

## Limited role for CO<sub>2</sub>

*The Deniers -- Part X*

*Lawrence Solomon, Financial Post*

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Astrophysicist Nir Shariv, one of Israel's top young scientists, describes the logic that led him -- and most everyone else -- to conclude that SUVs, coal plants and other things man-made cause global warming.

**Step One** Scientists for decades have postulated that increases in carbon dioxide and other gases could lead to a greenhouse effect.

**Step Two** As if on cue, the temperature rose over the course of the 20th century while greenhouse gases proliferated due to human activities.

**Step Three** No other mechanism explains the warming. Without another candidate, greenhouse gases necessarily became the cause.

Dr. Shariv, a prolific researcher who has made a name for himself assessing the movements of two-billion-year-old meteorites, no longer accepts this logic, or subscribes to these views. He has recanted: "Like many others, I was personally sure that CO<sub>2</sub> is the bad culprit in the story of global warming. But after carefully digging into the evidence, I realized that things are far more complicated than the story sold to us by many climate scientists or the stories regurgitated by the media.

"In fact, there is much more than meets the eye."

Dr. Shariv's digging led him to the surprising discovery that there is no concrete evidence -- only speculation -- that man-made greenhouse gases cause global warming. Even research from the Intergovernmental Panel on Climate Change-- the United Nations agency that heads the worldwide effort to combat global warming -- is bereft of anything here inspiring confidence. In fact, according to the IPCC's own findings, man's role is so uncertain that there is a strong possibility that we have been cooling, not warming, the Earth. Unfortunately, our tools are too crude to reveal what man's effect has been in the past, let alone predict how much warming or cooling we might cause in the future.

All we have on which to pin the blame on greenhouse gases, says Dr. Shaviv, is "incriminating circumstantial evidence," which explains why climate scientists speak in terms of finding "evidence of fingerprints." Circumstantial evidence might be a fine basis on which to justify reducing greenhouse gases, he adds, "without other 'suspects.'" However, Dr. Shaviv not only believes there are credible "other suspects," he believes that at least one provides a superior explanation for the 20th century's warming.

"Solar activity can explain a large part of the 20th-century global warming," he states, particularly because of the evidence that has been accumulating over the past decade of the strong relationship that cosmic-ray flux has on our atmosphere. So much evidence has by now been amassed, in fact, that "it is unlikely that [the solar climate link] does not exist."

The sun's strong role indicates that greenhouse gases can't have much of an influence on the climate -- that CO<sub>2</sub> et al. don't dominate through some kind of leveraging effect that makes them especially potent

drivers of climate change. The upshot of the Earth not being unduly sensitive to greenhouse gases is that neither increases nor cutbacks in future CO2 emissions will matter much in terms of the climate.

Even doubling the amount of CO2 by 2100, for example, "will not dramatically increase the global temperature," Dr. Shaviv states. Put another way: "Even if we halved the CO2 output, and the CO2 increase by 2100 would be, say, a 50% increase relative to today instead of a doubled amount, the expected reduction in the rise of global temperature would be less than 0.5C. This is not significant."

The evidence from astrophysicists and cosmologists in laboratories around the world, on the other hand, could well be significant. In his study of meteorites, published in the prestigious journal, *Physical Review Letters*, Dr. Shaviv found that the meteorites that Earth collected during its passage through the arms of the Milky Way sustained up to 10% more cosmic ray damage than others. That kind of cosmic ray variation, Dr. Shaviv believes, could alter global temperatures by as much as 15% --sufficient to turn the ice ages on or off and evidence of the extent to which cosmic forces influence Earth's climate.

In another study, directly relevant to today's climate controversy, Dr. Shaviv reconstructed the temperature on Earth over the past 550 million years to find that cosmic ray flux variations explain more than two-thirds of Earth's temperature variance, making it the most dominant climate driver over geological time scales. The study also found that an upper limit can be placed on the relative role of CO2 as a climate driver, meaning that a large fraction of the global warming witnessed over the past century could not be due to CO2 -- instead it is attributable to the increased solar activity.

CO2 does play a role in climate, Dr. Shaviv believes, but a secondary role, one too small to preoccupy policymakers. Yet Dr. Shaviv also believes fossil fuels should be controlled, not because of their adverse affects on climate but to curb pollution.

"I am therefore in favour of developing cheap alternatives such as solar power, wind, and of course fusion reactors (converting Deuterium into Helium), which we should have in a few decades, but this is an altogether different issue." His conclusion: "I am quite sure Kyoto is not the right way to go."

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