

RESPONSE TO A LETTER BY PROF W. COLLINS TO THE AUSTRALIAN, 13.8.2008

http://blogs.theaustralian.news.com.au/letters/index.php/theaustralian/comments/the_bottom_line_is_that_we_humans_cant_prevent_it

'The bottom line is that we humans can't prevent it'

Letter by: **W.J. Collins** School of Earth and Environmental Sciences James Cook University, Townsville, Qld (in **Times Roman** fonts)

Response by: **Dr Andrew Glikson**, Australian National University (In **Arial Narrow** fonts) **(AG)**

CAMERON Stewart ("Key degrees of difference", Inquirer, 9-10/8) misses the point in the global warming debate. It's not about mainstream (read official) scientists versus sceptics, enthusiasts or bloggers. Many of these people are good scientists. The debate is about how and why climate change is happening. It's about whether humans are causing it and whether we can stop it.

Ice ages are the most obvious evidence for climate change, and we are coming out of the medieval Little Ice Age now.

NOT SO. The Maunder Minimum (MN - AD1650-1700) ("little ice age") was related to very low sunspot activity (almost no spots for 50 years. Fig. 1). No unusual sunspot activity is observed since about AD1750. Mean temperatures during the MN were about -0.4 degrees C below than mean temperature during the 1st Millennium (base line), whereas mean temperature at present is about +0.8 degrees C above the baseline (Fig. 2). No increase in the maximum number of sunspots is observed from the 1970s, when the effects of greenhouse gas emissions (>300 GtC since the mid-19th century) and atmospheric CO₂ levels (280 to 387 ppm rise) (the highest level recorded for the Pleistocene) are manifested through decoupling of temperatures from the solar factor (Fig. 3, 5), accompanied with sharp acceleration of temperatures, ice melt rates and sea level rise. (AG)

As global temperatures progressively warm, many consider that this relates to carbon emissions dating from the 1850s, but the increase began approximately 300 years ago. Also, before the Little Ice Age, Greenland was greener (and hotter) 1000 years ago than it is today. Climate change is cyclic.

NOT SO. Mean global temperatures 1000 years ago were about -0.6 degrees C lower than at present (see Fig. 2). The sharp rise of CO₂ above about 280 ppm commenced about AD1750 – consistent with the onset of the industrial revolution (see Fig. 4). (AG)

So Stewart is right to suggest we look at the longer trends. Interestingly, while the total carbon emissions have increased steadily over the past 150 years, global temperatures have cycled between hotter and cooler on a 60-70 year scale, and even at shorter 4-5 year scales more related to El Nino events.

**Collins makes no reference to mean global temperature data (see Figs 2, 3, 5, 7).
Is Collins suggesting that, contrary to basic physics of the atmosphere, the odd 300 GtC emitted since the mid-19th century had no infrared radiative effects? What caused the sharp rise of temperatures from the mid-1970s by 0.6 degrees (Fig. 5)?
The ENSO (El-Nino – La-Nina) effects are annual or multi-annual, whereas climate change is occurring on a decadal time scale. (AG)**

More interesting is that carbon dioxide uptake into the atmosphere is also cyclic, associated with El Nino events. This suggests that the quantity of atmospheric carbon is mainly controlled by circulation patterns in the ocean, which is not surprising because 60 per cent of recyclable carbon is stored there.

NOT SO. The annual variations in atmospheric CO₂, shown in are on the order of 6 to 8 ppm, while the mean CO₂ keeps rising to levels not recorded earlier in the Pleistocene (Fig. 7). (AG)

Some points made by David Evans ("No smoking hot spot", Opinion, 18/7) are most enlightening. He stated that \$50 billion has been spent on global warming science since 1990 but no one has shown that it's caused by carbon emissions.

WHERE DOES THE FIGURE OF \$50 BILLION COME FROM?

(p.s. Even if the world spent \$billions or \$trillions on research/mitigation/adaptation of climate change, would not this constitute REAL defence, i.e. a better investment in the future than continuing to manufacture armaments and conduct wars?). (AG)

No one has been able to measure the predicted hot greenhouse zone in the atmosphere, 10km above us. This zone would have been the surest evidence that we are in a greenhouse condition caused by human activity.

**NOT SO! As shown by the attached plot (Fig. 7) surface temperatures and satellite measurements are essentially concordant. During the 20th century surface temperatures increased by about +0.07°C/decade and since 1979 by +0.17°C/decade. Satellite measurements of lower troposphere temperatures show a trend of :
RSS (Remoste Sensing Systems) +0.170°C/decade;
UAH (University of Alabama) +0.13 °C/decade.
Stratospheric temperature anomalies are removed by outward radiation (AG)**

As the climate change debate moves from the scientific to the political, it is important to stay with the facts. The bottom line is that humans cannot prevent global warming. Therefore, we should not be forced into emissions trading schemes, or any other scheme that sacrifices Australia's economic advantage and standard of living for the wrong reasons. Sure, let us try to lessen our environmental impact and develop a sustainable economy, but we should not be carried away by misconceptions about what is driving climate change. It's with the Earth itself.

Conclusion:

Collins letter implies the >300 GtC carbon emitted by human industry has little or no bearing on accelerated climate change, migrating climate zone, rising temperatures, melting polar ice, rising sea levels. In so far as Collins may wish to submit a scientific paper to this effect, I am willing to debate it in detail. Indeed, any science-based refutation of the dim spectre of dangerous climate change, or at least of the human factor, should result in a huge sigh of relief all over the world, including my own (AG)

The title of Collins letter “The bottom line is we humans can’t prevent it” is interesting, namely it implies humans can release fossil carbon stored in the Earth by biological activity over some 400 million years of evolution, but can not avoid serious deterioration in the conditions of the atmosphere, on which life depends!

Figures

Fig. 1 – Sun spot activity. http://en.wikipedia.org/wiki/Maunder_minimum

Fig. 2 – paleo-temperatures back to BC 2000. http://en.wikipedia.org/wiki/Little_Ice_Age

Fig. 3 – Decoupling of temperatures from solar activity since the 1970s (Solanki, 2002).

Solanki S. K. 2002. Solar variability and climate. Change: is there a link? Solar Physics 43, 5.9 – 5.13.

Fig. 4 – CO2 levels since AD1000 (NASA).

<http://svs.gsfc.nasa.gov/vis/a000000/a002100/a002195/index.html>

Fig. 5 – Global mean temperature rise and sunspot activity from the mid-1970s

<http://www.skepticalscience.com/Arctic-sea-ice-melt-natural-or-man-made.html>

Fig. 6 – Annual variations in CO2 levels (NASA).

<http://svs.gsfc.nasa.gov/vis/a000000/a002100/a002195/index.html>

Fig. 7 – Satellite and surface temperature measurements.

http://en.wikipedia.org/wiki/Satellite_temperature_measurements