Turning words into action on climate change

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> "The next translation of the climate story – on which many are working – needs to highlight a set of not just warnings, but also success stories."

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The annual climate change COP, most recently held in Doha (Qatar), has now come and gone. As has been dissected at nauseam, very little was accomplished. Some will see this as a failure, as I do, and others will reasonably enough note that this meeting, the 18th such COP, was never intended to be a milestone moment. The current plan, in fact, is for a 'post-Kyoto' international climate agreement to be adopted only at the COP20 summit in December 2015 (the Kyoto Protocol was adopted on 11 December 1997 in Kyoto, Japan, and entered into force on 16 February 2005. As of September 2011, 191 states had signed and ratified the Protocol. The USA signed but did not ratify the Protocol and Canada withdrew from it in 2011).

Of course the 'milestone agreement' was to have been signed at COP15 in Copenhagen (Denmark) in 2009, where, famously, no deal was reached. The Kyoto Protocol itself, while an excellent training ground for what was two decades ago a climate-ignorant world, was only envisioned as "a small slowing in the rate" of emissions increase.

While articles, dissertations, books and movies have already begun to analyze the failures and weak points in the climate negotiating process, we need to take another look at the larger context of the interaction of climate science, climate economics and the politics of inaction in the face of mounting human and environmental needs.

First, it is sadly clear that 'simply' having an overwhelming weight of scientific evidence of climate change and seeing those assessments, if anything, prove to be too conservative in the mounting experience of severe storms, droughts, fires and ecological change, is not sufficient. If it were, we would have acted, because we have overwhelming data on all those fronts. A summary of the IPCC's findings – a group I am proud to have served in a number of roles for the past 15 years – is presented in **Figure 1**. This figure is specifically and most centrally not about the scientific record alone. That record is compelling, not only in the global or hemispheric records of temperature, sea level and loss of snowfall that it presents, but also in the numerous local records of climate change that have been reported. These diverse records of changes in rainfall, shifts in the seasons, damaged coral and other metrics is wonderfully compiled in an interactive website [101].

What is most important about this figure is the juxtaposition of the language of science and the language of, language. Note in particular that as the physical climate change metrics have progressed, the words – shown at

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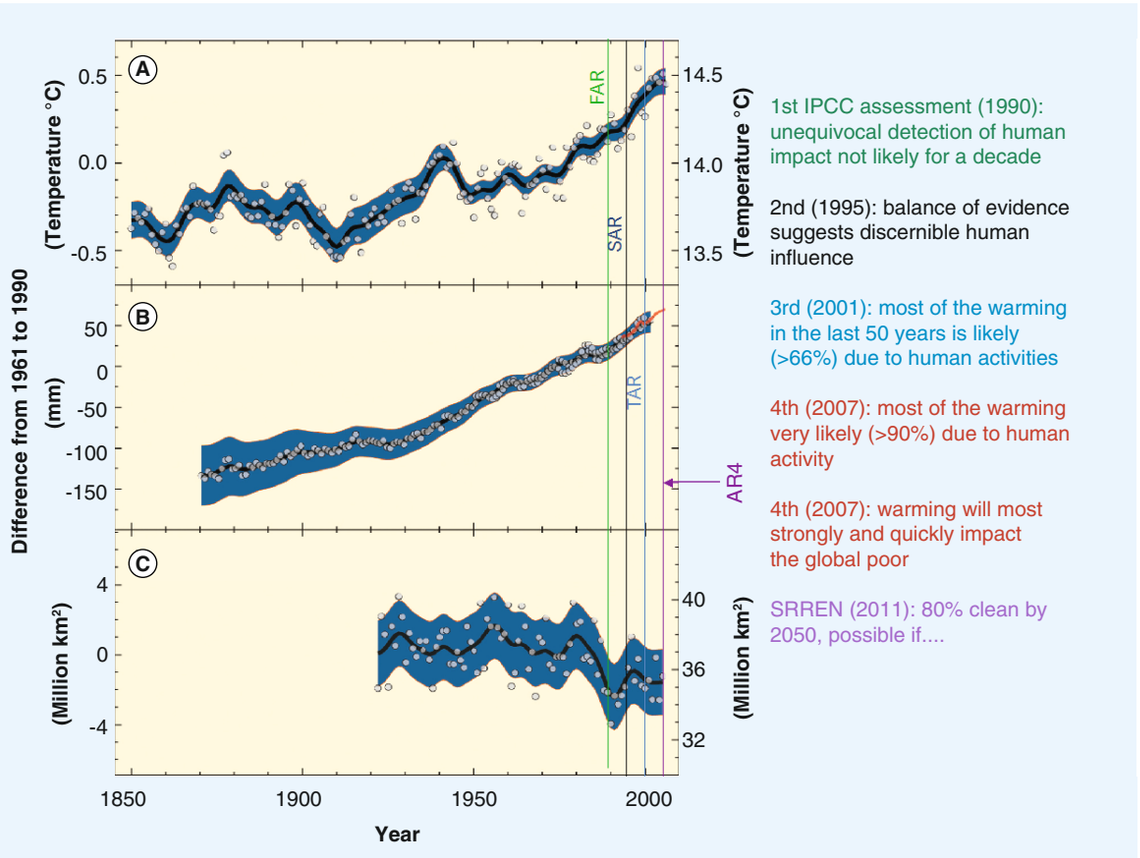

Figure 1. Superposition of the state of climate science in three key datasets, and the dates of the First, Second, Third and Fourth Assessment Reports plotted as vertical lines. (A) Global average surface temperature; **(B)** global average sea level; **(C)** northern hemisphere snow cover. On the right are the key statements from each of these reports, along with the conclusion of the Special Report on Renewable Energy (completed in 2011), which found that up to an 80% decarbonization of the global economy was possible, but only if we can enable and launch a large-scale transition to a clean energy system consistent with what a number of 'leading edge' cities, regions and nations have already accomplished or started.
AR4: Fourth Assessment Report; FAR: First Assessment Report; SAR: Second Assessment Report; SRREN: Special Report on Renewable Energy; TAR: Third Assessment Report.
Data taken from [4].

right – have slowly but surely progressed. In 1990, at the time of the First Assessment Report [1] the strongest scientific consensus statement was that another decade of data would likely be needed to clearly observe climate change. Through the second to fourth reports, increasing clarity on the science of climate change translated into a consensus of overwhelming blame on human activities [2–4].

Despite this 'Rosetta Stone', in translating science to language we have failed to act collectively.

What will it take to connect these different languages?

Clearly financial, moral and other translations are needed, and of course some have been tried and all have been debated. In what I hope will become a defining moment of this transition, the World Bank commissioned a report on both the likely extent of climate change and the impact of that change [5]. This report says nothing new scientifically, but perhaps that is its strength. There is no need to debate the science, which the authors, from the Potsdam Climate Institute (PIK), review. In fact, their findings are very similiar to those of the IPCC's Fourth Assessment Report that is included in **Figure 1**, which we have already discussed.

In one effort to build a set of translations of one particular climate strategy, Ann Kinzig and I developed a picture of a world where we share carbon rights and responsibilities equally and equitably [6]. We then took the same analysis – compelling to us – and brought it

to the audience of development and climate activists [7], and then to the energy and policy community [8]. This process of translating proposed solutions – innovations – between interest groups, has been in far too short supply recently.

"*The Earth system's responses to climate change appear to be non-linear,*" points out PIK Director, John Schellnhuber. *"If we venture far beyond the 2°C guardrail, towards the 4°C line, the risk of crossing tipping points rises sharply. The only way to avoid this is to break the business-as-usual pattern of production and consumption."*

What is important, and deserves repeating to all agencies involved in international development and the financing of health, education, infrastructure and other drivers of economic growth, appears in the preface of the report written by the new World Bank President Jim Yon Kim: *"…most importantly, a 4°C world is so different from the current one that it comes with high uncertainty and new risks that threaten our ability to anticipate and plan for future adaptation needs."*

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This statement warrants careful discussion. Not only is World Bank President Kim affirming the results of the PIK study, and by direct extension the IPCC (because the same authors at PIK are also central to the work of the IPCC), but he is clearly noting that while many climate analysts rightly talk about the need to not exceed a 2°C temperature increase, the path the world is currently on, namely 4–6°C, will be catastrophic. This may come as too soft to the science community, but it is where the world is sadly headed. It will be far easier now for the World Bank to commission the next report that is needed, not just an assessment that we must work to avoid a 2°C warmed world, but that the next report should be a playbook of successful strategies to promote sustainable economic activity within that climate envelope. I volunteer to write such a report.

So where are we? The science is largely clear, and clear enough to act. Now, the economic damages are being tallied. And now core lenders and donors to the development enterprise – namely at the 14,500 employee World Bank where many current and even more future financial leaders around the world work at some time during their careers – have come onboard to clearly warn that the path we are on is totally inconsistent with a livable world for the rich and for the poor.

The next translation of the climate story – on which many are working – needs to highlight a set of not just warnings, but also success stories. Developing a suite of 'playbooks' of successful actions. In another set of papers Christian Casillas and I have worked to translate the financial language of climate and economic co-benefits into community-level menus of action. These papers have used the popular 'marginal abatement' framework favored by many nations and cities to look more locally at how individual households and communities can see the alignment of a new systems approach, or 'systems science' of climate options [9–11].

This process of translation is one we must accelerate dramatically. We now have the confluence of scientific, technical, economic and ethical languages for climate protection. There are no honest excuses for inaction left.

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