

GOOD SCIENTIFIC PRACTICE AND THE LOMBORG AFFAIR IN DENMARK

In the US, GB, Germany and Denmark disciplinary bodies have been established to judge allegation of scientific misconduct, using rules for Good Scientific Practice (1) as a measure.

After 20 years of experience we have learned, however, that many allegations are not lodged from serious doubts about scientific dishonesty, but because of personal animosity. In such cases the rules of procedures of the disciplinary bodies to judge allegations were insufficient to ensure careful handling of the complaints. For example the "Office of Research Integrity" (ORI) in the US made in 1994 a serious mistake by finding the collaborator Imansihi-Kari of the Nobel laureate David Baltimore guilty of scientific misconduct. The ORI subsequently improved its rules and Imansihi-Kari was exonerated in 1996.

The Danish Committee of Scientific Dishonesty (DCSD) seems to have served rather well over the last ten years, but its rules of procedures are rather primitive, if compared to the ORI's. It has no provision for example for appeal. DCSD caused world wide sensation with its verdict (8 January 2002) on Bjorn Lomborg, a political scientist and statistician, who was considered to have violated rules for Good Scientific Practice with his book, "The Skeptical Environmentalist". (2)

The Lomborg affair.

The book was published early 2001 with the sub title "measuring the real state of the world". It is a heavy attack on the view that mankind is heading for a catastrophe through exhaustion of natural resources, environmental pollution and climate change. Lomborg labeled the popular view of environmental collapse as the 'Litany'. He did not deny there are environmental problems to be solved, but rather challenged the view we are heading for an Apocalypse. His book made a plea for a review of our priorities in making investments to address the range of environmental problems. In doing so he outraged the establishment of environmentalists. It resulted in a world wide debate whether Lomborg had used the statistical data of official organizations, such as UN, WWF, World Bank, properly and whether he had cited the scientific literature correctly. Hundreds of pages of protest were answered by Lomborg with a similar volume. He admitted mistakes in a few incidental cases but stuck to his main points in the treatise as a whole. The opponents of Lomborg were not satisfied and a number of them lodged a complaint of scientific dishonesty with DCSD.

The judgment of DCSD

The complaint comprised: "fabrication of data, selective citation, deliberate misuse of statistical methods, distorted interpretation of conclusions, plagiarism, deliberate misinterpretation of others results".

The report of DCSD (3) ends with the judgment 'deviation from Good Scientific Practice.' But this is not made specific by reference to the discrete accusations. The report just reproduces in very general terms the objections raised by Lomborg's opponents in Scientific American, January 2001, and made no references to any of Lomborg's responses.

A further investigation (4)

To the Danish version of the DCSD report the extended discussion between Lomborg and its opponents is, however, attached as an annex, 'so that the reader can judge for himself the decision,' as it is stated in the main part.

Insofar as this discussion was reproduced by DCSD in the English language, we have accepted this invitation. Our result was, however, surprising.

To begin with, it was rather difficult to deduce from the rhetorical writings of Lomborg's opponents concrete accusations, as stated in the complaint mentioned above. 27 accusations could be inferred, of which only two, if further sustained, might cut ice. These two might indicate selective citation. (The book contains over 2900 annotations and references.) Three quarters of the accusations are so clearly false that it is difficult to imagine that DCSD had itself investigated the allegations on a scientific base.

Our conclusion is, DCSD has made itself instrumental to the opponents to censor a critic.

It must be noted, however, that in the previous discussion, Lomborg may not have been completely right and his opponents wrong. But the rhetorical tone of his opponents is remarkable, whereas Lomborg answers in a cool style. This makes the conclusion of the CDSD that Lomborg is not capable of a profound scientific discussion all the more surprising. The 'scandalous' behavior of Lomborg boils down to the fact that he, as a young literature researcher has dared to question the "jumping to conclusions" of esteemed environmental experts.

The continuation

From press releases of the Danish Research Agency (DRA) it is clear the DCSD decision raised turmoil in Denmark. The DRA established an evaluation committee to investigate the rules of procedures of DCSD. The outcome is expected half way through 2003.

The consequences for GSP ruling and the judgment of allegations.

Two lecturers on GSP in the US, Woodward and Goodstein (5) have pointed out that all too elaborate a ruling on GSP may be detrimental to the progress of science. This danger seems now to be proven by the Lomborg affair. In this case an established group of scientists have used a disciplinary body to silence an unknown new comer in the field. Questions that arise now are (a) should the rules for GSP be made more precise or just be limited, (b) should the rules of procedures be made more strict, and (c) from the practical point of view, would it be preferred, because scientific misconduct is a rather rare phenomenon, not to have accusations of misconduct judged by disciplinary bodies at all?

There is much to say for the last strategy, from the viewpoint of the social structure of today's science. The intensive communication among scientists brings misconduct such as fabrication of data, misleading interpretation of statistical data, scientific plagiarism, quickly to light and progress of sciences is not, or hardly hampered.

On the other hand, however, we can observe a certain moral need to bring deeds of scientific misconduct to be judged by disciplinary bodies.

If the scientific community really wants such a disciplinary body, than it should be clear that with investigation of accusations and reporting on judgments, as much care should be taken as we are used to in scientific research itself. Furthermore, judgment should restrict it self to lapses which are measurably, such as fabrication of data, mishandling of statistics, scientific plagiarism, and the judgment should not be mixed with subjective arguments, like 'the accused is not capable of a scientific discussion' or 'he has doubted esteemed scientists'.

Maintenance of standards in scientific discussion

Today's scientists seldom work on their own. They are bound together in groups in which professional social control is performed, e.g., in seminars and by criticizing each others papers before publication. In many cases of established scientific misconduct of individual scientists, the cause can be boiled down to insufficient professional social control. This has been recognized very well in Germany. The recommendations for Good Scientific Practice of the Deutsche Forschungsgemeinschaft (see 1) put much emphasis on the duty of boards of managements of scientific institutions to ensure that the instruments for social control are used in a proper way. This is in fact maintenance of Good Managerial Practice.

Of course this social control should not lead to censorship or despotism of so called 'established' scientists. The German recommendations provide that young and 'obstinate' researchers have the opportunity to protest if they feel limited in their freedom of research or speech.

Good Scientific Practice and Scientific Misconduct

The two notions are not exactly each others opposite. Not every violation of good scientific practice is scientific misconduct. The two differ also by cause and motivation. Scientific misconduct is dishonesty through an intent to deceive, e.g., by fabrication of data, or insufficient citation of work of others which is used for further research. Bad practice, e.g., careless experimentation, or incomplete citation is not

necessarily a deliberate intent to deceive, but usually due to scientific incompetence. The border between bad practice and misconduct is not always clear. The DCSD halted between two opinions; scientific misconduct was not mentioned, but dishonesty was.

According to his accusers Lomborg's dishonesty lay in his basing his conclusions on figures from the secondary, but official, literature, and gave this conclusions weight by one-sided citation from the primary literature. It must be mentioned again, it was not proven by DCSD but we cannot exclude the possibility that Lomborg as a literature researcher and political scientist, has missed good primary references. By one-sided citation he could have given his treatise more scientific weight than it deserves. The one-sidedness of DCSD's decision is comprised in a single sentence: he has not been able to convince his complainants. As if this has to do with bad practice. But more seriously, it is a reversal of our sense of justice: an accused is innocent as long as the opposite is not proven.

Nevertheless, the opponents of Lomborg could dispute his views. The Danish Ecological Council made an effort with another book (6). This contains some profound scientific contributions, but many continue with a rhetorical cannonade of how incompetent Lomborg is. And worse, the responses of Lomborg, which we have are either not quoted at all or are sometimes misquoted.

The cannonade is not unusual in the ecological circle. When James Watson returned to the US (MIT) from Cambridge (Eng) he was welcomed by Edward Wilson as 'the Caligula of biology'. (7) The problem in this circle is that a different view from a different discipline is not appreciated. The political scientist's doom was sealed, like that of the molecular biologist 45 years before.

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1. A.Rorsch. "Good Scientific Practice, a compilation of views from the US and Germany". www.natutech.nl

2 Bjorn Lomborg, "The Skeptical Environmentalist" (Cambridge University Press 2001)

3 "Decision regarding complaints against Bjorn Lomborg" www.forsk.dk/uvvu

4 A.Rorsch, D. Thoenes, E.H. Houwink, M.R.J. Hofstede, J.Hanekamp, A.J.P. de Lange. "A critical consideration of the verdict of the Danish Committee on Scientific Dishonest on the book by Bjorn Lomborg 'The Skeptical Environmentalist'" Submitted to the Danish Ministry of Science, Technology and Innovation (april 7, 2003)

5. J. Woodward and D. Goodstein. "Conduct, Misconducts and the Structure of Science". American Scientist, September 1996, p. 479-490

6 "Skeptical Question, sustainable answers." The Danish Ecological Council (2002)

7 "50 years of DNA" .Helen Saibil. Book review: "Watson and DNA: Making a scientific revolution", New Scientists 15 March 2003, page 63