

# **GLOBAL WARMING: CAN IT BE STOPPED?**

**The Science, Psychology,  
and Morality of  
Climate Change**

## **Chapter 1**

**Paul E. Robinson**

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### There Is A War Going On

*“Doubt is our product since it is the best means of competing with the ‘body of facts’ that exists in the minds of general public.”*

-unnamed tobacco executive (1969)

Dr. James Hansen (1988) was the first scientist to testify publicly in Congress about the dangers of human-caused global warming. He testified: “It is time to stop waffling... the greenhouse effect is here.” From that momentous testimony, the battle was on. The Reagan administration had drafts of his congressional testimony repeatedly edited in order to weaken his controversial position, even controversial among scientists at that time. Hansen became the subject of so much criticism that a book was written about all the attacks on him. See Mark Bowen’s book (2008) for more details about the assault on Dr. Hansen.

The opening quote from David Michaels’ book (2008) captures the essence of the attack of the fossil fuel industry on the science of global warming. Naomi Oreskes and Erik Conway (2010) further detail the tactics of the industry to cast doubt on the science and the scientists. They charge the fossil fuel industry of creating a virtual Potemkin village of pseudoscience institutions including think tanks, journals, newsletters, and a core of supposed experts to attack the science and scientists. The latter actually includes a few scientists with impeccable credentials and outstanding reputations in their respective fields of science, that is, before they started receiving financial support from the fossil fuel industry.

The war is essentially a battle over the issue of our health on the one hand and the issue of the economy on the other or profit versus health. The fossil fuel industry recognizes that the public must continue to burn fossil fuels or they would go bankrupt. This same theme, profit versus health, is playing out now in respect to the coronavirus pandemic. There is much debate about when America should return to work. Our federal government has established guidelines, but some are ignoring those in their eagerness to get back to work and get our economy going again. Though most Americans support the science-based guidelines, many are choosing to ignore them. Business owners and corporations want America working and rightly so.

People want to work again. They need too. Many have no income at all right now. People have taken to the streets to demand their right to go back to work. Government checks are very slow in coming for many and some have not received any money at all. What monetary relief people have received is insufficient for most. Some are angry at their government and the scientists who are advising it. As fine and as respected a scientist as Dr. Fauci is, even he is under attack from fringe groups. They see him as an enemy of the people’s

rights to work and possess weapons! Many people also see climate scientists as “enemies of the people” too and are relentless in their attacks on them.

People need to get back to work to support their families and pay their bills while at the same time they need to protect their health- a most unfortunate dilemma. At this point in our country, people also need fossil fuels. There would be much suffering, not to mention hardship and perhaps economic ruin for those dependent on the fossil fuel industry, if suddenly we all stopped using fossil fuels. Though there is a slow transition from dependence on fossil fuels taking place, it is not fast enough to have much effect on our environment, on global warming. The balance between our health and the health of the planet on the one hand and our personal and national economy on the other is a delicate one to say the least. To prevent or reduce global warming, however, we must transition from fossil fuels as fast as we can.

Our concern for our health and the health of this planet and the need for economic security sets the stage for the battle the fossil fuel industry is waging against scientists who dare publish the fact that global warming is primarily caused by the use of fossil fuels. As Amy Westervelt made clear in a *Washington Post* article (2019), there is a “war of ideas” taking place in America and, we can say, around the world. This war pits the fossil fuel industry and its disciples against the best of our climate scientists. A war for the hearts and souls of all of humanity is ensuing. Truth and facts are at stake in this war as are profits and human welfare. More importantly, the fate of humanity is at stake!

No cost is being spared by the fossil fuel industry to maintain the status quo, i.e., to keep the oil wells pumping even as the Earth continues to overheat. Unfortunately, global warming has become a political and partisan issue. People have chosen sides not based on the evidence but based on discipleship to a political party.

Climate change has become an article of faith for many conservative Republicans and evangelicals. For example, global warming was called “a flat out lie” by an attendee at a Republican political forum in Indiana a few years ago. The man continued, “I read my Bible. He made this Earth for us to utilize.” Another attendee at that meeting went on to say, “This so-called climate science is just ridiculous.” The default position of those who deny the science of global warming is “the science is not settled.” It is recognized that two people do not represent the entire view of the Republican Party; however, they do represent the view of many.

What should concern every American is the Trump administration’s careless treatment of environmental issues in general and global warming in particular. Nadja Popovich and others (2019) detail how the current administration has tried to roll back nearly one hundred pieces of environmental legislation enacted by previous administrations. Fortunately, environmental advocate groups have had some successes in blocking these attempts in the courts.

Equally disturbing is a survey conducted by the Center for American Progress Action Fund (1/28/19). The survey revealed that “there are 150 members of the 116<sup>th</sup> Congress--all

Republicans--who do not believe in the scientific consensus that human activity is making the Earth's climate change." The good news is that is actually a slight reduction in the number of members who deny climate change.

Please understand. It is not my intent to single Republicans out as global warming deniers here though it may seem that way. Not all Republicans deny climate change any more than all Democrats believe in it. Besides, the word "Republican" means different things to different people. The labels "Republican" and "Democrat" are so imprecise that they have little meaning any more. It is impossible to group them into two distinct categories. No one person or group defines any party.

In addition, it was President Nixon who presented a 37-point message on the environment which called for the creation of the Environmental Protection Agency in 1970. The Clean Air Act was passed in 1970 to "foster the growth of a strong American economy while improving human health and environment. (EPA)" This Act enjoyed strong bipartisan support as did the revision in 1990 under Republican President, George H.W. Bush. Further, it was bipartisan support that led to the passage of the Clean Water Act of 1972 which Nixon, interestingly enough, vetoed out of concern for the size of the Act's budget. Again, in both the House and the Senate, strong bipartisan support resulted in an override of Nixon's veto. Protection of the environment was once favored by both Republicans and Democrats.

Those who deny climate change, both Republican and Democrats, have been grouped into four categories by the Center for American Progress Action Fund. These are as follows and I quote:

1. Believing that climate change is not real or a hoax
2. Believing that the climate has always been changing and continues to do so, and saying that the Earth is just in a standard cycle of warming, despite evidence of faster change than ever before
3. Thinking that the science around climate change is not settled, or claiming that since they are not scientists themselves, they cannot know for certain
4. Believing that humans are contributing to a changing climate but are not the main contributors—again despite overwhelming evidence to the contrary

How can anyone continue to deny anthropogenic climate change? After all, it has to be obvious to everyone that we are polluting our atmosphere with greenhouse gases. The fact that we are has been known or at least speculated about for decades now. The only thing new is that our data is more accurate and comprehensive and our prediction models are more refined. As far back as 1965, President Lyndon Johnson was advised of the risks of continued carbon pollution. Being an oil man from Texas, he chose to ignore the warning. In 1969, President Nixon was also warned of the dangers of continuing to burn fossil fuels and thereby releasing more carbon dioxide into our atmosphere. Though Nixon showed more interest in environmental issues than any other previous president, he did little to address the burning of fossil fuels.

Even the fossil fuel industry knew of the dangers before the public began to become aware of the association between the burning of fossil fuels and the buildup of greenhouse gases, principally carbon dioxide, CO<sub>2</sub>, in our atmosphere. An internal Exxon oil company memo (Union of Concerned Scientists, 2015) which came to light due to lawsuits against Exxon and other major oil companies, reveals that scientists working for them also warned of the dangers of burning fossil fuels as early as 1982. Memos warned of the threat of reducing our dependence on fossil fuels saying it would have severe impact on their global business and the economies of the world.

The most obvious conclusion from the three examples above is that, for a variety of reasons, mostly financial it seems, no one was willing to take the threats seriously enough to take appropriate action. Politicians didn't. Corporations didn't. The only group that was sufficiently concerned was the scientists who were looking at the growing and impending threat. Some of the public was aware but they were confused by the complexity of the data or by feuding scientists. And, of course, a misinformation campaign conducted by the fossil fuel industry, much like during the "tobacco wars" of the fifties, only confused the public more. This war if fueled by the fossil fuel industry whose motto seems to be, drill and spin (as in the facts).

John Broder (2010) wrote: "[T]he fossil fuel industry have for decades waged a concerted campaign to raise doubts about the science of global warming and to undermine policies to address it. They have created and lavishly financed institutes to produce anti-global-warming studies, paid for rallies and web sites to question the science, and generated scores of economic analyses that purport to show that policies to reduce emissions of climate-altering gases will have a devastating effect on jobs and the overall economy."

Amy Westervelt's essay (2019) is illustrative here. She identified several ways the industry has been successful in getting the public to believe that global warming is a scientific uncertainty. From influencing media outlets to report "uncertainties" to targeting conservatives with the idea that climate change is a liberal hoax, the fossil fuel industry has had success in confusing the public and lawmakers. In addition, it used its considerable influence and money to position contrarian scientists as experts as believable to the public as the more credible climate scientists.

Readers interested in learning more about the evidence for a well-organized, well-funded, and coordinated efforts to cast doubt on the science of global warming is referred to Michael Mann's book (2012) cites several examples of how the fossil fuel industry attacked climate science. Allow me to give you two examples from his book about how this war is being fought. This first example occurred in 1995 at a meeting of the Intergovernmental Panel on Climate Change (IPCC) meeting in Madrid, Spain. A fierce debate broke out between the scientists and delegates from the Mid-east oil countries. The battle was over a single word. The scientists wanted to report that the effect of human behavior on climate change was "appreciable." The Saudis, in particular, preferred a softer word, a word that was less accusatory. After two days of wrangling, they finally agreed on the word, "discernible."

Another example involved personal and professional attacks on a climate scientist, Ben Santer, a researcher with the Department of Energy's Livermore National Laboratory in California and the recipient of a prestigious McArthur "genius" award. Santer was the primary author on a series of papers establishing the role of human activity on climate change. Even though Hansen had first testified publicly about anthropogenic global warming, it was Santer's and his colleagues' work in the mid-1990s that provided the basic research that established the role of human activity in climate change.

Santer came under attack from a variety of sources. One was a scientist at the University of Virginia whose work was being subsidized by the fossil fuel industry. Another attack came from a group called the "Global Climate Coalition," a group also funded by the fossil fuel industry. This group accused Santer of abusing his power of peer review and of "political tampering" and "scientific cleansing."

Even the media joined in the attack. Dr. Frederick Seitz, founding chairman of another fossil fuel-industry-funded group, the George C. Marshall Institute, published an op-ed in the Wall Street Journal (1996) repeating the same charges of "political tampering" and "scientific cleansing." This latter charge was particularly malicious because Santer had lost relatives in Nazi Germany.

This misinformation campaign caused and is still causing confusion among the general public as well as our legislators. Such confusion is threatening not only the health of our planet but our health as well. Confusion delays or prevents action and works to the advantage of the fossil fuel industry. Since no one in a power position took the threat seriously enough or even denied it, nothing was done early on when much of the current threat could have been avoided. Even now global warming is not being taken seriously by those in a position to do the most about it. For example, President Trump tweeted: "The concept of global warming was created by and for the Chinese in order to make U.S. manufacturing noncompetitive." The denial of global warming is largely about money and the GNP, gross national product, for those who deny the scientific facts.

Paul Krugman (2020) writes that "zombie ideas" are ideas that have been proven wrong by overwhelming evidence and should be dead, but somehow keep "shambling" along, eating people's brains. He asserts that the most consequential "zombie" is climate denial and that it is kept alive by financial self interests. That certainly was and is today the motive of the fossil fuel industry. Upton Sinclair summarized the issue well when he wrote: "It is difficult to get a man to understand something when his salary depends on his not understanding it." For example, data from the Center for Responsive Politics (2019) revealed that the 150 Republican members of the 116<sup>th</sup> Congress accepted a total of \$68 million in direct contributions from the fossil fuel industry. That is an average of \$453,333 per member!

These kinds of payoffs make any possibility of joint congressional action on climate change extremely difficult. Why aren't more people worried and demanding action on the

environment? Why don't more people see the importance of action now? Thomas Hegghammer's book (2017) about militant Islamist terrorism made this observation: "There is a difference between man-made and natural disasters. People are typically more afraid of man-made threats even if they are less damaging."

The number of deaths in the US due to the coronavirus pandemic exceeded the number of deaths due to the terrorist attack on 9/11. Clearly, we showed more fear of the coronavirus than we do of global warming even though global warming is predicted to cause unparalleled disruptions in our lives and also a high, if not higher, number of deaths. If we think the coronavirus virus was disruptive, wait until the worse for global warming hits us!

The reason for the greater fear of man-made threats has to do with the elements of predictability and control. Beyond our physical needs, such as air and water, for example, our psychological comfort requires that we be able to make a reasonable prediction about the future and believe we have some element of control over it. The unknown and unpredictable creates the greater amount of fear for us. We believe we have more control over natural threats than we do man-made ones; therefore, we fear natural events less. After all, natural threats, such as floods and tornadoes, are more or less predictable and often can be avoided, the element of control. On the other hand, a man-made threat, such as a terrorist attack, is not always predictable or controllable.

All these elements came into play with the coronavirus pandemic. We knew it was coming and had the opportunity to prepare for it. Even though we did not prepare as well as we should have, we, nonetheless, had the opportunity to mitigate its impact. If a terrorist attack, a man-made threat, had been predicted, the response of our government would have been swift and decisive to prevent it. Global warming is a natural threat and predictably but, unfortunately I must add, our government in Washington is treating it like it is not real, a hoax.

The war has been joined, unintentionally I must add, by many in the American public. For example, such disregard of a natural threat was evidenced over Spring break among adolescents when thousands of college students flooded the beaches in Florida. They not only were risking contracting the virus themselves, but also spreading it to other people. One reveler on a beach captured the attitude of many who deny global warming when she said during a live TV interview, "If I get corona, I get corona. At the end of the day, I'm not going to let it stop me from partying."

Far too many have adopted this same attitude toward the Earth. They will keep on partying regardless how hot the Earth is becoming. They will not let the facts of global warming convince them they have to make some adjustments in their lifestyles. Thinking we are invincible, that the damage to the Earth is minor or non-existent and that we are immune from natural disasters is foolish thinking. Denial of a problem does not make it go away. Denial delays any effective response to the problem. We must start taking the natural threat of global warming more seriously if we are to avoid a worst-case scenario.

Make no mistake about it. In spite of the fact that so many have ignored or minimized the threat of global warming, it is a serious problem that requires bold action. Such action is only beginning to be taken now some fifty plus years after the initial warnings. The Kyoto Protocol adopted in 1997 by many nations was a small step in the right direction. Unfortunately, one of the major players, the US, refused to adopt it. This nonparticipation continues even today as the US President is pulling the United States out of the 2015 Paris Agreement. Scientists warn that even if all signatory nations adhered to the agreement, it would still not be enough to protect Earth's inhabitants from some of the major effects of climate change mentioned earlier.

Even as the public becomes more aware of the global warming crisis, it is still business as usual for many. It is not that we don't care or that there is mass denial of the crisis. No, the majority of us believe global warming to be a threat to our existence and that it is caused by human activity. Often times our human nature is to ignore or minimize a problem until it hits us in the face. Consider how many people build a home in a known flood zone, near a volcano, on a hillside at risk of a mud slide, or close to the sea shore where the home is subject to major hurricanes and rising tides. Even as I am writing this, news of a volcanic eruption near New Zealand is being broadcast on the television. People were climbing all over the volcano, even though it had recently begun showing signs of becoming active, when it erupted resulting in the deaths of several people.

As the above example makes clear, we Homo sapiens are risk takers. Psychological studies reveal that risk takers either minimize the risk or maximize their abilities to deal with the risk at hand, or both. We see both behaviors in our response to global warming. While some are busy denying global warming and our own role in it, others are overly optimistic about our capacity to reverse global warming through geo-engineering, for example.

We can applaud and even marvel at the risks some are willing to take. Mountain climber Alex Honnold, for example, is held in high esteem by many for his courage. He knew full well of the risk to his very life when he climbed El Capitan without ropes. Clinging to the sides of the granite wall with nothing more than his fingers and the thin edges of rubber on his shoes, he completed the climb in slightly less than four hours when it would take days for climbers using ropes. He was just that confident in his abilities which he had tested many times before he began his historic climb up perhaps the world's most iconic cliff.

Like Alex, we take risks every day but, of course, not to the extent he did and does. Every time we leave our homes we are taking a risk. What we don't seem to realize, or perhaps do not want to realize, is that we are taking risks with our environment as we continue to rely on fossil fuels. The problem is that the risks we are taking with our use of fossil fuels are putting not only ourselves at risk but generations to come. Like the person who drives while intoxicated, we put others at risk with our actions. I believe, however, we are slowly becoming more aware of the risks associated with global warming and are beginning to act accordingly. More and more people are starting to take this crisis seriously. You must be one of them or you were not likely to pick up this book.



If climate change only affected those willing to take the risk, it would be acceptable to take that risk. But when our actions affect everyone, as they do on this spaceship we all jointly share, then it is an entirely different matter. I have deep respect for those willing to take risks. That is how progress is achieved. Risk taking has served the human race well over the two hundred or so thousand years of our existence; but, taking risks with Mother Nature is a whole other ball game! As is said, "Don't mess with Mother Nature."

Pioneering work into fear and risk by David Ropeik (2010) makes it clear that the closer in time an event is to us the more we fear it. Right now we all are afraid of the coronavirus because it is as close as the next affected person. The stranger we encounter at the grocery store could be a risk to our lives. We have less fear of global warming because, for most of us at least, it seems so far away. The level of our fear is not a good measure of the real risk. Global warming is arguably potentially worse than the coronavirus, but because it seems to be far off into the future, we fear it less.

We are at a crossroad in human history. With but one exception in the approximately 200,000 year history of Homo sapiens' existence has humanity ever faced a threat of this magnitude to our existence. During the cold war following WWII, humankind could have been totally obliterated with the unleashing of atomic weapons. Both the Soviet Union and the US had enough nuclear weapons to destroy humanity many times over, and practically all of life for that matter. Fortunately, cooler heads prevailed, sparing humankind a terrible fate like the one the Japanese faced during the Second World War. What we do or do not do now is of critical importance. Hanging in the balance is the health and wellbeing of all Earth's inhabitants.

We need to face the terrible fate that awaits humanity if we do not stop global warming. We have the opportunity to save this planet for future generations if we act boldly and quickly. If we fail to act accordingly, much of humanity, if not virtually all of it, will have to suffer from a climate that is not fit for human existence, at least as we now know it. Though the climate change prediction models cannot predict with one hundred percent accuracy what the future holds, if we continue to release carbon from the burning of fossil fuels into our atmosphere at the rate we are now doing, the models make it clear that humankind will be at risk for all kinds of dangers and disruptions.

We must stop listening to the doubters and take actions now. The earlier a potential disaster is faced the better the outcome of our actions. Evidence of not taking natural threats seriously enough can be seen not only in our response to global warming but also in our nation's response to the coronavirus. Initially, the President and even Dr. Fauci were not that concerned about it. Only when it reached near pandemic proportions did they become concerned enough to start mobilizing the nation to combat it. That lack of initial alarm, however, delayed our response to it and made the human and economic costs greater than they would have been had they started preparing earlier.

There is reason to be at least moderately hopeful. For example, most governments did not withdraw from the Paris Agreement. And some are even arguing that we need stricter standards. Consistent with our President's denial of climate change, he is withdrawing the United States from that agreement; but, the good news is all the other signatories are still committed to achieving its modest goals. In addition, many corporations have stepped up and are addressing the challenge in spite of the President's and his EPA director's foolish position. Some cities and states have taken up the cause and are enacting legislation to address the growing threat. Also, individuals, countless numbers of them, are beginning to take the problem seriously and make the necessary changes in their lifestyles to forestall global warming. Like gun violence, people are waking up to the fact that "thoughts and prayers" are simply not enough.

That great journalist, H.L. Mencken, while writing about the Scope's "monkey trial" in Tennessee, reached an alarming conclusion: "They know little of anything worth knowing, and there is not the slightest sign of a natural desire among them to increase their knowledge." Further, he went on to write: "...enlightenment, among mankind, is very narrowly dispersed." We have to believe that his remarks are specific to that time and to the issue of evolution being taught in public schools. If not, we have little chance of stopping global warming. Global warming requires an informed electorate without which effective changes in our energy policies will not happen.

Global warming/climate change is a war we can win if we are smart and if we care enough. We all need to be better informed, myself included. We can only make high quality decisions if we are sufficiently informed. All humanity deserves a healthy planet and a good life that can come from that. Generations to come are depending on us to protect our environment and leave them with an Earth that is friendly to life. We owe them that! And we need to act now.

### **Discussion Questions**

1. Do you believe there is really a war going on? What are all the stakes in this war?
2. What does Amy Westervelt mean when she characterized the war as a "war of ideas?"
3. Do you know of anyone for whom the denial of anthropogenic (human-caused) climate change is an article of faith?
4. The Center for American Progress Action Fund identified four groups of those who deny climate change? Do you or anyone you know fit into one of those groups?

5. Do you see parallels between the Tobacco Wars of the 1950s and the war the fossil fuel industry is waging today? In each case, are the main arguments based on concerns about economics of the industry/investors or concerns about the environment/health?

6. Do you agree or disagree with Upton Sinclair's comments about the effect of money on the debate about global warming?

7. The author states that we are at a crossroads in human history. What does he mean and do you see it that way?

8. What do we really owe our children? Do we owe them a healthy climate? At any cost to us personally? Is it our problem or theirs?

9. Do you agree or disagree with Mencken's comments?

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