GLOBAL WARMING FOR DIM WITS

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A SCIENTIST'S perspective of CLIMATE CHANGE

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PREFACE

When the globe came out of the last ice age 20,000 years ago, do you think the earth's inhabitants were aware of it? Do you believe that they could tell that the earth was warming? Neanderthal man by this time was extinct. Homo sapiens thrived in an extremely cold European climate. The Americas were beginning to be populated as low sea levels and a frozen Bering Sea formed a land bridge from Asia to Alaska.

Today, there seems to be a lot of concern by the earth's population about global warming and climate change. Governments appear to be on the brink of spending trillions of dollars to try to stop it. It took 10,000 years to come out of the last ice age. If we know anything about climate change, we know that it changes very slowly. Human beings live for about 70 years. Back 20,000 years ago, human life span was most probably not

that long, maybe 40 or 50 years. Certainly, ten generations would have been less than 1000 years. So, let me ask the question again. Do you think Homo sapiens knew that the climate was changing 20,000 years ago, when they went about their daily routine and lived for, say, 50 years or so? Is it probable that a grandfather said to his grandchild, "You know, when I was little, it was a lot colder around here"?

Perhaps a better question is: do you think it is possible to detect any kind of climate change by studying global temperature for 150 years? Considering that it takes about 10,000 years for the earth's climate to change, it almost seems like a silly question, like asking whether it would be scientifically valid to study ocean tides for a two-hour period? I guess the next question would be: do you think it makes any sense whatsoever to spend one dime trying to stop the climate from changing?

In the past 400,000 years the climate of the earth has changed only four times. All scientific data point to the fact that this change is controlled externally, occur-

ring approximately every 100,000 years. During one of these cycles, the earth spends about 10,000 years or less in a warm period, such as the period we are experiencing today. Then the climate slowly drops back to ice age and remains there for about 80,000 years. Finally, very rapidly over a 10,000-year period (10,000 years is rapid on a global time scale) the globe returns to the warm period. Scientists have suggested that this cycling of going in and out of ice age every 100,000 years that we know we have been in for at least the last 400,000 years has occurred only twice in Earth's known history – now, and a period 300 million years ago. These are the only two periods in the last 600 million years when atmospheric CO_2 levels were less than 400 ppm and global temperatures were the same as they are today. During the whole 100,000-year cycle, the temperature of the globe continuously wiggles up and down about two degrees Fahrenheit over a period lasting about 200 to 300 years. For the past 150 years, we have been experiencing one of these up-wiggles.

This book was written to convince you that this wiggling of temperature of about 2 or 3 degrees Fahrenheit has nothing to do with climate change. What causes this temperature wiggle is not known? It may simply be static (what scientists call noise). Certainly, greenhouses gases may have some part in the process, but they are not a major player. We know this because the mathematical relationships connecting global temperature to greenhouse gas levels, if greenhouse gases were a major player, are simply not there. We also know that the inhabitants of the planet do not cause it and cannot stop it, as evidenced by the fact that it has been going on for at least 400,000 years. Moreover, it is not possible for creatures of 70 years or so to detect climate change, unless some catastrophic event such as being hit with a comet or asteroid took place. Trying to perceive events that occur over a 10,000-year period is not within the realm of our experience.

The fact that global temperature has risen 1.4˚F or so in the last 150 years, or the fact that global temperature

has not increased since 1998 proves only two things scientifically: that global temperature has risen 1.4˚F or so in the last 150 years and that global temperature has not increased since 1998. It is not evidence that the temperature of the globe will continue to rise, fall, or go side-ways. And it certainly is not proof that the climate is changing. If any human being produces evidence that the climate is presently changing, that evidence we know is not related to climate change. We can only determine climate change by looking at the past. It's like watching a tree grow. We cannot see it happening. We only know it has happened by observing that the tree is taller at some later date. Who knows? The Earth may have started its trek back to ice age. Perhaps in 10 generations, humans will notice the climate change by looking back in time.

This book is not a scientific textbook. It was written in plain language for the layperson that wishes to learn about the science of climate change. While the language does get a little technical in some sections, every attempt was made to keep the science simple and understandable.

Anyone who needs further information about a term or concept is urged to refer to the *Glossary*.

One of the most upsetting aspects of the global warming debacle is the misinformation being given to our children by individuals who should know better. I am hoping that this book becomes a popular read for children. Believe me, they are extremely intelligent and will understand it. Moreover, it should convince them that, contrary to popular belief, the oceans will not rise and flood the land; the polar bears will survive just fine; carbon dioxide is no more a pollutant than is water – plants need it to survive; we should stop burning fossil fuels, not because they produce CO_2, but because they are precious and momentary; we should protect the environment, not control it, because we are part of it; climate change is a natural event that human beings cannot control; and most importantly that they are safe and that the sky is not falling .

No one writes a book in a vacuum. I have been working in this area of science for a number of years, and

there are a number of people that I must thank. First, I would like to thank Professor Gregory Kowalczyk, an Environmental Analytical Chemist and colleague of mine at Southern Connecticut State University, for allowing me to bounce my ideas off him. Our many discussions and his valuable input are major reasons why I wrote this book.

I also would like to thank some individuals who reviewed the manuscript and made valuable suggestions: Mr. David Whalen, Mrs. Sharon Barrante Adkins, and Ms. Kimberly Barrante. A special note of thanks is due my son, Mr. Stephen Barrante, for his valuable suggestions concerning the layout of the book and for his beautiful cover design. To Jeff Young, Christie Mayer, and the people at BrownWalkerPress/Universal Publishers, thanks for taking on this project and producing a quality product. And finally, I would like to thank my wife, Marlene, who has put up with me during the process of writing the book and for her thoughtful input. I could not have done this without her.

I take full responsibility for any errors found in the book. If you stumble on any, I would appreciate your pointing them out to me at jim@tenwheeler.net.

James R. Barrante
Cheshire, CT
January, 2010

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I DARE YOU TO TEACH ME

When asked to describe the chemical properties of water on a basic chemistry exam, a student in my class once answered, "Water is made up of two elements, H and O." Then, with a stroke of genius, the young man went on to add, "To make holy water, you have to take regular water and boil the H out of it."

It is estimated that the human brain consumes about 10 grams of the sugar glucose in an hour. It "burns" this sugar to produce carbon dioxide and water and energy. If one calculates the power output of this process, one will

find that it is equivalent to about 40 watts. That is, the human brain is about as "bright" as a 40-watt light bulb. We humans, all of us, are definitely "dim wits" – a lot of heat and not much light. Frankly, it is amazing that the human race has survived as long as it has.

This book was written for dim wits. The dictionary defines a dimwit as a stupid or silly person. That definition doesn't apply in this case. As a physical scientist and somewhat knowledgeable in the physical chemistry of the atmosphere, I am going to re-define a "dim wit" as someone who believes that greenhouse gases, and in particular carbon dioxide, could actually control the climate. Such individuals generally fabricate their version of science to fit their own agenda. When it comes to dim wits, there is a lot of truth to the old saying, "in one ear and out the other!"

I found after being a university chemistry professor for over 40 years that it is nearly impossible to educate individuals who do not desire to be educated. Dim wits, for some particular reason, hold on to a science that has

not been tested experimentally and in many cases is known to be wrong. Unfortunately, many of our politicians fall into this class, and this is dangerous, since they have the power to control our lives.

"Good" science is based on the scientific method. The scientific method is very simple to understand. One first proposes a theory. Then one takes the theory into the laboratory and tests it by experimentation to see if the experiments give outcomes that are consistent with the theory. If they do not, then the theory is not valid. It's as simple as that. One then can either throw out the theory as being bogus or modify the theory and try again. As the famous American physicist Richard Feynman once said about scientific theory, and I'm paraphrasing, "It doesn't depend on how many people believe it, who believes it, how famous the person is who proposes it, or how clever or correct the theory sounds. If it doesn't hold up to scientific experimentation, it's false."

A computer model is not based on the scientific method, unless it can be tested experimentally – a very

difficult thing to do. This is because computer models generally contain a number of "if-then" statements – if this happens, then that will happen. Also, we must keep in mind that a computer is no more intelligent than the person who programs it, and that limits its computing power to 40 watts. For example, most of the predictions about the consequences of global warming made at Kyoto have not happened, and many have been found to be wrong. In fact, a number of those scientists involved in the original work at Kyoto are now having second thoughts about their work. Moreover, not one computer model correctly predicted that the globe would stop warming in the late 90's. How could it? It would be like asking a computer to predict the exact date and time a particular leaf will fall from a tree, or who will find the candy bar with the golden ticket. It simply cannot be done with any precision.

And just to set the record straight: when it comes to climate change, there is no more scientific significance in the fact that global temperature has not changed in the

last ten years, than in the fact that global temperature has increased a degree in the last 100 years. It is not well publicized, perhaps intentionally, that in the last 100,000 years global temperature has risen as least 0.8˚C in a 150-year time period thousands of times. So there is nothing unusual or different about the increase in global temperature from the mid-1800s to the present.

One of the most difficult things with which a scientist is faced when he or she studies the universe, is to correctly define the boundaries around that portion of the universe that he or she intends to study. Even the best-trained scientists have trouble with this. Some areas of science refer to this as distinguishing the signal from the noise. Incorrect boundaries around systems can lead to erroneous interpretations of experimental results, or even to performing the wrong experiments in the first place.

A good example of this is the idea that hot water freezes faster than cold water. If you do the experiment with identical amounts of water, one at, say, 90˚F and the other at 50˚F, both under the same cooling conditions,

you will find that sometimes the hotter water will freeze before the colder water. This has become known as the *Mpemba Effect*. How is this possible? It sounds counter intuitive. The simple answer is that the boundaries of the systems are different. One is assuming erroneously that the only difference between the hot and cold water is their average temperature. Not so! Hot and cold water are much different from each other – things like evaporation effects, convection effects, and surface effects must also be included, along with temperature. So actually, the effect is a comparison of apples and oranges.

Consider another example: Is it valid to make predictions about future climate changes based on the behavior of the climate over a 200-year period? Is there any difference between looking at global temperature for a 200-year period and looking at global temperatures for a week or an hour? If I were to tell you that the fact that it is warmer today than it was yesterday is proof that the climate is changing, you hopefully would say that the observation is ridiculous. Daily temperature changes are not

proof of climate change. If I were to tell you that the fact that it is warmer in July in New York City than it is in December is proof of global warming, again I hope you would say that the observation is insane. Seasonal temperature changes are not proof of climate change. How do we know this? We know this because it is not consistent with our experience. If I were to say that it is warmer today on the average than it was 150 years ago, is that proof of climate change? I bet that many people would say that it is.

But why is this any different from the previous statements? Could it be because we are creatures of 70 years or so (if we are lucky) and 150 years seems to us like a long period of time? To a tree, 150 years is more like 20 or 30 of our years. To the earth, 150 years is a blink. On a global time scale, there is no measurable difference between 150 years and 1 minute. It would be same as asking humans to distinguish between a thousandth of a second and a millionth of a second. A period of 200 years is close to the error of time measurement. How do we

know this? We know this because, again, it is not consistent with our experience.

If I were to ask you to choose a reasonable time period between time-temperature data points in which to study global climate change, what would you choose? Would measuring temperature once every week give you enough information? How about one measurement every year? Most individuals would probably agree that we shouldn't go longer than a year to gather information. But most people, particularly our politicians, are not trained scientists.

The scientists who originally collected the temperature data going back thousands of years decided that one data point every 80 to 200 years would be scientifically valid. If they didn't, being good scientists, they would not have published their results. In the 150-year period of the "inconvenient truth" there are only one or two data points. It is quite clear that the scientists who collected the data decided that to look at temperature data closer than every 80 to 200 years would not add anything scientifically valid to the study.

The only way we can understand this idea of climate change is to expand the boundaries of our system. We must look at global temperature over hundreds of thousands of years to see evidence of climate change. When we do, we see something very interesting about global temperature. It does not change haphazardly. It changes in a very orderly, structured way. Moreover, when we look at it over very long periods of time, the changes appear to be periodic; that is, the changes occur in a cyclic pattern lasting about 100,000 years. Now, greenhouse gases may be causing these temperature changes. But the major greenhouse gas on our planet is water vapor, and there is no apparent change in water vapor levels preceding global temperature changes. Ah, it's the CO_2, you say. But if it is global CO_2, what causes the CO_2 to change? Certainly, there were not a lot of people around burning fossil fuels or driving SUV's 400,000 years ago. Some people will argue, "The changes today are different from what they were 400,000 years ago!" But that is not what the data shows. In fact, they are exactly the same. If there

is any difference, it is that the planet has been warm too long and should be heading back to ice age.

In subsequent chapters we will explain the accepted, scientifically consistent behavior of the global temperature and global climate change. It is not based on any political agenda, except, perhaps, to help dispel the erroneous notion that any species on this planet can actually affect the climate of the globe. The level of carbon dioxide in the atmosphere today is about 0.036%. In a crowd of 10,000 people, this is about four people. It is the intention of the nations of the world (including the United States) to cut greenhouse gas emissions in half by 2050. Greenhouse gas emissions, however, are only a small portion of this 0.036%. Cutting greenhouse gas emissions in half will lower the percentage of CO_2 down to maybe 0.03%? That is the same as removing one person out of those 10,000 people that I mentioned above. It is extremely difficult to believe that this small change in the CO_2 levels in the atmosphere will have any profound effect on the climate of the globe. Yet, many dim wits believe this.

The science of global warming is no different from the science of any other thing. It should not be centered on any political or economic agenda. It is neither liberal nor conservative, right wing nor left wing, capitalistic nor socialistic. And most importantly, science should never be centered on dogma. That is the realm of religion.