Friis-Christensen - Science, not politics

Lawrence Solomon, Financial Post

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Of all the scientists who are labelled "deniers" because they don't support the orthodoxy of the United Nations Intergovernmental Panel on Climate Change, none comes in for more vilification than Eigil Friis-Christensen. For understandable reasons.

Dr. Friis-Christensen questions the very premise that man-made activities explain most of the global warming that we see, and through his work he has convinced much of an entire scientific discipline to explore his line of inquiry. With his 1991 paper in Science, showing a startling correlation between global warming and the activities of the sun, Dr. Friis-Christensen unleashed a wave of related research by solar scientists seeking to learn the mechanisms through which solar activity may influence climate on Earth. Thanks largely to his early efforts, and ongoing efforts, too, a growing proportion of the world's solar scientists no longer place man at the centre of the climate-change universe.

Dr. Friis-Christensen's interest in climate change predates the Kyoto Treaty of 1995, it predates the Rio Conference in 1992 that led to Kyoto, it even predates the first report in 1990 of the IPCC, the body spearheading the vast majority of the climate-change research now underway.

"My interest dates back to an extreme solar storm that occurred in August, 1972," he explains. "I was in Greenland, on my first assignment in my new job as geophysicist at the Danish Meteorological Institute, setting up a chain of magnetometer stations on the west coast."

Dr. Friis-Christensen remembers lying in his tent and "watching the ink pens of my recorder going so wild that they nearly tore the paper chart apart -- we had no digital recording at that time -- and I wondered whether such big events could also have an influence in the lower atmosphere, on weather and climate.

"That storm cut off my contact to the outside world for nine days -- all radio communication was blacked out -- so I had lots of time to reflect on the enormity of the forces at play."

Dr. Friis-Christensen would soon discover he had a soulmate in his reflections, his mentor and a division head at the institute, Knud Lassen, a pioneer in research into the aurora borealis. They followed developments in the field, even gave lectures on the subject, which was then topical, although not for the reasons we're familiar with today -- in the mid-1970s, climate scientists feared global cooling.

Yet for both scientists, the interest was more a hobby than a formal area of study -- until 1989, when Dr. Lassen, 68 years old and nearing retirement, decided to cap his career by pursuing the hunch they had long held. Dr. Friis- Christensen needed no persuading to join him on his quest. Two years later, their path breaking study was published, though without fanfare. Global cooling had receded from public memory and global warming was not yet a hot topic.

That soon changed, with the growing role of the newly created IPCC.

Upon the IPCC's creation, with its mandate to investigate the causes of climate change, Dr. Friis-Christensen was hopeful of advances in solving one of the scientific passions of his life. To participate in the IPCC's quest for answers, he travelled to its January, 1992, meeting in Guangzhou, China, as part of the Danish delegation. By then, he had succeeded Dr. Lassen to become head of the institute's

geophysics division.

But to his astonishment, and despite the recent publication of his Science article, the IPCC refused to consider the sun's influence on Earth's climate as a topic worthy of investigation. The scientists at the IPCC had decided that man-made causes and man-made causes alone deserved their attention. But ignoring the potential role of the sun didn't make it go away, especially since Dr. Friis-Christensen and other solar scientists refused to abandon their research.

Then the attacks on Dr. Friis-Christensen's credibility began.

His 1991 study had errors, his detractors stated. His 1995 study only made it worse, others chimed in. He fabricated data, people whispered. A recent article in the U.K.'s Guardian newspaper by IPCC partisan George Monbiot well represents the tenor of the attacks:

"A paper published in the journal Eos in 2004 reveals that the 'agreement' [between temperatures and solar activity that Friis-Christensen's 1991 study found] was the result of 'incorrect handling of the physical data.' The real data for recent years show the opposite: that the length of the sunspot cycle has declined, while temperatures have risen. When this error was exposed, Friis- Christensen and his co-author published a new paper, purporting to produce similar results.

"But this too turned out to be an artefact of mistakes -- in this case, in their arithmetic.

"So Friis-Christensen and another author developed yet another means of demonstrating that the sun is responsible, claiming to have discovered a remarkable agreement between cosmic radiation influenced by the sun and global cloud cover ... . But, yet again, the method was exposed as faulty. They had been using satellite data which did not in fact measure global cloud cover.

"A paper in the Journal of Atmospheric and Solar-Terrestrial Physics shows that, when the right data are used, a correlation is not found."

How much of this litany in the Guardian demonstrates actual errors by Dr. Friis-Christensen? In truth, none of it. Virtually all of the criticisms of Dr. Friis- Christensen, published and republished willy-nilly, stem from a lone advisor to the Danish government's Ministry of the Energy with scant research credentials -- he even admits that the government hired him largely for his communications skill.

There is no arithmetic error in Dr. Friis-Christensen's studies. Remarkably, his critics attributed someone else's error to him, and then kept doggedly repeating their assertion. Neither are there errors in methodology, although this charge likewise gets repeated without foundation. Neither should it be surprising that different studies of different aspects of solar behaviour would yield anomalies. It is through such exceptions that science proves the rule.

Do the epithets work? With the uninformed, they work a great deal. With the vast majority of his peers, the attacks more represent irritants, noise that obfuscates the political debate but not what counts -- the science. Because of his scientific rigour, Dr. Friis-Christensen has won a citation from the Journal of Geophysical Research of the American Geophysical Union for "Excellence in refereeing" and he is sought after by the world's leading agencies, who have elevated him to the top ranks of his profession.

He now chairs the Danish Space Consortium, heads a European Space Agency mission advisory group, and is vice-president of the International Association of Geomagnetism and Aeronomy. Many of the world's most prestigious space-related research institutions -- the European Organization for Nuclear Research in Geneva, the Max Planck Institute for Solar System Research in Germany, and the Pulkovo Astronomical Observatory in Russia among them --are now building on the work that Dr. Friis-Christensen set in train.

Bit by bit, they are putting the pieces of the climate puzzle together, slowly learning more and more about the amazingly complex relationships among solar and cosmic forces, on the one hand, and the array of forces on Earth.

Where this slow, methodical brand of solar science will ultimately lead, no one can yet say. Such uncertainty does not characterize the brand of climate science practiced by the IPCC.

LawrenceSolomon@nextcity.com - Lawrence Solomon is executive director of Urban Renaissance Institute and Consumer Policy Institute, divisions of Energy Probe Research Foundation.

CV OF A DENIER:

Eigil Friis-Christensen is director of the Danish National Space Centre and a member of the space research advisory committee of the Swedish National Space Board, where he serves on the panel on space weather. He is also a member of a NASA working group and a member of the Earth-science advisory committee of the European Space Agency. The author or co-author of some 100 peer-reviewed articles, he has been chair of the scientific advisory group of the Institute of Space Physics. He holds a Magisterkonferens (PhD equivalent) in geophysics from the University of Copenhagen.