

# **The Denial of Climate Change**

**The Who, the Why and the How Behind the Refusal by So Many  
to Face the Most Defining Environmental Issue of Our Time**



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## Introduction

I write this paper for two reasons. The most important reason is that I find that the process of paper writing broadens and deepens my understanding of the issues involved. The second reason is that I had a shoulder operation on August 23, 2011 and paper writing seemed to be a good way to productively use the time made available. Given my deep interest in climate change, I decided to focus on three things: who denies that global warming is real and man-made (anthropogenic); why they deny that it is real; and what mechanisms they use to maintain their denial. The reader should know that this paper draws from a variety of different sources including climate textbooks, periodicals, population studies, and social psychology. Although I have no major qualifications in any of the fields involved, I do know how to read and write.

The reader should know three things concerning my beliefs about global warming.

1. I believe that global warming is happening.
2. I believe that global warming is exacerbated by human activity.
3. I believe that the scientific evidence in favor of anthropological warming is overwhelming.

I also believe that very many of us who point to an ongoing controversy about the reality of anthropogenic climate change may be confusing climate science with climate reporting in the media. I also understand, and understand completely, that some readers of this paper, if indeed there are any, have such strong views about global warming that merely knowing my beliefs will stop them from reading any further. In spite of that possibility, I will proceed anyway since I write this paper for me and not for them.

I begin with a short discussion of my reasons for believing in global warming and for not believing the deniers.

## Why I Believe Global Warming is Real

My reasons, very much simplified, boil down to the following. (Reasons 1-6 are from National Geographic News, October 28, 2010)

1. Average temperatures have climbed 1.4 degrees Fahrenheit (0.8 degree Celsius) around the world since 1880, much of this in recent decades, according to NASA's Goddard Institute for Space Studies.
2. The rate of warming is increasing. The 20th century's last two decades were the hottest in 400 years and possibly the warmest for several millennia, according to a number of climate studies. And the United Nations' Intergovernmental Panel on Climate Change (IPCC) reports that 11 of the past 12 years are among the dozen warmest since 1850.
3. The Arctic is feeling the effects the most. Average temperatures in Alaska, western Canada, and eastern Russia have risen at twice the global average, according to the multinational Arctic Climate Impact Assessment report compiled between 2000 and 2004.
4. Arctic ice is rapidly disappearing, and the region may have its first completely ice-free summer by 2040 or earlier. Polar bears and indigenous cultures are already suffering from the sea-ice loss.

**5.** Glaciers and mountain snows are rapidly melting—for example, Montana's Glacier National Park now has only 27 glaciers, versus 150 in 1910. In the Northern Hemisphere, thaws also come a week earlier in spring and freezes begin a week later.

**6.** Coral reefs, which are highly sensitive to small changes in water temperature, suffered the worst bleaching—or die-off in response to stress—ever recorded in 1998, with some areas seeing bleach rates of 70 percent. Experts expect these sorts of events to increase in frequency and intensity in the next 50 years as sea temperatures rise.

My reason 7 is distilled from three books: *Earth's Climate: Past and Future*, William F. Ruddiman, 2<sup>nd</sup> edition, W. H. Freeman and Company, 2008; *Ice Ages, Solving the Mystery*, John Imbrie and Katherine Palmer-Imbrie, Harvard University Press, 1979; and *Global Warming and Political Intimidation*, Raymond S. Bradley, University of Massachusetts Press, 2011, as well as from my notes and recollections of Al Werner's course in Global Climate Change, Mount Holyoke College, Spring 2010.

## 7. Isotopic Ratios

We need to go on a little Chemistry 101 excursion.

Isotopes are atoms of elements that differ from each other in atomic weight but not in atomic number. For example, all carbon atoms have an atomic number of 6, meaning that every carbon atom has 6 protons in its nucleus. The atomic number of an element is the number of protons present in the nucleus of an atom of that element. If something happens to change the number of protons in the nucleus of a carbon atom, we may have a new atom, but it will not be an atom of carbon. If it is an atom of carbon, it must have 6 protons. Carbon atoms may, however, differ from one another in the number of neutrons their nuclei contain. Most carbon atoms have 6 neutrons. Since protons and neutrons have incredibly similar weights, the total atomic weight of a carbon atom with 6 protons and 6 neutrons is 12 (measured in atomic mass units, or amu's). A carbon atom with 8 neutrons would thus have an atomic weight of 14, from 6 protons and 8 neutrons. Taking a large sample of carbon atoms we can determine that the average atomic weight of carbon is roughly 12.011. Thus, a carbon sample must consist of a mix of atoms with a weight of 12 and some other, different weights. Carbon with a weight of 12, which scientists note as  $^{12}\text{C}$ , is much more prevalent (a ratio of 99 to 1) than is  $^{13}\text{C}$ . Many other carbon isotopes exist but they are not stable, that is to say that they radioactively decay into other isotopes of carbon or into other atoms of other elements. Interactions between nitrogen atoms and forms of high energy radiation from space produce a constant supply of  $^{14}\text{C}$  which has a half-life of about 5730 years. Since the production and decay rates of  $^{14}\text{C}$  are equal, the concentration of  $^{14}\text{C}$  in the atmosphere is constant.

So What? What do Isotopes Have to Do With Climate? It turns out that they have a lot to do with climate. The ratio of  $^{13}\text{C}$  to  $^{12}\text{C}$  is called the  $\delta^{13}\text{C}$ , short for delta (change in)  $^{13}\text{C}$ . For the mathematically

savvy among us, this definition is not correct but is actually given by 
$$\delta^{13}\text{C} = \left( \frac{\frac{\partial^{13}\text{C}}{\partial^{12}\text{C}}_{\text{sample}}}{\frac{\partial^{13}\text{C}}{\partial^{12}\text{C}}_{\text{normal}}} - 1 \right) \cdot 1000$$

parts per thousand, which is math for how much the concentration of  $^{13}\text{C}$  compares to the concentration of  $^{12}\text{C}$  in a particular sample differs from the normal concentration in the world, expressed as parts per

thousand. All we need to know here is that the  $\delta^{13}\text{C}$  in different materials is not constant. To be (hopefully) completely clear, photosynthesizing plants find it easier to uptake carbon dioxide when the carbon dioxide is made more from  $^{12}\text{C}$  than the heavier  $^{13}\text{C}$ . So, plankton blooms at the ocean surface tend to use up more  $^{12}\text{C}$  as they photosynthesize leaving the remaining sea water supply depleted in  $^{12}\text{C}$ , or, equivalently, enriched in  $^{13}\text{C}$ . If the ocean where the plankton lives is stratified, meaning warmer layers near the top and colder layers near the bottom, there is minimal mixing of surface and bottom layers. When the plankton dies and drifts to the bottom it takes a lot of  $^{12}\text{C}$  with it leaving the surface enriched in  $^{13}\text{C}$ . So, when the surface is warm, the surface water is enriched in  $^{13}\text{C}$  while in cooler surface waters the enrichment is less. (Whew.)

Animals living at the surface of the ocean then are going to incorporate carbon isotopes into their body structures in proportions dependent on surface temperatures. As the animals die, they sink to the bottom. Those body structures are captured in rocks, where those proportions provide a stand-in for a thermometer, what the scientists call a temperature *proxy*, in those rocks. Determine the age of a rock sample, using other proxies by the way, measure the  $\delta^{13}\text{C}$ , go to a table and get a good estimate of the surface temperature at the time the animal died.

Please note that this data is completely devoid of political interpretation. This data is similarly devoid of any political spin. It is clear, unambiguous, and straightforward. Further note that proxies exist by the dozens, perhaps hundreds, providing information on a wide-range of climate factors over widely ranging time scales. They are as fascinating as they are useful and the collective story they tell is compelling.

## Why I Believe the Deniers are Wrong

My reasons for believing deniers to be wrong were stated in *Scientific American Magazine*, in an article by John Rennie, published November 30, 2009. In that article, Rennie summarizes what he believes to be the major reasons for change deniability and summarizes the science showing those reasons to be incorrect.

**Claim 1: Anthropogenic  $\text{CO}_2$  can't be changing climate, because  $\text{CO}_2$  is only a trace gas in the atmosphere and the amount produced by humans is dwarfed by the amount from volcanoes and other natural sources. Water vapor is by far the most important greenhouse gas, so changes in  $\text{CO}_2$  are irrelevant.**

Although  $\text{CO}_2$  makes up only 0.04 percent of the atmosphere, that small number says nothing about its significance in climate dynamics. Even at that low concentration,  $\text{CO}_2$  absorbs infrared radiation and acts as a greenhouse gas, as physicist John Tyndall demonstrated in 1859. The chemist Svante Arrhenius went further in 1896 by estimating the impact of  $\text{CO}_2$  on the climate; after painstaking hand calculations he concluded that doubling its concentration might cause almost 6 degrees Celsius of warming—an answer not much out of line with recent, far more rigorous computations.

Contrary to the contrarians, human activity is by far the largest contributor to the observed increase in atmospheric  $\text{CO}_2$ . According to the U.S. Geological Survey, anthropogenic  $\text{CO}_2$  amounts to about 30 billion tons annually—more than 130 times as much as volcanoes produce. True, 95 percent of the releases of  $\text{CO}_2$  to the atmosphere are natural, but natural processes such as plant growth and absorption into the oceans pull the gas back out of the atmosphere and almost precisely offset them, leaving the

human additions as a net surplus. Moreover, several sets of experimental measurements, including analyses of the shifting ratio of carbon isotopes in the air, further confirm that fossil-fuel burning and deforestation are the primary reasons that CO<sub>2</sub> levels have risen 35 percent since 1832, from 284 parts per million (ppm) to 388 ppm—a remarkable jump to the highest levels seen in millions of years.

**Claim 2: The alleged "hockey stick" graph of temperatures over the past 1,600 years has been disproved. It doesn't even acknowledge the existence of a "medieval warm period" around 1000 A.D. that was hotter than today is. Therefore, global warming is a myth.**

It is hard to know which is greater: contrarians' overstatement of the flaws in the historical temperature reconstruction from 1998 by Michael E. Mann and his colleagues, or the ultimate insignificance of their argument to the case for climate change.

First, there is not simply one hockey-stick reconstruction of historical temperatures using one set of proxy data. Similar evidence for sharply increasing temperatures over the past couple of centuries has turned up independently while looking at ice cores, tree rings and other proxies for direct measurements, from many locations. Notwithstanding their differences, they corroborate that Earth has been getting sharply warmer.

A 2006 National Research Council review of the evidence concluded "with a high level of confidence that global mean surface temperature was higher during the last few decades of the 20th century than during any comparable period during the preceding four centuries"—which is the section of the graph most relevant to current climate trends. The report placed less faith in the reconstructions back to 900 A.D., although it still viewed them as "plausible." Medieval warm periods in Europe and Asia with temperatures comparable to those seen in the 20th century were therefore similarly plausible but might have been local phenomena: the report noted "the magnitude and geographic extent of the warmth are uncertain." And a new research paper by Mann and his colleagues seems to confirm that the Medieval Warm Period and the "Little Ice Age" between 1400 and 1700 were both caused by shifts in solar radiance and other natural factors that do not seem to be happening today.

**Claim 3: Global warming stopped a decade ago; Earth has been cooling since then. 1998 was the world's warmest year in the U.K. Met Office Hadley Centre's records; recent years have been cooler; therefore, the previous century's global warming trend is over, right?**

Anyone with even a glancing familiarity with statistics should be able to spot the weaknesses of that argument. Given the extended duration of the warming trend, the expected (and observed) variations in the rate of increase and the range of uncertainties in the temperature measurements and forecasts, a decade's worth of mild interruption is too small a deviation to prove a break in the pattern, climatologists say.

**Claim 4: The sun or cosmic rays are much more likely to be the real causes of global warming. After all, Mars is warming up, too.**

Astronomical phenomena are obvious natural factors to consider when trying to understand climate, particularly the brightness of the sun and details of Earth's orbit, because those seem to have been major drivers of the ice ages and other climate changes before the rise of industrial civilization. Climatologists, therefore, do take them into account in their models. But in defiance of the naysayers who want to chalk

the recent warming up to natural cycles, there is insufficient evidence that enough extra solar energy is reaching our planet to account for the observed rise in global temperatures.

**Claim 5: Climatologists conspire to hide the truth about global warming by locking away their data. Their so-called "consensus" on global warming is scientifically irrelevant because science isn't settled by popularity.**

It is virtually impossible to disprove accusations of giant global conspiracies to those already convinced of them (can anyone prove that the Freemasons and the Roswell aliens aren't involved, too?). Let it therefore be noted that the magnitude of this hypothetical conspiracy would need to encompass many thousands of uncontroversial publications and respected scientists from around the world, stretching back through Arrhenius and Tyndall for almost 150 years. (See this feature on “Carbon Dioxide and Climate,” by Gilbert N. Plass, from Scientific American in July 1959.) It is also one so powerful that it has co-opted the U.S. National Academy of Sciences, the Royal Society, the American Association for the Advancement of Science, the American Geophysical Union, the American Institute of Physics and the American Meteorological Society.

If there were a massive conspiracy to defraud the world on climate (and to what end?), surely the thousands of e-mails and other files stolen from the University of East Anglia’s Climatic Research Unit and distributed by hackers on November 20 would bear proof of it. So far, however, none has emerged. Most of the few statements that critics claim as evidence of malfeasance seem to have more innocent explanations that make sense in the context of scientists conversing privately and informally. It is deplorable if any of the scientists involved did prove to manipulate data dishonestly or thwart Freedom of Information requests; however, it is currently unclear whether that ultimately happened. What is missing is any clear indication of a widespread attempt to falsify and coordinate findings on a scale that could hold together a global cabal or significantly distort the record on climate change.

**Claim 6: Climatologists have a vested interest in raising the alarm because it brings them money and prestige.**

If climate scientists are angling for more money by hyping fears of climate change, they are not doing so very effectively. According to a 2006 Government Accountability Office study, between 1993 and 2004, U.S. federal spending on climate change rose from \$3.3 billion to \$5.1 billion—a 55 percent increase. (Total federal nondefense spending on research in 2004 exceeded \$50 billion.) However, the research share of that money fell from 56 percent to 39 percent: most of it went to energy conservation projects and other technology programs. Climatologists' funding therefore stayed almost flat while others, including those in industry, benefited handsomely. Surely, the Freemasons could do better than that.

**Claim 7: Technological fixes, such as inventing energy sources that don't produce CO<sub>2</sub> or geoengineering the climate, would be more affordable, prudent ways to address climate change than reducing our carbon footprint.**

Ted Nordhaus and Michael Shellenberger, Bjørn Lomborg and other critics of standard policy responses to climate change often seem to imply that environmentalists are obsessed with regulatory reductions in CO<sub>2</sub> emissions and uninterested in technological solutions. That interpretation is at best bizarre:



technological innovations in energy efficiency, conservation and production are exactly what caps or levies on CO<sub>2</sub> are meant to encourage.

The relevant question is whether it is prudent for civilization to defer curbing or reducing its CO<sub>2</sub> output before such technologies are ready and can be deployed at the needed scale. The most common conclusion is no. Remember that as long as CO<sub>2</sub> levels are elevated, additional heat will be pumped into the atmosphere and oceans, extending and worsening the climate consequences. As NASA climatologist James Hansen has pointed out, even if current CO<sub>2</sub> levels could be stabilized overnight, surface temperatures would continue to rise by 0.5 degree C over the next few decades because of absorbed heat being released from the ocean. The longer that we wait for technology alone to reduce CO<sub>2</sub>, the faster we will need for those solutions to pull CO<sub>2</sub> out of the air to minimize the warming problems. Minimizing the scope of the challenge by restricting the accumulation of CO<sub>2</sub> only makes sense.

## Our Attitudes Toward Global Warming

There are many of us who hold to views on climate change that evolve over time in response to our acquaintance with the facts and issues around that change. Those people hold views based on their understanding of the facts as they see them, and are willing to change those views as new facts or new understandings of those facts emerge. I will refer to those people as **Rational Adapters**. An adapter may believe that most climate change is as a result of normal and ongoing variations in normal climate conditions. But, when confronted by data showing, for example, a measured increase in the carbon-12 to carbon-14 ratio in the atmosphere since the onset of industrialization, a rational adapter will be perfectly willing to change his or her belief to conform to that new data and further, and most importantly, be comfortable with that new belief.

I believe that most of us view ourselves as being adapters. However, I also believe that many, if not most of us, are not.

There are also many of us who have no significant interest in climate change whatsoever. These are people who have not delved into the issue to any real extent at all beyond, perhaps, partially listening to casual and uninformed conversations. I will refer to these people as **Passive Resistors**. Some people may prefer the term "barstool experts." The passively resistant have no meaningful participation in our collective quest for understanding of climate change nor do they desire any such participation. A passive resistor may be heard to wonder why people are concerned about global warming given, say, that the recent winter was unusually snowy. The awareness of the global warming issue along with a concomitant decision to remain uninvolved and uninformed is the hallmark of the passively resistant.

The majority of people I know are, I believe, contentedly and passively resistant.

That leaves the third group, the group I find to be most interesting and perhaps the most dangerous. These are people who may or may not believe that the earth is warming but do not believe that climate change is anthropogenic and actively resist any data or any argument that suggests otherwise. I will refer to these people as **Active Resistors**. An active resistor may believe, for example, that anthropogenic warming cannot be due to increased carbon dioxide levels in the atmosphere since the amount of CO<sub>2</sub> present is already so big while the anthropogenically added amounts are so small, so small that the added CO<sub>2</sub> is completely insignificant. When presented with data that belies his or her beliefs, an active resistor may choose to simply ignore the data, or perhaps to question the reliability or impartiality of

the data, or even to ascribe a malicious intent to the assembler of the data. In mild cases, an active resistor may, for example, adopt a far-ranging theory about data corruption resulting from a wholesale anti-capitalist sentiment among climate researchers. In more extreme cases, an active resistor may verbally attack a data deliverer. I, personally, have been called a liar in public by an active resistor. Additionally, I know, albeit secondhandedly, of some people who, subsequent to a conversation with an active resistor have had their tires slashed or their houses egged. The actively resistant are those people who have made up their minds about global warming without regard to any data. The ideological choice to ignore, repudiate, or to question any data which suggests that anthropogenic global warming exists is the singularly most distinguishing characteristic of the active resistor.

It is of great interest to me that all of the passively or actively resistant people I know have largely made up their minds about climate change in the absence of any organized research or inquiry into the science of climate change. Their minds are made up first, before any examination or discussion of the facts. I find it fascinating that these people are able to spout off scientific irrelevancies from their luncheonette stools and make sometimes obtrusive, loud, and obnoxious pronouncements about something they have no knowledge of whatsoever. The readers of this paper who know me personally may also know that I am quite pessimistic about our collective future. I think now that a major concern I have about what lies ahead may be based on my suspicion that most people make up their mind about issues before examining them. This is a broader version of the notion that Ideology Trumps Rationality. I hope I am wrong.

The rest of this paper consist of my analysis of two major topics:

1. Why the latter two groups choose to be deniers in the first place, and,
2. What the processes are that each group uses in supporting and maintaining that denial.

The Rational Updaters need no further examination, at least here, and at least in my mind. As a close to this introduction, please, reader, do not expect this to be a scientific paper or anything resembling a scientific paper. It is, more than anything else, no more than an overblown equivalent of an Op-Ed. Remember, I write this paper to clarify my own thinking and my own views and not necessarily to present scientifically defensible conclusions.

## **The Passively Resistant**

I begin with some examples of passive resistors, all from my own experience.

"J", a friend of mine, is a small business owner in western Massachusetts. He works hard, he has a wonderful wife and home, and is active in the community. He is a classic example of the American middle-class. He once said to me that he knows that the biggest reason that I have a concern about global warming is that I am a political liberal. I asked him to tell me just what it is to be a liberal. He told me that a liberal is "someone who abuses the welfare system." I was dumbfounded. I was amazed at his complete lack of understanding of something so central to his politics. (By the way, I want to be clear. I do not abuse the welfare system. In fact, I generally support the expansion and modernization of the welfare system.) But "J", with the exception of the Boston Red Sox, his golf game, the amount he pays in property taxes and so on, lives in a world devoid of facts or even in any interest in facts. The newspaper is largely the sports section and, more recently, the obituaries. Local, national, and international news, op-ed, arts and so on are largely ignored. No issue is investigated and no idea is



explored. When I asked “J” if he had any interest in my facts about global warming, he chuckled and said "No Marty, I don't." He really did say this! He believes that global warming is a hoax but he has no interest in or any idea as to why. He is passively resistant.

Why the passively resistant choose to remain so is not much of a mystery. Some teachers, schools, and school systems have evolved to become agents or institutions that, perhaps unintentionally, but yet actively, discourage a fundamental interest in learning. Fundamentalist churches typically discourage any intellectualism, particularly as it diverges from literal interpretations of scripture. Some media personalities and politicians denigrate or even ridicule any divergence from anti-intellectualism. A google search on “emergence of anti-science thinking” yields a lot of hits. One hit was Rush Limbaugh, certainly a good example of an anti-science thinker, who recently said, "Don't be fooled by Debbie 'Blabbermouth' Schultz (Head of the DCC). She's just another member of the ruling liberal elite." Fox News also came up in hit after hit.

If Limbaugh and Fox are a major source of news, and they are for so very many the only source of news, this statement is powerful indeed. I believe that he and they bear a significant part of the responsibility for the nation's political and regulatory inactivity with regard to global warming. He and they are major promoters of passive resistance. But that is fodder for another paper.

When someone is passively resistant, I believe that he or she seeks a social comfort level found almost exclusively in the company of other passively resistant people. He or she is comfortable when steeped in a culture that will not question the science behind global warming and will not seek even to hear it. The passively resistant, for example, understand why people choose not to vote. We all hear that "It doesn't make any difference, they all morph into a shameless liberalism once elected." Or something like that. This statement, although very common, is consistently amazing for me to hear, particularly since I was elected to my hometown's school committee a couple of times. I did not know that I changed so much once elected. I did not know that once elected I instantly morphed into a member of the ruling liberal elite. My political philosophy did not change on the Wednesday morning following the election. For your interest, dear reader, I believe that some of my fellow school committee members were passively resistant.

I have some lingering and troubling questions about this whole issue of passive resistance. If the notion of a passively resistant class is correct, to what extent do the passively resistant dominate the discourse of our culture? If the passively resistant are a large faction of our society, what effect do their beliefs and attitudes have on our future prospects? What can be done, if anything, to make more of them Rational Adapters?

But now to the good stuff...

## **The Actively Resistant**

I will begin the second to the last section of this little diatribe with an exploration of the "why" behind the denial of climate change by the actively resistant. Some examples of active resisters may be helpful.

"A" is an acquaintance of mine, a recently retired high school teacher, who apparently spends much of his life playing rounds of golf from spring through fall followed by drinking beers in local neighborhood

bars. At the bars he does nothing but play Keno most of the time while also controlling the TV remote, switching endlessly back and forth, ad nauseam, between any available sports and FOX News. At one of these bars, populated by an almost completely passively resistant clientele, some mention was recently made, how I do not remember, of global warming. His face slightly reddened, the veins began to show in his neck, and he loudly hissed, to no one in particular but to everyone in general, that there was no such thing as global warming. As he went on, it became clear that the government, in his view, should do nothing, nothing to mitigate what he sees as naturally occurring climate cycles, nor, and perhaps of over-arching importance, should it do anything to support or validate what he sees as the left-wing, socialist, pro-regulation, anti free-market views of the effete, anti-capitalist, intellectual snobs who preach the global warming orthodoxy from the ivory tower of academe. I found his ferocity in holding to that opinion to be as troubling as it was impressive. When things calmed down a few days later, I approached him asking why he denied that the climate was changing anthropogenically. His answer was emblematic of the actively resistant. He believes that the amount of CO<sub>2</sub> in the atmosphere is so huge that any piddling amount added by burning fossil fuels is negligible. He thinks about his position to some extent, but chooses to ignore, dismiss, or ridicule any challenging information. I let this pass, for the moment. Some weeks later, I asked him if he would like to see some data about CO<sub>2</sub> additions to the atmosphere since the onset of industrialization. He stunned me with his curt and immediate response of "no." It became clear that my merely asking about global warming made me, in his eyes, deeply suspect, and probably one of those socialist, anti-capitalist, intellectual-snob believers in global warming. Incidentally, I know some of his past students. Through conversations with them, I learned that "A" is reasonably well read, well read in spite of his being addicted to televised sports as well as the widespread gambling attending those televised sports. I wondered how a college-educated man, particularly a social studies teacher who, presumably, would be acquainted with current societal affairs, could be so utterly and energetically wrong. I subsequently learned through conversations with "A" and with his ex-students that he was and is staunchly right wing.

My second example, "B," is a reasonably close friend of mine. He is an emeritus math professor from a local community college and we frequently host each other's families at dinner parties and so on. Our families share a common interest in theater, books, education, politics and current events. Remarkably, he reads the New York Times, the Boston Globe, the Wall Street Journal, and the Washington Times each and every day! At one dinner party, at his house this time, he asked me what I was doing recently that was interesting. I told him that I was shortly to undertake Al Werner's course on climate change at Mt. Holyoke College and that I was hoping to become radically more fluent in all the associated issues. "B" noticeably stiffened. I explained to him that I felt ill at ease about my preparative background when in conversations about global warming, that I had no broad overview of the current understanding of global warming issues, and that I hoped to gain a lot of information and a great deal more clarity about the entirety of global warming from the course. We ended the conversation on his tersely stated request that I "report" my findings to him at the course's end.

The semester went by and my hopes for information and clarity were more than fulfilled. Returning to "B"'s home, during the first bourbon old-fashioned, he almost immediately and stiffly asked if I had reached any conclusions about global warming as a result of my studies. I tried, being as calm and as forthright as I could be, to explain that in my mind, the preponderance of evidence pointing to the reality of global warming as well as its anthropogenic cause was overwhelming. I explained that the evidence and the facts made me a believer. He, interrupting my sentence, exploded. "Evidence, evidence, I have plenty of evidence too." He went on to summarize some of his evidence. "Climategate" showed

everything about the climate-science community to be questionable what with old friends reviewing the work of other old friends, researcher friends controlling money flows for other friend's research projects and so on and on, all inexorably pointing, in his mind, to a fundamental and almost criminal flaw in current scientific climate thinking. The climate community is a massive, inbred, socialist cabal desiring nothing less than a fundamental remake of the entirety of western society. The hoax of global warming provides the fulcrum for the socialist climate community to force changes in the very fabric of Western Civilization. His wife, not so discretely, kicked him under the table. I decided not to press on. The issue was, for the moment, dropped. As an aside, I know from years of friendship that "B" is also staunchly right wing.

My most extreme example is "C." He is not only staunchly right wing but he is aggressively and obnoxiously so. He once told me that he does not believe anything about global warming at all, and one of his main reasons for not believing any of it, is that he hates Al Gore! In hindsight, I regret that I chose not to explore that incredibly irrelevant hatred further. He is not interested in any data, in any facts, or in any line of logic. He knows only that anything outside the purview of the Republican Party, anything that of this writing is contrary to the views of any Republican presidential candidates (except John Huntsman) position, is anathema. Social Security, Medicare, Medicaid, the New Deal, all of it, is a socialist scam that perhaps could continue but only if privatized. In one particularly memorable conversation, he said that "Obamacare" was socialist. I asked him to tell me about socialists and socialism. He explained to me that a socialist is someone who wants to redistribute wealth, someone who wants to take money from the rich and distribute it to the poor. Robin Hood is the paradigmatic socialist! I found his abysmal ignorance about a notion so central to his political world-view to be both disturbing and alarming. He knows nothing and does not wish to know anything other than this about global warming or any global anything for that matter: any, any government action to develop a nationwide response to global warming is socialist. And because it is socialist, it is also communist, job killing, anti-capitalist and deeply unpatriotic. He detests governmental action of any sort beyond perhaps, just perhaps, providing police and fire protection and maintaining a department of defense, although it would be best if these were also privatized. For him, most big-government actions are total failures, and any evidence to the contrary should be damned. After all, everybody knows, for example, that most welfare recipients are parasitic, lazy, health-care freeloaders, who are also happy owners of flat-screen televisions. He adds that any trip to the Holyoke Hospital emergency room will prove him right. When confronted with the recently released data as to the unexplained 25% or so loss of money by private contractors in Iraq and Afghanistan, he simply looked the other way and stopped participating in the conversation. Better to ignore or demonize conflicting data than confront it. He also knows that his holy grail of unregulated free-markets is the only solution to any social, political, or economic ill. The following statement is, for him, the fundamental political truth: Any action, line of logic, or event of any kind that is counter to his right wing, extremist ideology, is and must be wrong. Any governmental action, any governmental program, will, in his mind, inevitably and inexorably result in abuse, waste, and exploitation of the program. Government, in his view, is the major causative factor in the decline of American civilization. He is anything but passive. He is actively resistant.

So, as I come to a turning point in this paper, I realize that I believe that most deniers are conservative, anti-intellectual, anti-science, and anti-government extremists. I also fully realize that maintaining the position I have about most deniers will require some vigorous support. For that support, I will retreat, for a while, to a more formal term-paper kind of process.

All I have addressed so far, by the way, is the development of the "why" behind the denying of climate change. The "how" will come later.

## Are Climate Change Deniers Politically Conservative?

According to a recent Poll conducted by the Yale Project on Climate Change Communication and the George Mason University Center for Climate Change Communication, called *Politics and Global Warming, Democrats, Republicans, Independents, and the Tea Party*, conducted April 23, 2011 to May 12, 2011 when asked their views on when global warming will begin to happen, 61% of Americans said "they have already begun to happen". This is a modest but real increase from 1997, when only 48% gave that response. However, while over three-fourths of Democrats (76%) in that poll believe global warming is already happening, only 41% of Republicans share that view.

Some relevant data from that study follows:

### Party Identification

	Number of Responses	Percent of Responses
Democrats	312	39
Independents	203	25
Republican	197	24
Tea Party	97	12
Total	809	100

**Global Warming Beliefs** (Following the lead of the study, I shaded those cells where the numbers are 10 percent or more above the National Average.)

**Question 47. Recently, you may have noticed that global warming has been getting some attention in the news. Global Warming refers to the idea that the world's average temperature has been increasing over the past 150 years, may be increasing more in the future, and that the world's climate may change as a result. What do you think? Do you think that global warming is happening?**

	National Average	Democrats	Independents	Republican	Tea Party
Yes	65	78	71	53	34
No	20	8	14	30	53
Don't Know	15	14	15	18	13

Almost 80% of Democrats (liberals) do think that global warming is happening while over 80% of Republicans and Tea Partiers (conservatives) do not. I realize that association does not equal causation but the difference is startling.

**Question 50. Assuming Global Warming is happening, do you think it is...**

	National Average	Democrats	Independents	Republicans	Tea Party
Caused Mostly by Human Activity	46	62	43	36	19
Caused Mostly by Natural Changes in the Environment	35	25	35	43	50
None of the Above Because Global Warming Isn't Happening	7	2	5	11	21
Other	12	11	17	10	9

Over 60% of liberals believe global warming is mostly anthropogenic while over 70% of tea partiers do not.

**Question 59. Which comes closer to your own view?**

	National Average	Democrats	Independents	Republicans	Tea Party
Most Scientists think Global Warming is Happening	41	55	46	29	10
There is a Lot of Disagreement Among Scientists About Whether or Not Global Warming is Happening	41	24	40	56	69
Most Scientists Think Global Warming is Not Happening	4	1	2	5	13
Don't Know Enough to Say	14	19	12	11	7

Well over 50% of liberals believe that most scientists believe global warming is real while essentially the same percentage of republicans and a nearly 70% of tea partiers believe in widespread disagreement in the scientific community.

**Question 60. How Worried Are You About Global Warming?**

	National Average	Democrats	Independents	Republicans	Tea Party
Very Worried	9	14	7	5	2
Somewhat Worried	45	58	46	33	22
Not Very Worried	27	20	33	33	25
Not at All Worried	20	8	14	29	51

Well over 50% of liberals are worried while over 50 of tea partiers are not.

**Question 70. When Do You Think Global Warming Will Start to Harm People in the United States?**

	National Average	Democrats	Independents	Republicans	Tea Party
They Are Being Harmed Now	31	45	33	16	9
In 10 Years	12	15	12	10	8
In 25 Years	14	18	13	13	6
In 50 Years	10	9	12	12	6
In 100 Years	12	7	11	16	20
Never	22	7	18	33	51

To summarize the data so far, despite all of the attention given to global warming in the media, including coverage of the IPCC (Intergovernmental Panel on Climate Change) reports, conservatives are likely to believe that global warming is not happening while liberals largely conclude that it is.

The data also shows that liberals are more likely to believe that the effects of global warming have already begun, as have independents. Independents are generally closer to Democrats than to Republicans in seeing global warming as already happening.

According to many news reports I have read and heard, when polled, 0% of the recently elected republican (2010) first-year members of the House of Representatives believe that global warming is happening. As of this writing, no republican candidate for president other than John Huntsman believes anything about global warming at all. According to Raymond S. Bradley of the Climate System Research Center at UMass Amherst, writing in the UK Guardian, Mitt Romney recently retreated from a mild concern about global warming since it was causing erosion in his support among the republican base. He further added that "to a large fraction of the Republican party, this (admitting to global warming) is a completely unacceptable position - ranking alongside gay marriage, gun control, and abortion rights. Anthropogenic climate change has become a litmus test for the republicans in the United States."

I googled "Scott Brown on Global Warming." Masslive.com reported as follows: "BOSTON — The League of Women Voters is launching an advertising campaign faulting U.S. Sen. Scott Brown for



voting with other Senate Republicans to ban the Environmental Protection Agency from controlling gases blamed for global warming." Even blue Massachusetts is not immune.

Enough said about conservatives and global warming. How about progressives? According to the website Mother Nature Network (not the first thing that comes to my mind when thinking of the liberal elite establishment), a total of only five national democratic members of congress have expressed strong reservations about global warming. They are: Louisiana Sen. Mary Landrieu, Oklahoma Rep. Dan Boren, Minnesota Rep. Collin Peterson, Nebraska Sen. Ben Nelson, and West Virginia Rep. Nick Rahall. I will not detail any analysis of their backgrounds or of their funding sources, but I would like to note that five of the democratic members of the entire democratic congressional delegation constitutes a small portion indeed.

Enough said about political leaning and global warming, liberals typically believe in it while conservatives typically do not.

## Who Are the Climate Change Deniers?

Again from the Yale/George Mason Poll...

### Question 73. How important is the issue of global warming to you personally?

	National Average	Democrats	Independents	Republicans	Tea Party
Extremely Important	8	11	6	6	1
Very Important	15	21	17	9	6
Somewhat Important	39	48	39	31	28
Not too Important	23	16	25	32	26
Not at All Important	15	4	12	23	39

Given the abundance of contested issues around the world today, I was not surprised to find so many thinking that global warming is somewhat important. The tea party did not surprise me either particularly in light of their beliefs detailed above, but the almost 40% who think it not at all important is a large number.

I looked through the poll to find indicators of attitudes towards government actions.

**Question 122. (We should add) a \$1.50 fee to our monthly electric bill to fund local programs to save energy.**

	National Average	Democrats	Independents	Republicans	Tea Party
Strongly Support	12	19	11	6	4
Somewhat Support	36	43	36	33	22
Somewhat Oppose	26	24	28	28	21
Strongly Oppose	26	15	25	33	53

53% of the tea party are strongly opposed while 21% are somewhat opposed. Almost 75% are opposed.

**Question 124. A 10-cent fee (should be) added to each gallon of gasoline you buy, to fund local programs to improve public transportation.**

	National Average	Democrats	Independents	Republicans	Tea Party
Strongly Support	7	11	10	1	0
Somewhat Support	21	28	18	16	11
Somewhat Oppose	26	27	27	25	19
Strongly Oppose	47	34	45	58	70

There is obviously a lot of opposition to this idea yet conservatives are most markedly opposed.

In a series of additional questions, poll respondents were asked to state their preferences with regard to additional local initiatives. Although I will not detail those questions here, I was not surprised to find that the tea partiers were strongly and uniformly opposed to all of them.

By way of more general issues...

**Question 243. Overall, do you think that protecting the environment:**

	National Average	Democrats	Independents	Republicans	Tea Party
Improves economic growth and provides new jobs	57	72	56	46	31
Has no effect on economic growth or jobs	25	20	22	30	36
Reduces economic growth and costs jobs	18	8	21	25	33

**Question 244. When there is a conflict between environmental protection and economic growth, which do you think is more important?**

	National Average	Democrats	Independents	Republicans	Tea Party
Protecting the environment, even if it reduces economic growth	64	78	66	51	44
Economic growth, even if it leads to environmental problems	36	22	34	49	56

The results of questions 243 and 244 show a distinct pro-environment posture among liberals and a distinct pro-economy posture among conservatives.

By way of behaviors associated with global warming...

**Question 40a. Over the next 12 months, how likely are you to change most of the light bulbs in your house to energy-efficient compact fluorescent lights?**

	National Average	Democrats	Independents	Republicans	Tea Party
Yes, I'd like to and probably will	36	43	32	36	22
Yes, I'd like to but probably won't	29	32	28	30	20
No, I don't want to	24	11	26	26	54
I don't know	11	14	14	9	5

**Question 211a. If you were to contact government officials about global warming, would you:**

	National Average	Democrats	Independents	Republicans	Tea Party
Urge them to take action to reduce it	72	92	71	55	33
Urge them not to take action to reduce it	15	2	13	28	43
Other	13	6	16	17	25

The pattern is as clear as it is stark. The Tea Party is at odds with the nation as a whole and with liberals in particular.

Some more data sets, these having to do with trust in information sources.

**Question 161. How much do you trust the following as a source of information about global warming?**

**Television weather reporters...**

	National Average	Democrats	Independents	Republicans	Tea Party
Strongly trust	5	9	4	3	1
Somewhat trust	46	55	45	38	33
Somewhat distrust	34	28	35	41	38
Strongly distrust	15	8	16	19	28

**The mainstream news media...**

	National Average	Democrats	Independents	Republicans	Tea Party
Strongly trust	4	7	2	2	0
Somewhat trust	33	48	30	26	9
Somewhat distrust	36	33	42	36	38
Strongly distrust	27	13	27	36	53

**President Obama...**

	National Average	Democrats	Independents	Republicans	Tea Party
Strongly trust	12	27	6	3	1
Somewhat trust	35	55	35	18	4
Somewhat distrust	22	13	30	28	18
Strongly distrust	31	6	29	51	77

The Tea Party distrusts President Obama more than the Democrats trust him.

**The Environmental Protection Agency...**

	National Average	Democrats	Independents	Republicans	Tea Party
Strongly trust	15	25	13	7	4
Somewhat trust	46	55	43	47	24
Somewhat distrust	25	16	31	30	31
Strongly distrust	13	4	12	16	41

**The Centers for Disease Control and Prevention...**

	National Average	Democrats	Independents	Republicans	Tea Party
Strongly trust	15	21	13	10	5
Somewhat trust	55	61	57	55	33
Somewhat distrust	22	15	24	24	39
Strongly distrust	8	2	6	11	23

**The National Park Service...**

	National Average	Democrats	Independents	Republicans	Tea Party
Strongly trust	13	17	12	10	6
Somewhat trust	63	68	64	62	46
Somewhat distrust	18	13	19	19	32
Strongly distrust	6	1	5	9	16

I continue the data presentation with some demographics.

**Age**

	National Average	Democrats	Independents	Republicans	Tea Party
18-29	18	21	15	21	10
30-44	25	27	28	23	20
45-59	29	26	32	28	38
60+	27	27	26	28	32

As we can see, Tea Partiers tend to be older.



### Education

	National Average	Democrats	Independents	Republicans	Tea Party
Less than High School	10	12	10	8	9
High School	29	33	28	25	27
Some College	29	24	27	36	35
Bachelor's or Higher	32	31	35	32	29

There are no apparent major differences in education.

### Race

	National Average	Democrats	Independents	Republicans	Tea Party
White, Non-Hispanic	71	53	77	86	86
Black, Non-Hispanic	11	23	7	1	2
Other, Non-Hispanic	6	6	7	5	6
Hispanic	11	17	9	8	4
2+ Races, Non-Hispanic	1	2	1	1	2

Conservatives tend to be “whiter” than liberals.

### Gender

	National Average	Democrats	Independents	Republicans	Tea Party
Male	47	41	52	49	56
Female	53	59	48	51	44

Democrats are more likely to be female and Tea Partiers are more likely to be male.

### Question 259. Would you describe yourself as being “born-again” or evangelical?

	National Average	Democrats	Independents	Republicans	Tea Party
Yes	26	21	20	31	46
No	69	71	76	65	53
Don't know	5	8	4	4	1

Almost 50% of tea partiers, almost 33% of republicans, and about 20% of democrats are evangelical.

**Question 233. Human beings, as we know them today, evolved from earlier species of animals.**

	National Average	Democrats	Independents	Republicans	Tea Party
Strongly Agree	24	28	31	16	14
Somewhat Agree	31	34	26	35	20
Somewhat Disagree	16	18	20	10	14
Strongly Disagree	29	20	23	39	52

Over 50% of tea partiers do not believe in evolution.

And finally, some data about the role of the individual versus the role of government.

**Question 229. If the government spent less time trying to fix everyone's problems, we'd all be a lot better off.**

	National Average	Democrats	Independents	Republicans	Tea Party
Strongly Agree	33	17	35	40	63
Somewhat Agree	38	38	39	43	26
Somewhat Disagree	22	31	19	15	9
Strongly Disagree	8	14	7	3	2

**Question 230. Our government tries to do too many things for too many people. We should just let people take care of themselves.**

	National Average	Democrats	Independents	Republicans	Tea Party
Strongly Agree	22	8	21	34	45
Somewhat Agree	39	34	47	43	30
Somewhat Disagree	28	39	25	20	17
Strongly Disagree	11	19	8	3	8

**Question 231. The government interferes too much in our everyday lives.**

	National Average	Democrats	Independents	Republicans	Tea Party
Strongly Agree	28	11	31	40	58
Somewhat Agree	41	37	47	47	26
Somewhat Disagree	26	43	18	13	14
Strongly Disagree	5	9	4	1	2

The differences are stark.

**Question 232. Government regulation of business usually does more harm than good.**

	National Average	Democrats	Independents	Republicans	Tea Party
Strongly Agree	21	9	20	26	50
Somewhat Agree	40	35	39	50	37
Somewhat Disagree	30	39	32	23	12
Strongly Disagree	10	18	10	1	1

The differences are stark again.

**Question 234. People should be allowed to make as much money as they can, even if it means some make millions while others live in poverty.**

	National Average	Democrats	Independents	Republicans	Tea Party
Strongly Agree	23	10	22	34	49
Somewhat Agree	33	29	35	41	24
Somewhat Disagree	29	39	28	19	20
Strongly Disagree	15	22	15	6	7

What all this data shows, it seems to me, is that liberals tend to believe that global warming is anthropogenic and that it is appropriate for government to do something about it. It also shows that conservatives do not believe in anthropogenic global warming and that it is not appropriate for government to take any action, not only about global warming, but about much of anything else.

I find it to be very disturbing that the division in belief and the division in the role of government is so marked.

## How Does Deniability Work?

There are a lot of sources of information on this issue but many of those sources are, in my opinion, pretty superficial in their analyses. A good example is Denialism.com. It proposes the following (I have paraphrased much of their proposal):

There are basically five methods employed by deniers: Conspiracy, Selectivity, False Experts, Impossible Expectations/Moving Goalposts, and Argument from Metaphor/violations of informal logic.

**Conspiracy** suggests that scientists are involved in some sort of network that is set up and maintained to foist some untruth on non-scientific society. The conspirators seek to maintain some set of beliefs by suppressing or hiding conflicting data. But conspiracy theorists do not seem to understand that science in general thrives on controversy. Scientists are skeptics by their very nature. They find that information that challenges or refutes commonly held ideas is stimulating, intellectually invigorating, and in need of widespread publication. The biggest problem with conspiracy is that hundreds or even thousands of people would have to be involved. Just take measurement of earth surface temperature by satellite for example. Would every employee of NASA agree to maintain secrecy about the falsehood of their published data? And, by the way, to what end?

**Selectivity** suggests that denialists will cite sources supporting their viewpoint or cite sources that have been found to be flawed or based on weak research. Selectivists will use these sources as a reason to doubt the entirety of the field. As an example, since the retreat of the Himalayan glaciers has been slower than predicted, the entirety of climate science must be wrong, or since the IPCC report contained three errors, the entirety of the report is wrong. I guess that since the Manhattan phonebook probably contains some errors, the whole thing should be discarded. Science, unlike most other disciplines, never discards anything. Once a journal article is published on a website for example, it is rarely if ever withdrawn. It stays there and supplies fodder for more and more selectivist exploitation. Scientists must develop ideas that incorporate all of the data, not just the data supporting a position they prefer.

**False Experts** are scientists, not necessarily climate scientists, who make unsubstantiated claims about evidence which may be faulty in its own right, and use those claims to discredit the entirety of climate science. As an example, Michael Crichton, an M.D. from Harvard Medical School and author of many books including Jurassic Park, maintains that the evidence for global warming is weak and that concern about warming is a fad. I wonder, would we go see a climate scientist about our chest pains?

**Impossible Expectations/Moving Goalposts** uses the absence of complete and mature knowledge to argue against the implementation of policies or against the acceptance of an idea. It argues that no action can be reasonably taken unless the subject is understood completely and totally. Consider that gravity has been suggested to be the reflection of curved space or intermediated by masses interchanging particles called “gravitons.” Gravity is not completely or totally understood so it is perfectly reasonable to walk a tightrope across the Grand Canyon without a safety net.

**Argument from Metaphor and Violations of Logic** The metaphor is a useful tool for explaining ideas in common sense terms. But a metaphor is not an argument and it does nothing to strengthen or weaken any position. For example, the statement that five million monkeys at five million typewriters could produce the works of Shakespeare in five million years may or may not be true, but it does not prove

that sooner or later anything and everything can happen. Science is not about who has the best metaphor. Data trumps metaphor every time.

As I said earlier, although these discussion points are certainly valid and although they certainly pertain to denialism, they are pretty superficial. An explanation of the concept of motivated reasoning follows, and motivated reasoning is, I believe, central to understanding the mechanics of climate change denial.

## Motivated Reasoning

Motivated reasoning is a fairly new idea in social psychology. I took a course in social psychology in 1965 or so. Motivated reasoning was not even mentioned.

I begin with a discussion of the failure of an end-of-the-world prophecy and the aftermath of that failure. This information was gleaned from Providentia.com in a July 13, 2008 article entitled After the Prophecy (author was not cited).

Born in 1900 in Mount Shasta, California, Dorothy Martin was a housewife in Chicago when she first came to national attention. She had a long-standing interest in psychic phenomena and Theosophy (any of the various forms of religious or philosophical thought based on a mystical insight into the divine nature, according to Dictionary.com). She first came in contact with the super-beings from the planet Clarion through her experiments in automatic writing. Through these beings, the most important of whom was her personal mentor, Sananda, she learned that a great flood was to strike the Chicago area just before dawn on December 24, 1954. The flood would form an inland sea stretching from the arctic to the Gulf of Mexico. The associated cataclysm would also destroy the west coast from Seattle down through South America. A flying saucer would come to rescue only those who were true believers.

Martin had become heavily involved with a local flying saucer cult known as “The Seekers.” Martin and the Seekers responded eagerly to the messages from Sananda and the other Clarions and attempted to warn the public of the onrushing disaster. A social psychologist, Leon Festinger, learned of Martin and the Seekers in a local newspaper story. Festinger and two of his colleagues, Stanley Schacter and Henry Riecken, interviewed Martin in October, 1954. Given that she was making a prediction about a specific future event, Festinger and the others decided to carry out a field study examining apocalyptic belief. That study was detailed in a book entitled When Prophecy Fails. They infiltrated the group and provided a look into the Seekers before and after December 21.

On December 20, a group of 15 to 20 Seekers gathered at Martin’s house to await their salvation. Sananda had told Martin that the Clarions would come at midnight to take them to their new home. The book describes the suspense as midnight approached and the growing disappointment as the night wore on. Finally, at 4:45, Martin received a message from the Clarions saying that the cataclysm had been called off by the “God of Earth.” Evidently, the Seekers had so deeply impressed the “God of Earth” with their faith and devotion that the human race was spared as a result.

In an excellent article in Mother Jones dated May/June 2011 called The Science of Why We Don’t Believe in Science, the author Chris Mooney explained how the Seekers struggled for an explanation. When that explanation came, from the “God of Earth,” the group entered a period of vigorous evangelizing and proselytizing. “Their sense of urgency was enormous” wrote Festinger. What is most

important to understand about the aftermath of the cosmic jilting by the Clarions, however, is that the devastation of all that the Seekers had believed made them even more certain, more convinced of the truth of their beliefs!

As I write this, the date is October 17, 2011. Yesterday, while doing some errands, I heard a radio report about another end-of-the-world prophecy from Harold Camping, a radio evangelist who, on his Family Radio Network website, recently announced that the end of the world is scheduled for this Friday, October 21, 2011. This caught my attention because Camping already had his “fifteen minutes of fame” when he predicted that the end of the world would occur on May 21, 2011. I include this information, not because of its relation to global warming, but because of the example it provides of what people are capable of adopting as truth. Camping evidently is a trained engineer and used some mathematics to develop his May 21 prediction. It goes something like this. In the Bible, the number 5 represents atonement, 10 represents completeness, and 17 represents heaven. Christ hung on the cross according to Camping on April 3, 33. If we add 1978 years we come to the date of April 1, 2011. Note that 1978 times 365.2422 (the number of days in a solar year) equals 722, 449 days. Camping noticed that  $(5 \cdot 10 \cdot 17)^2$  or  $(\text{atonement} \cdot \text{completeness} \cdot \text{heaven})^2$  equals 722, 500. Since we can add 51 to 722, 449 to get 722, 500, we can add 51 days to April 1, 2011 to get the end of the world date of May 21, 2011! As preposterous as all this is, keep in mind that many people sold their houses and shed all their worldly possessions to get ready for that date. People are capable of adopting a great, great deal as truth.

Denial does not come much more extreme than the denial by the Seekers. Many lost their jobs, many were mocked in the press, and an attempt was made to keep them away from and isolated from children. Since Festinger’s day, an array of new discoveries in psychology and neuroscience have continually demonstrated that our preexisting beliefs, more than any new facts, can skew both our thoughts and our most dispassionate beliefs and logical conclusions. This tendency to filter our thinking processes through layers of already accepted belief is called Motivated Reasoning. It helps to explain the polarization that exists about matters where the evidence is so clear: climate change, the relationship between vaccination and autism, “death panels,” the birth place of President Obama, the religion of President Obama, and so on and on. Mooney adds “It would seem that expecting people to be convinced by the facts flies in the face of, you know, the facts.”

To directly quote Mooney: “The theory of motivated reasoning builds on a key insight of modern neuroscience: Reasoning is actually suffused with emotion (or what researchers often call “affect”). Not only are the two inseparable, but our positive or negative feelings about people, things, and ideas arise much more rapidly than our conscious thoughts, in a matter of milliseconds—fast enough to detect with an EEG device, but long before we’re aware of it. That shouldn’t be surprising: Evolution required us to react very quickly to stimuli in our environment. It’s a “basic human survival skill,” explains political scientist Arthur Lupia of the University of Michigan. We push threatening information away; we pull friendly information close. We apply fight-or-flight reflexes not only to predators, but to data itself. We’re not driven only by emotions, of course—we also reason, deliberate. But reasoning comes later, works slower—and even then, it doesn’t take place in an emotional vacuum. Rather, our quick-fire emotions can set us on a course of thinking that’s highly biased, especially on topics we care a great deal about.”



I would like to recall the responses to questions about the role of government versus the role of individuals in the survey done by Yale and George Mason Universities. 53% of the tea partiers do not believe that global warming is even happening while 78% of the democrats do. Even if it was happening, 50% of the tea partiers believe it is not anthropogenic while 62% of democrats do. Tea Partiers are similarly and largely unconcerned about global warming and they do not believe that it will do us any harm. Tea Partiers are strongly opposed to governmental action to ameliorate its effects. Additionally, Tea Partiers tend to not believe main stream media or government information sources. The data further suggests that the Tea Party deniers are largely conservative, white, men.

Dan Kahan, a law professor at Yale wrote a paper published on 1/1/2007 called *Culture and Identity-Protective Cognition: Explaining the White Male Effect in Risk Perception*, and available on the web at the Yale Law School Legal Scholarship Repository. He has some interesting things to say about conservative, white, males. “We propose that variance in risk perceptions, across persons generally, and across race and gender in particular, reflects a form of motivated cognition through which people seek to deflect threats to identities they hold, and roles they occupy, by virtue of contested cultural norms. ‘Motivated Cognition’ refers to reasoning done in service of justifying an already held belief or goal. It explains why the conservative, white, men who know the most about climate science are the most likely to reject it, they learn about it *in order* to reject it... Point being, when facts or the implication of those facts threaten people’s identities, they tend to dismiss the facts rather than the identity.”

I do not think it to be a major leap to suggest that Tea Partiers have an elaborate and potent set of preconceptions. If motivated reasoning is a correct notion, both it and those preconceptions explain a lot of the energy and angst about global warming. The conservatives in general and the Tea Party in particular are applying “fight or flight reflexes...to data itself.”