

[source: the Coyote Blog at http://www.coyoteblog.com/coyote_blog/2007/07/the-60-second-c.html]

The 60-Second Climate Skeptic

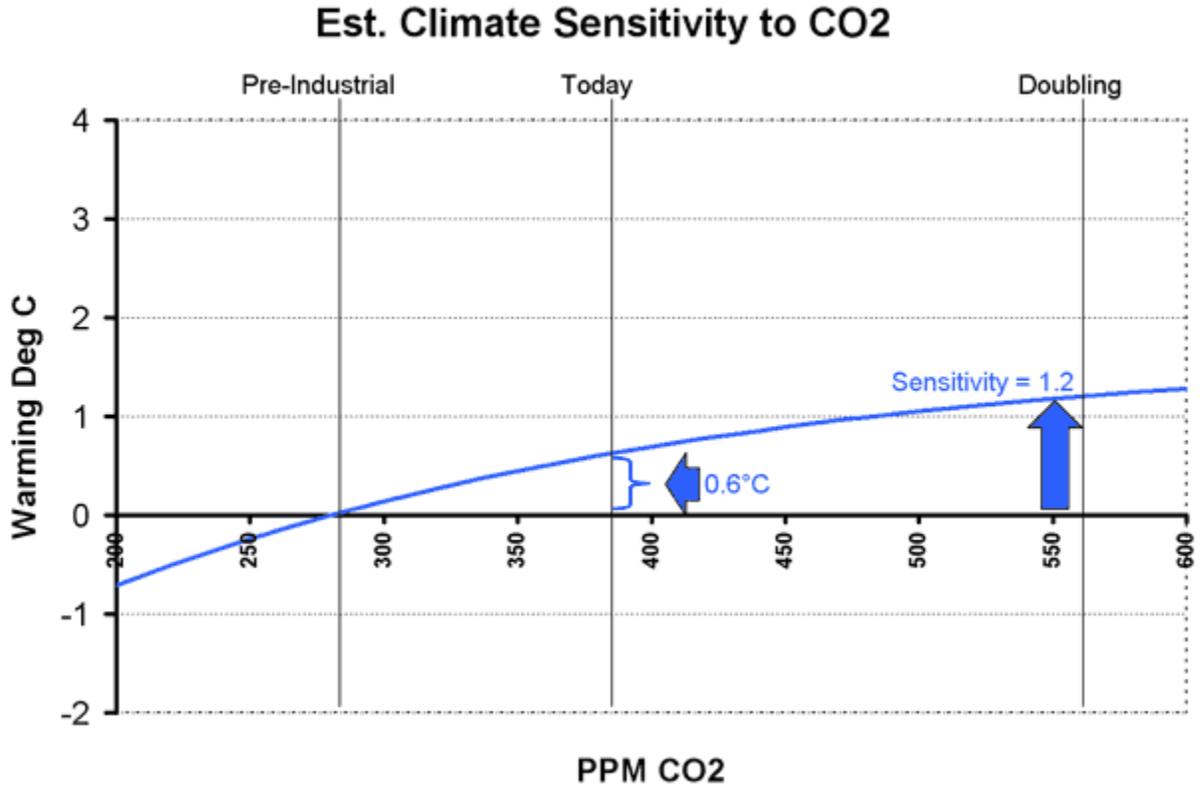
I was trying to think about what I wanted to do for my last post in my recent orgy of global warming writing. My original attempt to outline the [state of the climate skeptic's case](#) ballooned into 80+ pages, so there may be many people who rationally just have no desire to tackle that much material. So I decided for this last post to try to select the one argument I would use if I had only 60 seconds to make the climate skeptic's case. But how do you boil down 80 pages to a few simple statements?

I'm not that interested in the Sun or cosmic rays — they are interesting topics, but its dumb to try to argue we overestimate our understanding of man's impact on climate only to counter with topics we understand even less. One of the reasons I wrote the paper in the first place was because I thought recent skeptical documentaries spent too much time on this subject. And I would not get into tree rings or ice cores or other historic proxy data, though there is a lot happening in these areas. I wouldn't even delve into the hysterical treatment of skeptics by man-made climate advocates — these are ad hominem issues that are useful to understand in a more comprehensive view but don't make for strong stand-alone arguments.

Anyway, here goes, in a logic chain of 8 steps.

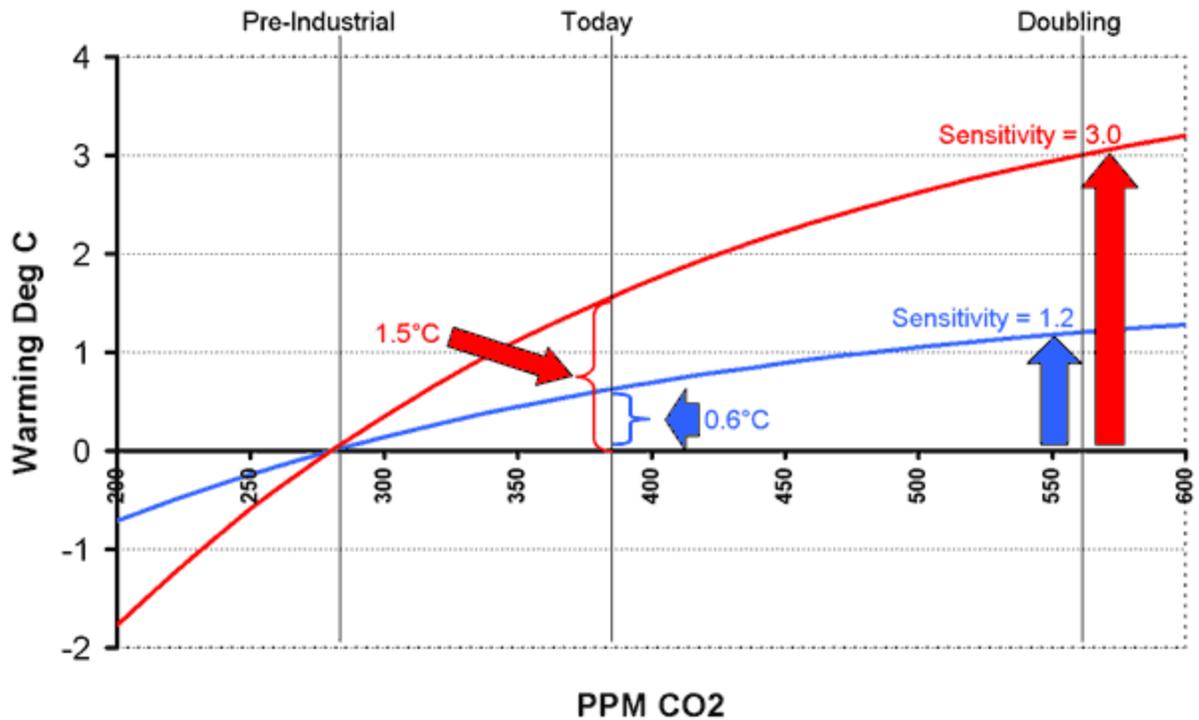
1. CO₂ does indeed absorb reflected sunlight returning to space from earth, having a warming effect. However, this effect is a diminishing return — each successive increment of CO₂ concentrations will have a much smaller effect on temperatures than the previous increment. Eventually, CO₂ becomes nearly saturated in its ability to absorb radiation. The effect is much like painting a red room with white paint. The first coat covers a lot of red but some still shows through. Each additional coat will make the room progressively whiter, but each successive coat will have a less noticeable effects than the previous coat, until the room is just white and can't get any whiter.
2. In the 20th century, the UN IPCC claims Earth's surface temperatures have increased by about a 0.6 degree Celsius (though there are some good reasons to think that biases in the installation of temperature instruments have exaggerated this apparent increase). To be simple (and generous), let's assume all this 0.6C increase is due to man-made greenhouse gasses. Some may in fact have been due to natural effects, but some may also have been masked by man-made sulfate aerosols, so lets just call man-made warming to be 0.6C.
3. Since the beginning of the industrial revolution, it is thought that man has increased atmospheric CO₂ concentrations from 0.028% of the atmosphere to 0.038% of the atmosphere. Since scientists often talk about the effect of a doubling of CO₂, this historic rise in CO₂ is 36% of a doubling.
4. Using simple math, we see that if temperatures have risen 0.6C due to 36% of a doubling, we might expect them to rise by 1.67C for a full doubling to 0.056% of the

atmosphere. But this assumes that the rise is linear — and we already said (and no one denies) that it is in fact a diminishing return relationship. Using a truer form of the curve, a 0.6C historic rise for 36% of a doubling implies a full doubling would raise temperatures by about 1.2C, or about 0.6C more than we have seen to date (see chart below). This means that the magnitude of global warming in the next century might be about what we have seen (and apparently survived) since 1900.



- Obviously, there is some kind of disconnect here. The IPCC predicts temperature increases in the next century of 4-8 degrees C. Big difference. In fact, the IPCC predicts we will get a 0.5C rise in just 20 years, not 70-100. Whereas we derived a climate sensitivity of 1.2 from empirical data, they arrive at numbers between 3 and 4 or even higher for sensitivity. The chart below shows that to believe sensitivity is 3, we would have to have seen temperature rises due to man historically of 1.5C, which nobody believes.

Est. Climate Sensitivity to CO2



So how do they get accelerating temperatures from what they admit to be a diminishing return relation between CO2 concentration and temperature? And for which there is no empirical evidence? Answer: Positive feedback.

6. Almost every process you can think of in nature operates by negative feedback. Roll a ball, and eventually friction and wind resistance bring it to a stop. Negative feedback is a ball in the bottom of a bowl; positive feedback is a ball perched precariously at the top of a mountain. Positive feedback breeds instability, and processes that operate by positive feedback are dangerous, and usually end up in extreme states — these processes tend to "run away" like the ball rolling down the hill. Nuclear fission, for example, is a positive feedback process. We should be happy there are not more positive feedback processes on our planet. Current man-made global warming theory, however, asserts that our climate is *dominated* by positive feedback. The IPCC posits that a small increase in temperature from CO2 is multiplied 2,3,4 times or more by positive feedbacks like humidity and ice albedo.
7. There are three problems with these assumptions about positive feedback. One, there is no empirical evidence at all that positive feedbacks in climate dominate negative feedbacks. The 20th century temperature numbers we discussed above show no evidence of these feedbacks. Two, the long-term temperature record demonstrates that positive feedbacks can't dominate, because past increases in temperature and CO2 have not run away. And three, characterizations of stable natural processes as being

dominated by positive feedback should offend the intuition and common sense of any scientist.

8. An expected 21st century increase of 0.5 or even 1 degree C does not justify the massive imposed government interventions that will be costly both in dollars and lost freedoms. In particular, the developing world will be far better off hotter by a degree and richer than it would be cooler and poorer. This is particularly true since sources like *an Inconvenient Truth* wildly exaggerate the negative effects of global warming. There is no evidence tornadoes or hurricanes or disease or extinction are increasing as the world warms, and man-made warming advocates generally ignore any potential positive effects of warming. As to rising sea levels, the IPCC predicts only a foot and a half of sea level rise even with 4 or more degrees of warming. Sea level rise from a half to one degree of warming would be measured at most in inches.

OK, so that was more than 60 seconds. But it is a lot less than [80 pages](#). There is a lot of complexity behind every one of these statements. If you are intrigued, or at least before you accuse me of missing something critical, [see my longer paper on global warming skepticism first](#), where all these issues and much more (yes, including tree rings and cosmic rays) are discussed in more depth.