic have seen more than ten degrees of change already. These creatures live nowhere except the Arctic. What will happen to them and scores of other species like them when the Arctic has changed (which will happen in the not too distant future on the path that we are upon) to something more like Minnesota?

The consensus crowd includes only 10 percent of scientists who have published fewer than 20 papers. Not only do almost all climate scientists support the consensus position, those that do not support it do not have anywhere near the credentials as the consensus crowd. In the authors' words: "The relative climate expertise and scientific prominence of the researchers unconvinced of ACC [anthropogenic climate change—global warming] are substantially below that of the convinced researchers."

As for the peer reviewed literature that contradicts the above I will just cite one extensive review of the literature against Oreskes (2004) and Anderegg et al., (2010), of about 7,000 words and 58 references (Goot, 2011): "None of the criticisms leveled at Oreskes or Anderegg et al. undermine their findings in any substantial way."

Scientific discipline does make a difference. Any old scientists can be knowledgeable, but their knowledge may be inaccurate relative to that of the specialists. We need to pay the most attention to the most actively publishing climate scientists. The bias is not in the circles of specialists, it is in the voices of interests capable of widespread advertisement of their message and it is repeated far and wide by the media that knows not what it is about.

The media does their reporting innocently. Or maybe ignorantly is more an appropriate term. They no more know who is correct than the general public, or the vast majority of the signers of the Oregon Petition. They are reporters, not climate scientists. Their principles are based on the Journalists' Creed. They are vested in the public trust and understand that both sides of the story need to be presented in an unbiased manner. To a journalist, "fair" is not just a motto for a television news program, but a presentation of both sides of an issue.

Our society has taught journalists and their kin to be fair. The Federal Communications Commission created the Fairness Doctrine in 1949 just to be sure. This rule required that media coverage of public issues be covered on the news and contrasting viewpoints were required to be presented. It said that broadcasters were to provide coverage of controversial news and public affairs when appropriate. This was the way it should be done. It was just and fair. It basically created investigative journalism as we know it today, or as we knew it twenty years ago. The Fairness Doctrine was abolished by President Reagan in 1987.

Then there was the Equal Time Rule, established in 1927 and recodified in 1934. It was a rule addressing political issues only, intended to provide an equivalent opportunity to any opposing political candidates who request it.

These two rules help define ethics, and the morally appropriate way to behave while reporting on television and radio. It is only fair that both sides of the story be heard, that those with different beliefs be given appropriate time to demonstrate their position accordingly. We as a society understand these ethical and moral rights and generally we uphold them to the utmost degree.

But there is a big challenge associated with climate change, or science of any kind really. Most public issues in the past and today deal with beliefs and issues. Climate change is not about beliefs and issues. Beliefs change over time as the public's perception of an issue changes over time. These are things like: racial issues, alcohol consumption, workers' rights, child labor laws, women's suffrage, slavery, right to life, appropriate religious beliefs, separation of church and state, the right to bear arms, nuclear power, national healthcare, birth control, etc.

Climate change is about science. Science has no morals. There are ethics involved in science, but they are the ethics of the industry of science, not the perceived appropriateness of an issue like “the right to life.” Issues can be debated based upon beliefs. There are no “beliefs” in science, only facts or evidence.

So right away, you see that there is a fundamental problem with the way our society is treating climate change as just another political issue. We are treating it like it is another belief; something that can be judged through morally appropriate behavior. We actively seek contrasting



viewpoints and consume them with the same weight as the consensus position. Kruger and Dunning, in the *Journal Psychology*, put this problem very simply:

When people are incompetent in the strategies they adopt to achieve success and satisfaction, they suffer a dual burden: Not only do they reach erroneous conclusions and make unfortunate choices, but their incompetence robs them of the ability to realize it.

Incompetent is a harsh word, but how does one know that climate change is real if they do not have the knowledge to understand the science is valid when their authority figures are telling them the science is not valid? Ignorance in many cases is not bliss. The media just reports, but should place more confidence in the vast majority of specialists? Should they be more aware of the sources of the information they are reporting? Or the funding sources of the information sources that they report? Who gets more credibility, the George C. Marshall Institute or Penn State? The Oregon Institute of Science and Medicine or the Woods Institute? If one does not have the knowledge necessary to make decisions on such topics, how does one tell?

A little more knowledge however, may spoil the pudding. From the Yale Cultural Cognition Project we find that a little more knowledge often serves to reinforce the position of social issues of one’s peers. Higher education does not always mean that appropriate climate science is recognized for what it is. More education can enhance what is often described as the Kruger Dunning Effect. Understanding a few more facts about climate serves to reinforce the well-designed propaganda of the vested interest groups that is so widely distributed to the media. This design specifically enhances commonly understood, intuitive evidence to the contrary of more detailed information understood by specialists.

The media only understands that the public trusts them to be fair, and that the rules their industry evolved under require them to provide equal time to the opposition. But the rules that trained this industry were written for issues-based discussions, not science based discussions. The bias is on the side of the voices. The media faithfully upholds their ethics and reports what the voices have to say in ignorant bliss.

A Revelation

But all is not even as the voices themselves believe. In their quest to quell, they have denied the key to the whole conundrum. Authoritative voices tell us climate change is not real, that it is a scientific conspiracy, that it is a natural cycle soon to end and that it will be good for society. These same voices, that are telling us all of these things at the same time; these are the voices that tell us that the solutions to climate change will ruin our economies.

Climate scientists say nothing of the sort. Richard Alley, Evan Pugh Professor of Geosciences at Penn State University, one of the lead authors of the 2001 and 2007 IPCC Reports, member of the United States National Academy of Sciences and one of the pivotal international researchers in climate science, tells us in his book *Earth the Operators Manual*; about 100 reports have been published concerning the economic impacts of the solutions to climate change and they are focusing in on one thing.



The solutions to fixing our climate will cost about one percent of global gross domestic product every year for 100 years. This may seem like a lot of money (\$540 billion a year), but it needs to be taken in context. Professor Alley tells us that the cost and effort required to fix our climate will be no more than what has been spent across this planet in the last 100 years installing our human waste collection and treatment infrastructure. That's right. The cost and effort required to clean up greenhouse gas pollution is really not so much different than the cost and effort required to clean up human toilet pollution.

It's time to begin anew. Climate pollution is just that—pollution. It's no big deal, and a lot of people are going to make lots of money creating climate toilets to get rid of the climate pollution.

Part three of this series looks at the validity of the trend: the validity of the public awareness trend *and* the trend of increased and unprecedented weather extremes caused by climate change. Completing this article, we explore public opinions on how the U.S. Government should be treating climate change and some amazing numbers about how an active and vigorous position on “green” issues has been shown to win more political battles and races.

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The Climate Change Awareness Drought is Over

Part Three: It's Only Pollution.

For decades, the concept of installing privies in every house, business and public building, and then piping human waste to a central treatment systems was perceived as lunacy that would bankrupt society.



Wind turbines on the mainland as seen from the backside of Padre Island National Seashore, at mile 25 on the four wheel drive only beach.

June 7, 2012, Austin, Texas: *The shift in public opinion about climate change will likely only grow larger. This shift has been caused in a large way by an increase in unprecedented extreme weather caused by climate change, as climate scientists have been warning us for twenty years. Americans are beginning to disregard what the “voices” have been telling us about the great climate science conspiracy. Some of the most amazing evidence of how much our climate has already shifted has now been published. A vast majority of Americans have been highly supportive of our government acting on climate change, even before the shift in public awareness began. Analysis of our leaders positions on “green” issues, vs. their success in 2008 and 2010, shows that vocal support for “green” issues led to success more often than silence on the issue. It is time to change the climate tone to one of aggressive vocal advocacy for the consensus position.*

I would like to begin this final part in the series by repeating a little from Part Two. Richard Alley, Evan Pugh Professor of Geosciences at Penn State University, one of the lead authors of the 2001 and 2007 IPCC Reports, member of the United States National Academy of Sciences and one of the pivotal international researchers in climate science, tells us in his book *Earth the Operators Manual*; about 100 reports have been published concerning the economic impacts of the solutions to climate change and they are focusing in on one thing.

The solutions to fixing our climate pollution problem will cost about one percent of global gross domestic product every year for 100 years. I've already told you that Alley says this astronomically sounding \$540 billion a year is no more than we have invested in the cost of installing toilets and the infrastructure to collect, clean and dispose of toilet water. Here's more. In the U.S. we need to spend about 0.75 percent of our average household income every year to maintain our sewer and water infrastructure. (\$375 per family considering the Census Bureau's median household income of \$50,000 per year in 2006). The Organization for Economic Cooperation and Development tells us most of the developed world spends 0.5 to 2.4 percent of household income on this task with the U.S. being the lowest.

Other things that show the simplicity of this challenge include: in 2011 we spent \$494 billion on marketing across the globe according to eMarketer Digital Intelligence, the U.S. annual military budget (not including wars) is right at a half billion dollars, the Congressional Budget Office says the Bush Tax Cuts cost about \$115 billion a year or approximately the United States share if we are divvying this thing up according to who emits what, an article in the *Bulletin of the American Meteorological Society* in June 2011 tells us that routine weather events such as rain and cooler-than-average days can add up to an annual economic impact of as much as \$485 billion in the United States alone and in 2009 we spent \$2.5 trillion in the U.S. on health care. This is five times what Alley tells us the economics scholars think the cost of worldwide climate pollution control will be.

One more very important thing to consider about what professor Alley tells us is that these economic analyses only considered the costs. Not considered were the profits from the construction of the climate change pollution prevention devices, profits from avoidance once a carbon pollution tax is finally implemented and benefits from the jobs created to build and maintain this new infrastructure. Also not considered would be the benefits to society of a clean energy economy.

So why is the general public not aware of the relative simplicity of the task of simply cleaning up the largest form of pollution caused by a single species in the known universe? It's "The Voices"... It's the voices and their campaign of deceit, discreditation and disinformation that is almost complete. Their money reigns supreme.

The widely popular Wisconsin gubernatorial recall election on Tuesday, expected to be a closely contested contest, was blown to smithereens as Citizens United allowed just a few moneyed interests to outspend the Democrats by eight to one or \$30.5 million to \$3.9 million says CBS News. At the same time in California, the state with the lowest smoking rate in the country, there was a proposition on the ballot for new anti-smoking dollar-a-pack tax on tobacco products to fund cancer research. Bolstered by \$12 million in anti-smoking campaign, it reached a 67 percent support level in March. It was slaughtered by tobacco industry advertising of \$47 million in the final weeks. They won by less than a percentage point. Big brother is here, and it ain't the government.

Let's return from this world of corporate control and look at the real science some more: The money required to clean up climate pollution considers existing off-the-shelf technologies to do the job. Billionaires around the globe are investing in new technologies to do the job at a fraction of the price and earn billions in profits. Remember, half a trillion a year is at stake. One of the leading examples is Global Thermostat in California that has developed a prototype that they say, if ramped up could solve our climate pollution problems in 30 years for only \$2 trillion or \$70 billion a year. This is an eighth what most of the economic evaluations are saying is needed to do the job with existing technologies.

To finish these optimistic thoughts, there is a lot of messaging around focused on geoengineering and the wrong-headedness of such ventures; that this message will give people permission to emit more greenhouse gases and not reduce emissions. Atmospheric carbon capture and land based storage cannot be compared to

pumping carbon into space through a hose suspended in the sky, putting bazillions of tiny mirror like particles in the upper atmosphere to reflect the sun or a sun shade umbrella in deep space or any of the other grand-but-dangerous schemes. Removing CO2 pollution from our atmosphere is little different from picking up trash on the beach or the side of the road and putting it in a landfill. The scale may be larger, but the comparison cannot be made to geoengineering's risks.

To think that this type of pollution cleanup is wrong-headed, that it will give people permission to emit more greenhouse gases, is no more wrong-headed than thinking that picking up trash on the side of the road will give people permission to litter even more. As Lord Nicholas Stern tells us (once chief economic advisor to Prime Minister Tony Blair and author of one of the most complete economic evaluations to the solutions to climate pollution—the Stern Report), we have to do everything we can at the same time to solve this problem.

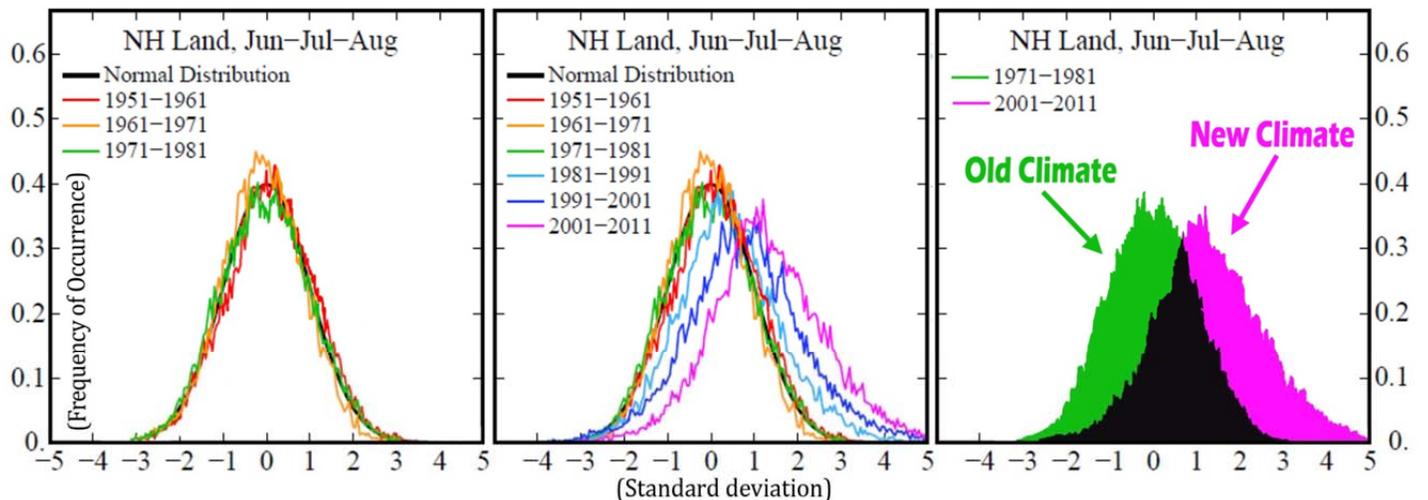
How Valid is the Trend?

To be certain that a change in tone can be beneficial we need to know that the trends in awareness *and* climate change are valid and likely to continue. Because a significant portion of the awareness shift has been created by climate changes that have already happened, it is logical to assume that because the weather is predicted to become more extreme with greater warming, the awareness shift will likely continue to grow.

A really amazing piece of research was recently published that shows how much our climate has changed in the last 30 years. It shows that extreme temperature events are now occurring 10 to 100 times more frequently than during the period 1951 to 1981. This major piece of virtually unknown climate science comes from a paper in-press at the *Proceedings of the National Academy of Sciences* (PNAS) as submitted by scientists from NASA and Columbia's Earth Institute.

This change in climate that we have already seen can be related to having a 100-year heat wave every one to ten years. This is like having the drought of the century—the drought of record—every one to ten years. In another 30 years if the rate stays the same we can expect to see something like the thousand-year heat wave or the ten-thousand year heat wave happening every ten years. The authors tell us: “because we can project with a high degree of confidence that the area covered by extremely hot heat waves will continue to increase during the next few decades, even greater extremes will occur.” This is exactly what we have been warned about by climate scientists for over 20 years. The rate of change is expected to accelerate as we continue to delay emissions reductions. The graphic below from this study by NASA's Goddard Institute for Space Studies and Columbia shows how markedly, persistently and increasingly our climate has changed in the last 30 years.

Change in Temperature Extremes



While complicated looking, the underlying simplicity of this graphic is plain to see. The lines in the image on the left show three decades of our normal climate. The image in the middle shows the last six decades where each successive decade has shifted further to the right. The image on the right shows the difference between today and our normal climate: magenta is our new climate, green is our old and black is where the two overlap. A shift to the right means more hot extremes. What Dr. Hansen and his colleagues tell us this graphic reveals is that already, our climate's hot extremes are happening 10 to 100 times more frequently than in our normal climate. In reality what this means is that normally, 0.1 to 0.2 percent of land in the Northern Hemisphere would experience extreme heat in any given year. Now, 10 percent is experiencing this heat. Adapted with permission from Hansen, Sato and Ruedy, Public Perception of Climate Change and the New Climate Dice, Arxiv.org, April 5, 2012, submitted to *Proceedings of the National Academy of Sciences*.

To start with, this research evaluates Northern Hemisphere temperature. Northern Hemisphere temperatures have warmed more than the rest of the planet because there is more land in the northern half of our planet. The temperature increase over our oceans is smaller than over land because of what is called thermal inertia, or the ability of water to absorb more heat than land. This absorbed heat is transferred to deep cold water via sinking ocean currents and limits warming over oceans.

This means that the changes that you and I are likely to experience will be greater—two times more—than the global average. This is something that is very important in climate science that rarely gets acknowledged in the media. Up to 9 to 11 degrees of average warming across the planet by 2100 means up to 18 to 22 degrees of warming across large parts of Earth's land surfaces.

Our climate has not shifted uniformly. High temperature records outpace low temperature records 2 to 1. Extreme temperature events are happening much more often than if our climate had of just shifted by the 1.4 degrees of average warming already seen across the globe. There are a lot of important things to be found in this reporting of our changed climate and the statistics are complicated so I will take some time and go through everything. (Or, just check out the caption under the image above and skip ahead to the subtitle "No Reason to Believe.")

Starting with the image on the left, three decades of temperature extremes in the Northern Hemisphere are graphed (red, orange and green lines). The similarity of each decade is obvious and represents the stability of our climate during this period. The middle graphic adds data for the three most recent decades (cyan, blue and magenta). Each one of these is shifted to the right (hotter) and if you look carefully you can see the shift increases with each decade. The graphic on the right (green, black and magenta) shows the difference between 1951-1981 and today. There has been a shift of three standard deviations in the extreme temperatures in the Northern Hemisphere (I will get to standard deviations momentarily).

The right hand side of each decade has shifted farther to the right than the left hand side of each decade which means that hot extremes are increasing more than cold extremes, which are staying about the same. (The graphs of the last two or three decades are cut off on the right as they extend much further than shown. This is the way they came in the paper and the quote below from the research describes three standard deviations, not two as shown. The shift is actually more than three standard deviations, but that's even more complication that I will leave behind. Sorry for the confusion, this stuff is like rocket science.)

In total the research says the shift is three standard deviations. To simplify what this means, consider the quote below from the paper (I have omitted the extra wording about standard deviations):

A new category of hot summertime outliers has emerged . . . with the occurrence of these outliers having increased 1-2 orders of magnitude [10 to 100 times] in the past three decades. Thus we can state with a high degree of confidence that extreme summers, such as those in Texas and Oklahoma in 2011 and Moscow in 2010, are a consequence of global warming, because global warming has dramatically increased their likelihood of occurrence.

A further quote to help:

The perceptive person (old enough to remember the climate of 1951-1980) should recognize the existence of climate change. This is especially true in summer. Summers with [average] temperature in the category defined as "cold" in 1951-1980 . . . which occurred about one-third of the time in 1951-1980, now occur with a frequency about 10%, while those in the "hot" category have increased from about 33% to about 75%.

What we are seeing today is that the coldest summertime temperatures relative to "the normal period represented by 1951 to 1981" happen only one tenth of the time today compared to one third of the time back in the day. The "hot" temperatures, instead of happening one-third of the time like in 1951-1981, now happen more than two-thirds of the time (75%). One more quote:

These extreme [hot] temperatures were practically absent in the period of [1951 to 1981], covering only a few tenths of one percent of the land area, but they have occurred over about 10% of land area in recent years.

No Reason to Believe it Will Not Continue

This work out of NASA is yet another very compelling description of how our climate has already changed and there is no reason, academically or logically, to believe it will not continue to change and that the changes will not continue their trend of acceleration. Putting two and two together; considering the reason why public perception has changed because of the increase in extreme weather and the likelihood that the extremes will continue to become more extreme faster, there is no reason to believe that awareness will not continue to grow. This assumption must also consider some decrease in awareness for relatively short periods from hyper-press coverage of events/messages that are designed to discredit climate science or possibly the election of a Republican as president in November. But for the last three years, political cues have changed and these cues have resulted in part of the change in public opinion about climate.

Also related to political cues are these two new movements called Tea Party and Occupy. These two groups are more similar than one might think. Their political and social messages are generally far (way far) apart, but their motivation is a different story. Both groups seem to be motivated by what they feel is a loss of control

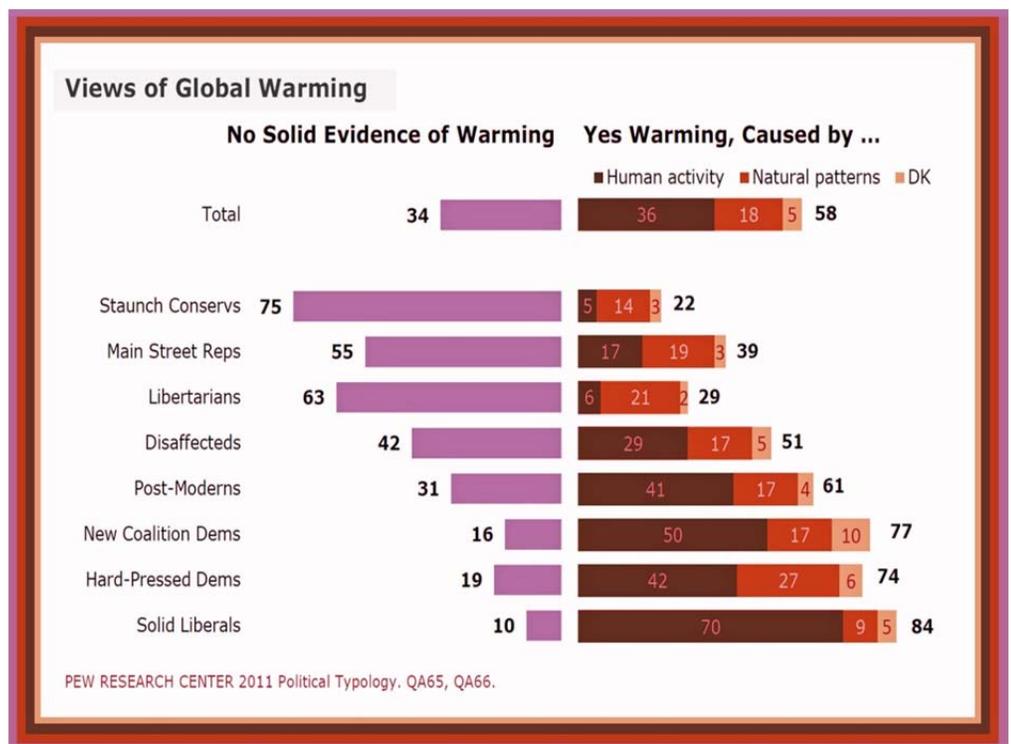
where government/politics and or big business/big money and their government/political relationships are concerned.

Big business, money and its corresponding political support among Conservatives has vastly shaped the world of political “cues” related to American’s beliefs on climate change. As the country’s support of Conservative leaders or institutions increases or decreases, awareness of climate change issues also increase or decrease as described by Lieserwitz 2012 (the Yale paper from Part One).

The important concept here is that both the Tea Party and Occupy believe that politics and/or big money have negatively influenced government. These folks do not trust politicians/government and big money. This is a widespread sentiment of the American public that can be seen in polling on banking, insurance and U.S. lawmakers. Not surprisingly, these movements are not just American. In Europe they have the Pirate Party, and very similar to both Occupy and the Tea Party, their goals are nebulous and as yet ill-defined. What the Pirate Party can decide on however is they want to see transparency in government and Internet freedom.

The views of Conservative vs. Liberal politics towards climate change are apparent all around us. Conservatives generally disagree with the climate consensus and Liberals generally agree. But the widespread nature of this relationship tells even more of the story.

A Pew Center study of the climate change beliefs of different individuals has looked at eight classifications of Conservatives and Liberals (in the Graphic “Views of Global Warming,” staunch Conservatives are “Tea Partiers”). A more in-depth description of the other types can be seen at the link in the references, but for the most part the rest are somewhat more easily identifiable. This work shows very graphically that an increase in liberal politics means an increase in the belief of the scientific consensus.

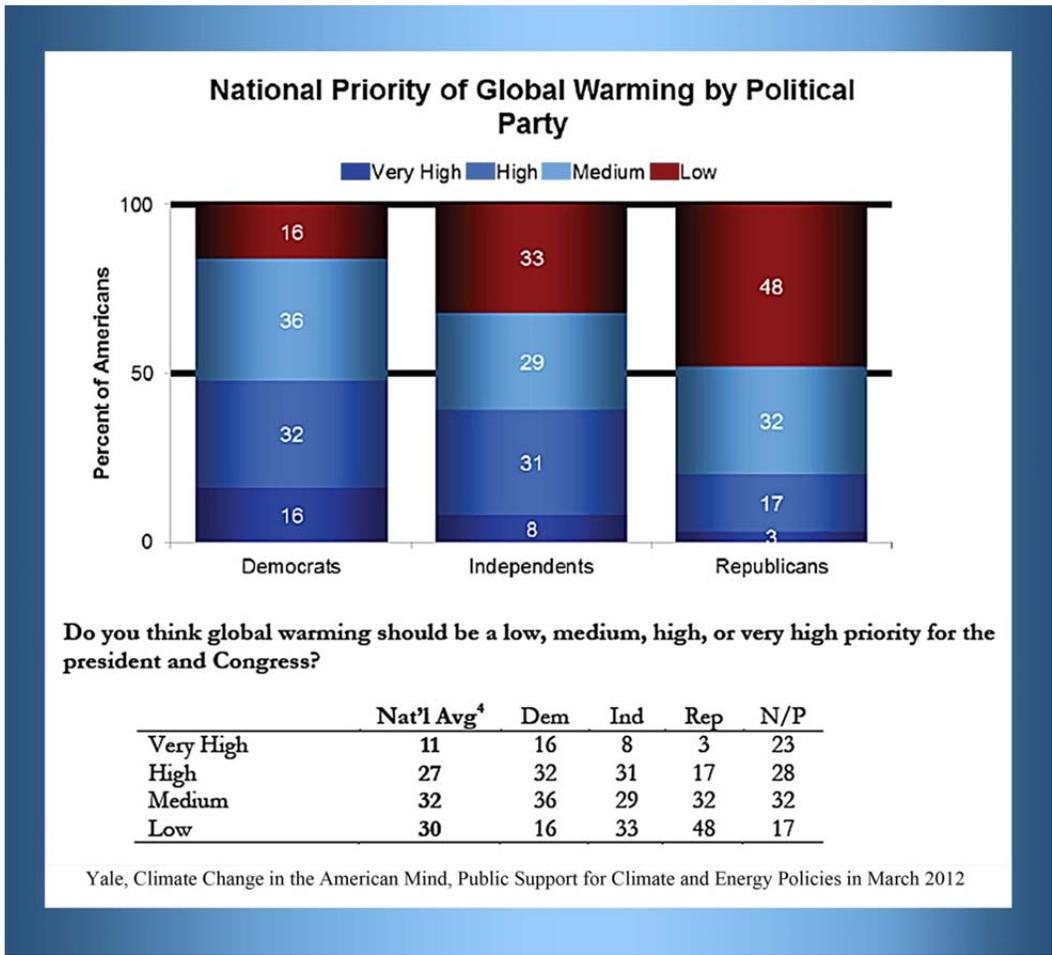


A fall 2011 survey by the Brookings Institute tells us that 78 percent of Democrats believe there is solid evidence supporting the consensus on climate change where only 47 percent of Republicans believe there is solid evidence.

A study out of Yale and the George Mason Center for Climate Change Communication in March 2012 (in the graphic “Climate Change in the American Mind”) looks at the issue differently. It finds that nearly twice as many (38 percent) of Democratic respondents believe the national priority for global warming should be high to very high vs. Republicans (20 percent). Also of note in this study, 56 percent of Republicans in October 2011 believe global warming priorities should be low vs. 48 percent in March 2012.

A study in *Sociological Quarterly* from April 2011, carried out by McCright and Dunlap of Oklahoma State University and led by Michigan State, analyzed 10 years of data from Gallup's environmental poll and found that the gap between Republicans and Democrats that believe global warming is happening widened by 30 percent from 2001 to 2010.

The Pew Center's latest (March 2012) also tells us that 51 percent of Republicans and Independents say it is warmer but it is due to natural causes while 47 percent of Democrats say it is due to manmade global warming. From the March 2012 Gallup survey, 43 percent of Democrats believe warmer than normal temperatures are because of climate change, vs. 19 percent of Republicans.



On the topic of American's beliefs about government action on climate change: CNN April 2011 tells us that 71 percent of Americans favor funding for the EPA to enforce regulations on greenhouse gases. Gallup says in June 2010 that 42 percent favor the Obama position on climate change vs. 33 percent that favor the Republican position. ABC News/Washington Post in June 2010 finds that 71 percent of Americans think the federal government should regulate the release of greenhouse gases from sources like power plants, cars and factories in an effort to reduce global warming.

Virginia Commonwealth University 2010 reveals 51 percent of Americans feel that the federal government is doing too little to reduce global warming. Pew Center 2010 adds that 52 percent of Americans favor setting limits on carbon dioxide emissions and making companies pay for their emissions, even if it may mean higher energy prices. USA Today/Gallup 2009 said that 55 percent of Americans favored the U.S. signing a binding global treaty at the Copenhagen Summit that would require the U.S. to significantly reduce greenhouse gas emissions.

Finishing off these numbers, the MacInnis, Krosnick and Villar study from Stanford and Woods Institute in 2011 analyzed the 2008 presidential election and the 2010 Congressional/Senate election and found something surprising. Democrats who took "green" positions on climate change won much more often than Dems who remained silent and Republicans who took "not-green" positions on climate change won less often

than Republicans who remained silent. MacInnis tells us his research suggests that elected officials should take vigorous public positions on climate change because most Americans view this favorably.

- Democrats won 69% of the races in which the Democrat took a green position and the Republican was silent/mixed.
- Democrats won 68% of the races in which the Democrat took a green position and the Republican took a not-green position.
- Democrats won 18% of the races in which the Democrat took a green position and the Republican also took a green position.
- Democrats won 17% of the races in which both candidates were silent/mixed.
- Democrats won 4% of the races in which the Democrat was silent/mixed and the Republican took a not-green position.
- Democrats won 0% of the races in which the Democrat was silent/mixed and the Republican took a green position.

Summarizing these findings the paper tells us:

It is interesting to note that these findings have simple implications for Democratic campaign strategies but tricky ones for Republicans. It appears that Democrats enhanced their chances of victory by taking a green position, regardless of what their Republican opponents said on the issue. But the optimal strategy for Republicans appears to have hinged on what their opponents said. If a Republican could be confident that his/her Democratic opponent would remain silent on climate change, then the Republican would have gained by expressing a not green position. But once a Democrat expressed a green position, the Republican would have been wisest to remain silent/mixed, because expressing a not-green position appears to have hurt his/her chances of victory.

From the press release for the study Krosnick tells us: "Our studies show no decline in public belief in the existence and threat of climate change, and that politicians might benefit from taking a 'green' stance."

The Yale study Climate Change in the American Mind, tells us that three Americans to one would be more likely to vote for a candidate that supports a "revenue neutral" shift in taxation increasing fossil fuels taxes and reducing federal income tax by the same amount. Breaking it down by party, Republican respondents would support such a shift by two to one, Independents three to one, Dems five to one (74 percent). In the presidential vote this year, 55 percent of Americans say that global warming will be one of several important issues they use to determine how to cast their vote (60 percent Dems, 41 percent Republicans and 59 percent Independents).

Conclusions:

Awareness in climate change issues is increasing because of political cues and unprecedented weather actually caused by our already changed climate. Republican's overwhelmingly disagree with the scientific consensus whereas Democrats agree. Only 60 percent of climate scientists believed that Earth was warming in 1991, compared to 97 percent today. American's views on climate change are about 20 years behind those of the vast majority of climate scientists'. Lawmakers voicing an opinion on "green" issues are much more likely to win than if they are silent and Democrats are much more likely to win if they voice a positive "green" opinion.

Climate change impacts happening now are making the case for us. Public opinion is changing directly because, in the backs of our minds, we have been listening all these years. Now we see the predictions coming

true and are converting. The extremes are convincing people through messaging work that has already been performed. Not that we don't need to do more. This article has been all about starting new campaigns with a different tone.

The conversions will continue as the extremes continue to ramp up. The majority to the vast majority of Americans already believe and already want our government to act. What needs to be done now is convince those already convinced that things are bad enough and that the predictions are valid enough that they need to do something about it themselves, or them and their children will face the balance of the predictions of dangerous climate change.



*We can kick the climate change disbelievers
off the island. We have enough votes
to do the job that has to be done.*

We can completely circumvent the dissenter's campaigns. Disassociation is what is needed. Their message is not credible. This is about convincing our leaders that the time has come to do something. And how do we do that? We simply threaten them with un-election. Tried and proven, this tactic can change their votes in mere minutes. But we have to have enough warm bodies engaged. Enough voters need to own this issue to convince our leaders that it's our way or the highway.

With even more dangerous climate changes still in the pipeline, the voting stance of our elected leaders will change organically like the change in public awareness that we have seen in the last several years. But this will take time that we may not have. If we help it along it will come faster.

Twenty-first century social media have had great impacts on politics recently in numerous issues and these include: Obama's election in 2008, the Tea Party and Congressional elections in 2010, Iranian elections in 2010, Occupy Wall Street, Arab Spring, Stop Online Piracy Act (SOPA), Planned Parenthood and breast cancer screenings, Rush Limbaugh's feminist comments blowback, KONY 2012. There are about 250 million Internet users, over 100 million smartphone users, 133 million Facebook users and over 24 million Twitter users.

This is no longer the 20th century. "Click" activism is here. What we did back then, and in the early part of this century, before we decided that climate change was a dirty word, is not going to work today. We need to rely on different strategies. The voting statistics tells us that Dems that speak up about green issues win more often vs. when we remain silent. Why are we not speaking up? Social media has obviously made a difference recently, why are we not embracing this technology with our message?

The climate change denial tactics of the Conservatives have obviously been successful. It is only when Mother Nature's brute force exerts more influence on individuals that the tide has begun to turn. Why are we not using the tactics of the Conservatives to help our citizenry understand what they should do? Why are our Democratic Party leaders not refusing to do one single thing Conservative politicians want us to do instead of compromising beyond our principles?

Why are we not using emotional issues in aggressive ways, like the Conservatives' messaging campaigns, to convince the undecided that they need to pay attention to what the climate scientists are saying about our children's future? Why are our Democratic Party leaders not standing on top of the Conservatives

misrepresentations of climate change and repeatedly revealing them to the American public for what they are? Why are the vast majority of us “silently” supporting the climate science consensus when an aggressive vocal stance wins more often?

It's time to come out of the climate closet and take a deliberate stance. The era of politically incorrect climate change messaging is over. Take a stand and urge your leaders to take a stand. We can vote the disbelievers off the climate island and win.



[Bruce Melton is a professional engineer, environmental researcher, filmmaker and author in Austin, Texas. Information on Melton's new book, [Climate Discovery Chronicles](#), can be found at this [link](#). More climate change writing, climate science outreach and critical environmental issue documentary films can be found on his [website](#).]

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