

Chapter C.3 Suggestions for science, policy, and society

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A. Where I think we may be going wrong

Asymmetrically applied KP argumentation

- non-linear, chaotic or discontinuous processes (less reference to non-stationary)
- CO2 & CH4 leveraging, versus H2O leveraging
- failure to consider obvious interpretations, such as CO2 is a function of temperature!
- association, correlation and the danger of assuming causation. But the danger of ignoring correlation, and the worse sin of assuming casuation with virtually no causation.
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Attention & consciousness - blind us to reality, build on belief systems

Blind faith in computer models - the scientists seem to be the puppets of their own computer programs

KP has been rigorously reviewed and re-tested

science and management are fashion industries - like most of human activities

People acting NOT based on what they know or believe, but based on what they think others believe (eg votes in elections, stock market investors, etc etc)

If a manager/ policy maker/ politician is so short on time or knowledge and skills that everything has to be summarized in oversimplistic terms for them to make a decision, then they should either clearly state the limitations of their decision basis, or they shouldn't be the ones making a decision. The problem is that even with relatively simple interactions between several different systems that normally require different expertise and background, relatively few people will have sufficient context, background and skill to make consistently good decisions.

Peer review is working to a limited extent, but rather than to complicate reviews and funding on a "local" basis, it may be better to institute more effective and diversified reviews and comments at a more general level, again perhaps modelled very loosely on the court system.

Small-world universal function approximation characteristic of GCM models -

The "Conspiracy Theory" disease - isn't the answer

B. Who's holding the bag?

Academics - mostly bad, but at least this is where the bright spots are

Government scientists and research labs - failed the public miserably

Government policy analysts - amplified the problems and

Engineering Societies - failed to provide a "hard nosed" counter-point. Are engineers now as badly afflicted by politically-correct blindness as scientists? We WANT scientists to be ultra creative and taking long shots. There aren't as many excuses for the engineers and their societies.

C. How does one identify which scientists are right?

It safer to assume that you probably can't - at the very least its clear that leadership has consistently failed to "pick the winners" in science, business,

and you don't force a consensus

Markets - local produce markets, corporate and retail markets, financial markets, the arts, politics, and other markets seem to work the best for many situations.

Scientific consensus as a benchmark, not a conclusion nor an answer -

D. Management, policies and actions for scientific research

Consensus can be poison to science, forced or driven consensus probably much more so.

Science and policy are incompatible if the main policy driver is to find justifications for a desired policy approach, past, present or future. However, perhaps there is no way to avoid this, in which case it may be best to ensure that political control over science is diversified by political party, industry group, and the geographical and cultural regions of a country. Diversity beats insane consensus every time. And as our entire legal traditions show, truth does NOT come from impartial, well-intentioned individuals cooperating peacefully in a consensus environment, it comes from confrontational arguments within a professional and well-judged framework.

The scientific peer review process is inadequate for ensuring that broad public policy mandates have a sound basis.

For huge initiatives involving public expenditure on the scale of the Kyoto Premise, or where several options cannot easily be pursued simultaneously, the UN-IPCC type of process and peer review are clearly, absolutely inadequate means of providing any verification or coincidence that the scientific consensus is diligent, honest, and competent. "Monkey votes and opinion polls" driven by a public programmed by the media are no answer either. We need a court-like system, adapted to science, and with "clear labels" on the performance, uncertainty, and quality of results, researchers and policy analysts, and research and policy institutes. Note that there may be a huge difference between a researcher's "long-term" record, and his performance on a specific issue, but assessments are needed on the latter without reference to the former.

The model and example provided by the judicial system (competition between viewpoints, judged by a capable individual or a jury) may not be the ideal setup for science disputes, but its probably far better than what we have now.

Don't appoint central public coordination and funding of all science related to an issue. Perhaps one should certainly NOT have a Chief Scientist role for deciding what science is right, and perhaps policy makers should look for a diverse range of plausible scientific models rather than trying to . For the really big, expensive questions, a competition between scientific schools of thought AND funding agencies may be better.

Given the repeated failures of government science and policy shops in relation to many major complex issues, the public might be better served by dramatically reducing in-house government staffing towards a much smaller core of staff, in favour of re-allocating at least two-thirds of the financial resources to external science and policy organizations that represent a diversity of perspectives. This would inhibit the "poisoning effect of consensus and top-down control over directions of investigation and the reporting of result. In a sense, universities already provide most of the novel science and policy, and there is a dearth of capabilities in industry associations, and non-governmental organizations to effectively respond to the issues from their perspectives. A competitive and diverse environment for policy and science organizations, as well as the organizations that fund them, would help strengthen the successes which are already achieved by small pockets of academics.

Withdraw from the UN-IPCC and other centralised, consensus systems, including those of the federal government of Canada.

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