



The following is a response to a column appearing in the August 20, 2014, edition of the Atascadero News by Mr. Al Fonzi. Direct quotes from his column are in red, unless paraphrased for clarity with brackets [...]. His full article may be found in the August 20th edition of the Atascadero News in the Atascadero Public Library. A much shorter version of the following response will appear in print in the September 12, 2014, edition of the Atascadero News.

Pow! Ouuff! Take that, Straw Man!

By Dr. Ray Weymann
September 5, 2014

In rhetoric, “A straw man is a common type of [argument](#) and is an [informal fallacy](#) based on the misrepresentation of an opponent’s argument. To be successful, a straw man argument requires that the audience be ignorant or uninformed of the original argument. The so-called typical ‘attacking a straw man’ argument creates the illusion of having completely refuted or defeated an opponent’s proposition by covertly replacing it with a different proposition...and then to refute or defeat that false argument... instead of the original proposition”. http://en.wikipedia.org/wiki/Straw_man (R1)

Another rhetorical device involves unleashing a string of assertions of facts without presenting any evidence to support them. These devices were on splendid display in a recent column in the Atascadero News (August 20), which railed against the reality of human-driven climate change and the need to deal with it. Among such assertions:

Assertion

“Academics [who disagree with the scientific consensus on climate change] risk being ostracized, including early career termination”.

Which academics at which institutions? What evidence is there for this? If any climate scientists at academic institutions were terminated or threatened with termination simply because of their rejection of the consensus view on climate change I would like to know of it and condemn it.

Assertion

“Scary stories of rising sea levels and melting glaciers...have been debunked.”

By whom and with what credentials? It is an observed fact that global sea levels are rising and at a rate that is now nearly twice what the historical average over the 130 years between 1870 and 2000 has been: (http://climate.nasa.gov/key_indicators/) (R2) The same link will show you the recent melting of the Greenland and Antarctic ice sheets. Glaciologists have recently concluded that continued melting of portions of the Antarctic ice sheets is irreversible.

(<http://www.scmp.com/news/world/article/1511468/melting-west-antarctic-glaciers-irreversible-two-grim-studies-find>.) (R3) See also: <http://www.latimes.com/science/environment/la-sci-0513-antarctic-ice-sheet-20140513-story.html>) (R4) From this link:

“Scientists attempted to pinpoint how quickly the giant Thwaites might disappear altogether, a development that by itself could cause global sea levels to rise by 2 feet. *That amount of sea level rise would have a chaotic impact.*” (Italics mine). I leave it up to the reader to judge if that is scary, alarming, concerning, or just something that has been ‘debunked’. This comment from glaciologist Eric Rignot, who was lead author of one of the two studies, is worth quoting: *“All these studies clearly point toward an increasing contribution of ice sheets to sea level. What the layperson should get out of the recent news, however, is that ice sheet melting is a serious thing, there is no red button to stop it, we can slow it down or get it as fast as we can. Right now, we have chosen the latter”*

Assertion

The percentage of “**all scientists**” who [accept that greenhouse gas emissions are mostly responsible for the recent warming] is not 97%, it is “**not even close to a majority**”.

This is an example of a straw man argument. I am going to respond to this assertion at some length since our August 20th commentator and others have made much of the fact that in one particular study the 97% comes from just 77 responses. *It is a straw man argument because I have always emphasized that the 97% refers to climate scientists active in climate science research, not just anyone who could be classified as a scientist*, as in the infamous “Oregon Petition” (which is a petition, not a survey and includes anyone with any kind of science degree). There have been several other studies as well, discussed below, *and in all cases the surveyors have made this distinction*.

But let’s look at this particular study, which is by Doran and Zimmerman:

<http://onlinelibrary.wiley.com/doi/10.1029/2009EO030002/abstract>. (R5)

A very short questionnaire was sent to 10,257 people classified as “Earth scientists”, and 3146 of them responded, (30.67%) which the authors say is typical of web-based surveys. (How many of us bother to fill out the surveys we are continually bombarded with?) The respondents classified themselves as to: a) their area of expertise b) whether the topic in which most of their peer-reviewed publications dealt was climate science. The respondents were then divided into five groups based upon their area of expertise and recent peer-reviewed publication history. Only 5% classified themselves as climate scientists and roughly half of these were actively publishing on the topic of climate science. One of the two questions asked was “Do you think human activity is a significant contributing factor in changing mean global temperatures?” Of the total of these 3146 respondents, 78% answered yes—somewhat more than a majority I would say. But among the group who were both climate scientists *and* who had been actively publishing in the area of climate science, 75 answered “yes” (97.4%) and 2 answered “no”. The authors summarize their findings as follows: *“In general, as the level of active research and specialization in climate science increases, so does agreement with the two primary questions. In our survey, the most specialized and knowledgeable respondents (with regard to climate change) are those who listed climate science as their area of expertise and who also have published more than 50% of their recent peer-reviewed papers on the subject of climate change.”* Was their survey or data “manipulated”? The authors also note *“While respondents’ names are kept private, the authors noted that the survey included participants with well-documented dissenting opinions on global warming theory.”* So if there was fraud or manipulation, let’s see the evidence.

But wait a minute. In the absence of such evidence, let’s assume that the survey was fair and

unbiased. Isn't the result of the 75/77 yielding the 97.4% such a ridiculously small number as to be statistically meaningless? No, it is not. Suppose that by "not even close to a majority" the true fraction among a much larger group defined in the same way as the 77 who responded is really 50%, but because the sample is small, it might have been just a statistical accident that the result turned out the way it did. This is equivalent to flipping a "fair" coin 77 times and having it turn up "heads" 75 times. Those of you who remember how to use the binomial theorem can verify that the chance of heads turning up 75 or more times out of 77 tosses is about 1/200,000,000,000,000,000—pretty slim despite this "small" sample of 77.

But maybe the Doran and Zimmerman survey really was "flawed" as detractors like to say (because they don't like the result). Are there other surveys? Yes, and I will just briefly give the references and present some results: Anderegg et al: <http://www.pnas.org/content/107/27/12107.abstract> in a paper entitled "Expert Credibility in Climate Change" conclude: "*Here, we use an extensive dataset of 1,372 climate researchers and their publication and citation data to show that ... 97–98% of the climate researchers most actively publishing in the field support [the dominant role of humans in recent climate change.]*" (R6)

Another study was by James Powell <http://desmogblog.com/2012/11/15/why-climate-deniers-have-no-credibility-science-one-pie-chart>. (R7) Here is what he says: "*to be classified as rejecting, an article had to clearly and explicitly state that the theory of global warming is false or, as happened in a few cases, that some other process better explains the observed warming... By my definition, 24 of the 13,950 articles, 0.17% or 1 in 581, clearly reject global warming or endorse a cause other than CO₂ emissions for observed warming.*" But this was not published in a journal so if you wish to ignore it, you are free to do so.

Two other separate but related studies were published by John Cook, et al: <http://iopscience.iop.org/1748-9326/8/2/024024/article>. (R8) The conclusions:

We find that 66.4% of abstracts expressed no position on AGW, 32.6% endorsed AGW, 0.7% rejected AGW and 0.3% were uncertain about the cause of global warming. Among abstracts expressing a position on AGW, 97.1% endorsed the consensus position that humans are causing global warming. In a second phase of this study, we invited authors to rate their own papers. Compared to abstract ratings, a smaller percentage of self-rated papers expressed no position on AGW (35.5%). Among self-rated papers expressing a position on AGW, 97.2% endorsed the consensus... Our analysis indicates that the number of papers rejecting the consensus on AGW is a vanishingly small proportion of the published research.

Please view the short video with Dr. Cook embedded in this reference explaining this work and its implications.

In addition to such surveys, all U.S. professional scientific organizations making a statement on climate change also endorse this consensus. The same is true for the National Academies of major countries of the world, including China, India, Russia Brazil. See: [\(R9\)](http://www.centralcoastclimatescience.org/expert-summaries.htm)

None of all this evidence "proves" the scientific correctness of what is clearly a strong consensus (and vastly more than just a bare majority) of the scientists who are conducting and publishing their search on climate change. But it does behoove us to understand *what* they are saying, *why* they are saying it, and *what needs to be done about it*. As former Governor Schwarzenegger famously suggested, if your child had a high fever and you

consulted 100 doctors, 97 of whom told you your child was seriously ill and should get immediate treatment, would you heed their advice or ignore them and only pay attention to the other three who said there was nothing to worry about—"give her some aspirin and call me in the morning"

Assertion

"discussion of nuclear energy [by advocates for cutting fossil fuel emissions] is verboten".

This is another straw man. In fact, the most prominent and outspoken climate scientist concerning the need to reign in fossil fuel consumption, Dr. James Hansen, is also one of the most ardent supporters of nuclear energy. <http://tinyurl.com/mmghoen> (R10)

Recently, he and three other leading climate scientists published an open letter urging "those influencing environmental policy but opposed to nuclear power" not to oppose nuclear energy as one source of nearly carbon-free emissions. <http://www.cnn.com/2013/11/03/world/nuclear-energy-climate-change-scientists-letter/> (R11) These four argue that a "*credible path to climate stabilization...must include a substantial role for nuclear power*". This does not mean there are not real safety, waste disposal and proliferation considerations involving nuclear energy, and they acknowledge that "*today's nuclear plants are far from perfect.*"

There are indeed promising new designs that vastly reduce some of these concerns. See in particular the excellent video describing the "WAMSR" design by two MIT graduate students who, incidentally, were primarily motivated by their recognition of the dangers of continued carbon emissions. <https://www.youtube.com/watch?v=AAFWelp8JT0> (R12) The Chinese are indeed investing heavily in nuclear energy and one hopes they will also adopt similar advanced designs. But they are also the world's leading investor in wind and solar. (<http://www.climatecentral.org/news/u.s.-lags-behind-china-in-renewables-investments-17257>) (R13) and are the world's leader. The role of coal is a matter of intense internal debate in China. The Government is "*Under pressure to reduce smog and greenhouse gas emissions, the Chinese government is considering a mandatory cap on coal use*". Some officials want it to grow "*but there is robust support among senior policy advisers for a firm national cap on coal starting in 2016*"
http://www.nytimes.com/2014/07/25/world/asia/chinese-plan-to-reduce-coal-use-could-allow-increases-for-years.html?_r=0 (R14)

Assertion

Wind and solar energy sources are "unreliable [and] extremely expensive".

If they have no significant future role to play, why does Citibank predict "*renewables will replace coal and gas in power generation, which will free up the use of gas as a substitute for oil in transport*", while UBS tells its clients "*the payback time for unsubsidized investment in electric vehicles plus rooftop solar plus battery storage will be as low as 6-8 years by 2020*" (<http://www.energypost.eu/ubs-citigroup-warn-investors-massive-revolution-energy-industry/>) (R15)

Our August 20th columnist speaks of the "**Church of Environmentalism**" as being "**the latest refuge of the totalitarian utopian Left**" in the context of those of us who are convinced of the dangers of continued fossil fuel emissions. Then does everyone who agrees with the urgent need to take concerted action to strongly reduce fossil fuel emissions belong to this Church?

Then let us welcome former Treasury Secretaries Robert Rubin and Henry Paulson. Rubin states that “*the costs of ignoring climate change are catastrophic*” and concludes that “*We do not face a choice between protecting our environment or protecting our economy. We face a choice between protecting our economy by protecting our environment – or allowing environmental havoc to create economic havoc.*” <http://www.rtcc.org/2014/08/04/robert-rubin-costs-of-ignoring-climate-change-are-catastrophic/> (R16)

Let us also welcome four previous EPA administrators serving Republican Presidents. They “*have a message that transcends political affiliation: the United States must move now on substantive steps to curb climate change, at home and internationally ... and state that “the costs of inaction are undeniable”*. They even have the temerity to suggest that “*A market-based approach, like a carbon tax, would be the best path to reducing greenhouse-gas emissions*” but recognize that is *unachievable in the current political gridlock in Washington. Dealing with this political reality, President Obama’s June climate action plan lays out achievable actions that would deliver real progress.*” http://www.nytimes.com/2013/08/02/opinion/a-republican-case-for-climate-action.html?_r=0 (R17) Secretary Paulson also argues for a carbon tax in a June 2014 opinion piece: <http://www.nytimes.com/2014/06/22/opinion/sunday/lessons-for-climate-change-in-the-2008-recession.html?module=Search&mabReward=relbias&>

(R18) And lets not forget to welcome a large segment of the insurance industry, both at home and abroad: http://www.nytimes.com/2013/05/15/business/insurers-stray-from-the-conservative-line-on-climate-change.html?pagewanted=all&_r=0 (R19) And finally, welcome to those involved in national security and the military:

<http://www.nytimes.com/2014/05/14/us/politics/climate-change-deemed-growing-security-threat-by-military-researchers.html> (R20)

Finally, let us address the August 20th columnist’s characterization of the California Global Warming Solutions Act as the “**worthless AB 32**”. If California, via AB32 (or the entire US, via Administrative actions) were the only political entity to significantly reduce emissions, it is perfectly true that this would not be nearly enough to avoid very serious consequences like those described above. What are the alternatives? Three crucial international meetings will be held over the next 15 months. The first will be Sept. 23 in New York, with the Presidents of both the US and China expected to attend. Their aims are to reach an agreement that allows the developing nations continue to raise standards of living but limits emissions to avoid the worst of climate change impacts. But suppose none is reached by 2015. Our August 20th columnist invoked the image of lemmings blindly following each other over a cliff. But his solution is for the US to join the other lemmings, following them over the cliff and until we have passed even more irreversible tipping points and saddled future generations with a drastically altered climate for many centuries. What the US can and should do is take the lead from China in the development and deployment of low carbon emitting energy sources which will be in increasing demand as the need for reducing emissions becomes blindingly obvious even to those on the far right.

As mentioned above, many prominent Republicans, business leaders and the military have recognized the need to take action in reducing emissions. Only the far right, especially those in Congress, have refused to face the reality of the scientific observations and the laws of physics. It is time for such folks to turn their rhetorical gifts away from pretending there is no problem to helping us find the optimum solution. Not to do so is, in the words of MIT climate scientist Kerry Emanuel, “colossally irresponsible”.