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Science speak and other strange languages

By Skid Crease

Ages ago, one anonymous wordsmith stated: ?If there is no meaning to words, there can be no truth among men.?
I would have added my mother's impatient quip when an answer to a simple question she had asked became too complicated: ?I just need to know the time; if I had wanted to know how to build the clock, I would have asked.?
So it is with the difference between science reports and theories based on that data collection, and the language used to explain that to the public, government, business, and industry leaders.
For example, in an article a few weeks ago I referred to Arctic Amplification and Arctic Acceleration to explain the forces behind some of our recent wacky winter weather. The actual term used by scientists is Polar Amplification Weather.
A true meteorological researcher would never use a phrase like ?wacky weather,? but a storyteller trying to put the science research into understandable terms for the general public can. Similarly, I chose Arctic Amplification and Arctic Acceleration (my term, by the way) to convey the impact of the methane greenhouse gas positive feedback loop on the Canadian Arctic caused by accelerated thawing of the permafrost ? OK, too much already ? see what I mean.
Here's another example from a recent United Nations Environment Program (UNEP) report on Permafrost Melting:
?Thawing permafrost could emit 43 to 135 Gt of CO2 equivalent by 2100 and 246 to 415 Gt of CO2 equivalent by 2200. Uncertainties are large, but methane emissions from thawing permafrost could start within the next few decades and continue for several centuries, influencing both short-term climate (before 2100) and long-term climate (after 2100).?
These reports are technically complex and use careful language like ?uncertainties are large,? anthropogenic (human caused) greenhouse gas emissions ?could emit,? and thawing permafrost ?could start? to release emissions for several centuries.
My translation: ?As far as accelerating climate change is concerned, the train is out of the station and gaining speed, fueled on by methane gas from a rapidly warming Arctic.? See how much easier that is to understand.
Scientists must, by the very nature of the discipline, be cautious about absolutes, except for the exceptions of birth, death, gravity, thermodynamics, and evolution. An advisor at NOAA recently wrote me regarding my wacky weather article, that he would not have put it in quite so certain terms, suggesting that most peer reviewed scientific papers would have stated:
?These results suggest that as the Arctic continues to warm faster than elsewhere in response to rising greenhouse-gas concentrations, the frequency of extreme weather events caused by persistent jet-stream patterns will increase.? That being said he added there is a ?difference between careful science language and efforts to communicate effectively.?
Similarly, my former advisor at Environment Canada reviewed that same article and noted: First reaction was ?Skid, you're oversimplifying.? The relationship between the change in north-south temperature gradient and meandering jet streams is complex (since the gradient is the reverse in the stratosphere). However, upon second thought, I would indeed keep it simple. Go for it.?
The trick is to get valid scientific reports from practicing, published, and peer-reviewed scientists and put it into simple terms without losing the validity of their work. Climate change deniers love to jump on the slightest uncertainty in language or a blip in the research and pump it out on full volume in the media as proof that accelerating climate change is all really just a ?socialist plot,? to quote our current Prime Minister.
Recently, an ancient newspaper report surfaced, courtesy of the deniers, from a 1922 Washington Post article warning of a warming Arctic, claiming that this global warming phenomenon was really nothing new. I sent the report to another retired advisor from Environment Canada, who wrote me to say: ?There is very little we can say to refute Arctic reports written in 1922. The Arctic region was fairly unknown then and I expect reports in the Washington Post (not my preferred scientific reference) were largely speculative or actually fictitious.?
He did not bother to mention the obvious that would have made the 1922 report questionable: the increase in the number of weather stations, the technological improvements in data gathering equipment, the advent of satellite sensing systems, or the global network of computer modelers now researching accelerating climate change. The first successful TIROS-1 weather satellite for the United States wasn't launched until 1960 and currently the GOES 12, 13, and 15 weather satellites provide the USA and Canada with most of their weather data.
So, between the quality of weather stations, instrumentation systems, and computer models now available to us, combined with the plethora of legitimate scientific reports, all we need now are good science reporters who will not twist the words of the guardians of our galaxy.

It is critically important that we as a democratic citizenry, demand that our Canadian scientists have uncensored access to their peers at global conferences, to the general public, and to each other on open dialogue. The free and unedited sharing of their research may just give us the opportunity to create the policies we need to mitigate our acceleration into a rapidly changing future.
And, of course, we must demand access to good storytellers. Who else can speak for the Truffula trees?

Skid Crease is an award-winning outdoor and environmental educator, a keynote speaker, a storyteller, an author, and a community volunteer. He taught with the North York and Toronto District School boards for 35 years, and officially ?retired? from the Faculty of Education, York University, where he was a Course Director and Environmental Science Advisor. Skid has worked with scientists from Environment Canada (pre-2005), NASA, and the Hadley Centre for Climate Prediction and Research in a quest to put an understandable story behind the wealth of their scientific data.