Earth Syst. Dynam. Discuss., 4, C285–C290, 2013
www.earth-syst-dynam-discuss.net/4/C285/2013/

Earth System Dynamics
Discussions

Interactive comment on "Agnotology: learning from mistakes" *by* R. E. Benestad et al.

J. C. Hanekamp

hjaap@xs4all.nl

Received and published: 24 June 2013

Introduction

'Learning from mistakes', as the paper asserts, is highly important in research and education. As a teacher at the University College Roosevelt (UCR) of both chemistry and the history and philosophy of science, the paper of Benestad et al. might well function as an example in my classes with respect to (the reduction of) ignorance (with respect to climate change). As such, in this review, I will focus on structure and logic. Furthermore, how one considers the discourse on human-induced climate change is wholly irrelevant in this comment.

Structure

'In principle, the scientific way of thinking is the ideal means of resolving questions

about causality, and science can provide valuable guidance when there are conflicting views on matters concerning physical relationships. One of the scientific virtues is debate and disagreement about different hypotheses, making it dynamic and providing a driving force for progress. In this process, controversial questions should be addressed with the scientific method and rigour, and in order to provide convincing answers, it is important that the process is transparent, the results are replicable, the hypotheses testable, and the tests objective. It is also important that critiques and debates are conveyed by the scientific literature when past findings are challenged.' (p. 452 – 453)

These are promising words. This rudimentary approximate of the philosophy of science, however, is only reserved for those authors that do not share 'the view presented by the mainstream climate research community ...' (p. 453, l. 14 – 15). This introduces asymmetry in the paper which will be the focus in the subsequent comments.

The authors' focus is strengthened further by the fact that 'in the understanding of the climate between experts and the lay public, and a common denominator between all the examples reported here and in the supporting material is that they all represent a contribution towards the agnotology associated with the climate change issue.' (p. 454, l. 15 – 18) In other words, the agnotology ('the study of how and why we do not know things' p. 452, l. 16 – 17.) of climate change is a matter of the public not understanding or being misinformed away from the overwhelming 'consensus in the peer-reviewed climate science literature that humans are causing global warming'. (p. 454, l. 13 – 14)

Subsequently, '[a]ll the examples discussed in this paper have been cited in the public discourse to dispute the causes of climate change, ...' (p. 453, l. 28 – 29) Furthermore, it is mentioned that there are 'deliberate attempts to manufacture doubts and controversies about well-established scientific conclusions, such as about climate change ...' (p. 455, l. 4 – 6) both inside and outside peer-reviewed literature. To be sure, peer review publication by itself does not assure validity, as the authors point out. (p. 455, l. 9)

Comments

The central question that is raised immediately by the paper is whether agnotology exclusively is the playing field of those who criticise the ostensible consensus position on human-induced climate change or whether it is found in the latter as well, e.g. as to manufacture some kind of consensus. Thus, on what grounds do the authors think that human-induced climate change is scientifically well established and thus beyond any scrutiny? (Indeed, which position in any scientific discourse is beyond scrutiny?) Consensus seems the only reference ('evidence') in the paper whereby the whole exercise consequently becomes question begging. The basic aspect of science, however, is proof (either empirically or logically), not assumption. Thus a simple referral to the consensus of some view on human-induced climate change simply cannot do. As a result, the argument as a whole collapses into circularity. This is the critical and unacceptable asymmetry the paper introduces devoid of any clarification or evidential basis.

Incidentally, this criticism is emphatically not an implicit reference to any purported agnotological 'misbehaviour' on the part of representatives of the consensus view such as the IPCC or the US NRC. Logically, the approach the authors chose must by default capture the symmetry of the debate they themselves initiate. More to the point, they need to prove as carefully as possible that their approach can only apply to those that criticise the alleged consensus view on human-induced climate change rather than simply assume it with reference only to some kind of consensus. Consequently, no amount of examples they might bring forward in support of their claims can be regarded as proof of their argument whatsoever.

Worse, the corollary of the authors' argument seems to be that one requires only a single basic agnotology example in the discourse the authors assume to be free thereof in order to refute the paper in its entirety. (It seems reasonable to assume that someone already did produce such an example or examples.) No attempt thereto, in line with some form of falsification, has been made. So, the very reproducibility they require from others does not apply to their own work, which introduces another kind of inacceptable

asymmetry.

Furthermore, the very a priori (ex cathedra might be a more accurate descriptor) exclusion of the consensus view on human-induced climate change from the analysis the authors bring forward can result in nothing more than fallacious appeals to authority and popularity (of which the term 'consensus' is but a variation). Again, why would the consensus view as defined by the authors be exonerated from the very enquiry the authors initiate other than by an appeal to authority and popularity?

Besides, why would scientific peer-review within the sphere of the purported consensus-view on human- induced climate change be any guarantee for scientific quality, which the authors think is lacking in critical literature? Scientific majority views could afford quite proficient mechanisms to keep other views at bay precisely through peer-review, also known in this case as pal-review. The dominant epistemic community within climate science could well hinder freedom of research and publication, which could result in impeding certain research themes that are not regarded as in line with the dominating paradigm and thereby ignored for less than charitable reasons. (1)

Think of for instance the history of the theory of continental drift proposed by the meteorologist Alfred Wegener in 1912 and the ad hominum opposition levelled against him. (2) The Russian economist Nikolai Dimitrievich Kondratiev is best remembered for his theory of 'long waves' or 70-year cycles in which economies reflect the rise and fall of dominant technologies. Less well known is his prediction of the inevitable superiority of capitalism over Marxist planning. Correct perhaps, but a dangerous conclusion to reach and publish in Stalin's Russia and one which saw Kondratieff executed. His misfortune serves as a stark reminder of the power of dominant paradigms (ideologies) to resist change.

The suggestion here is not that the alleged consensus view on human-induced climate change is wrong and other views are correct. It simply poses the problem of peer-review and its quality safeguard. The authors, again, make no attempt to support

their asymmetric assumption: what seems to be wrong with those who criticise the professed consensus view on human-induced climate change is assumed to be right in the consensus discourse.

A final note here is related to the purported well-established scientific suppositions on climate change. This is an odd position to take (to say the least) from the perspective of the history and philosophy of science. One can be entirely indifferent to this subject to nevertheless be completely astonished by such a view. Chemistry is one of the oldest scientific fields in the history of science, and chemists have seen many theories come and go during centuries of research. How can a young field such as climate science be so sure of itself, as the authors in their paper seem to be, other than to be totally ignorant of the history and philosophy of science?

Discussion and conclusion

With the presence of multiple kinds of asymmetry as highlighted above, this paper essentially is unpublishable. Why would any reader be persuaded by the claims made in the paper other than being forced to accept fallacious arguments from popularity (consensus), authority and some examples of supposed failures of those who criticise the alleged consensus view on human-induced climate change, whereas the consensus view is ex cathedra exempt form any kind of agnotological scrutiny? Inductively, such an argument simply fails and is an affront to scientific logic.

Of course, objections can be raised here. It might be argued, for instance, that not every detail can be discussed in one manuscript on human-induced climate change. Put differently, the consensus view as defined by the authors cannot be discussed and defended in depth in just one paper. That is obviously the case, but if that is so (and I do not doubt it) then the whole exercise is vacuous.

In terms of education I will definitely use this manuscript in my philosophy of science classes, whether published or not, but not in the way the authors might have envisioned it. It can only be used as an example of how some scientists maltreat very elementary

aspects of understanding and doing science. It shows that universities should require far more of their students with respect to arguments, reasoning (logic), and evidence. This paper fails utterly on all three counts.

References

(1) Stenmark, M. 2004. How to Relate Science and Religion. A Multidimensional Model. Wm. B. Eerdmans Publishing Co., Cambridge. The term ‘religion’ is used here in the broadest sense of ‘worldviews’.

(2) See e.g. Lightman, A., Gingerich, O. 1992. When Do Anomalies Begin? Science 255(5045): 690 – 695.

Interactive comment on Earth Syst. Dynam. Discuss., 4, 451, 2013.