

Probity issues and conflicts of interest in EMF research and review

by Mike O'Carroll, updated 28-1-07, 11-2-07, 20-3-07, June 07, 5-11-07 and July 08.

Public trust and confidence in official information has been an issue in the UK for some years, not least in scientific advice. For example the House of Commons Committee on Science and Technology Seventh Report of 2005/6 notes the “*backdrop of widespread concern over a perceived loss of public confidence in the system of scientific advice supporting Government policy making*” in the wake of the BSE affair and the ensuing Phillips Report, and describes subsequent government changes in structure, guidance and review of its systems. In this period of change the relevant UK advisory body on EMF, the NRPB, has been subsumed in the HPA.

In addition to the general issue of public confidence, there are specific published concerns about advice on ELF-EMF. For example Hardell et al, in the American Journal of Industrial Medicine (AJIM 2006), report undeclared consultancies, conspiracy to arrange friendly peer review, and conflicting interests, involving key advisors to NRPB, while Microwave News of November 2006, reports conflict of interest at the highest level in WHO EMF advice. In each of those cases there have been balancing responses, though the issues remain.

Other published examples are given below. The purpose of this note is simply to acknowledge that such public concerns exist and are in the public domain, and even in the peer-reviewed literature. It is not to take sides on any specific dispute or allegation.

Hardell et al specifically implicate the very long-term chairman of NRPB's Advisory Group on Non-Ionising Radiation (AGNIR), albeit in connection with chemicals rather than EMF, with detailed documentary verification. Not only were large undeclared consultancies reported, but also conspiracy to arrange refereeing. Hardell et al say the chairman “*these articles reveal that [an industry collaborator and the AGNIR chairman] agreed that any article written by [the AGNIR chairman] would be “peer reviewed” by [his] closest colleague and by ... medical advisers of two chemical companies*”. Further Hardell et al say “*The £15,000 fee for the review was paid for by [leading producers of the chemical under review] and “when [he] was finishing the review he was also separately receiving consultancy funding from [another leading producer of the chemical], and further, the funding was undeclared.*

Although that episode concerned a chemical carcinogen, the concern remains about the practice of secret conflict of interest among the leading UK EMF advisor and his close collaborators. Hardell et al also describe malpractice in the field of EMF relevant to telecommunications, which involves many of the same people in UK and international advisory groups as does ELF-EMF. Indeed the AGNIR covers both types of EMF.

The paper provoked a number of responses in AJIM, including a rebuttal from EIE and letters from professors from Sweden, USA and the UK, with *ad hominem* defences of the AGNIR chairman and counter-criticism of Hardell et al. The Journal editor apologised to Hardell for having omitted his own properly submitted declaration of interest.

The article in Microwave News (MWN) also implicates the long-term Head of the EMF Project at WHO, Mike Repacholi, who has been the architect of key draft reports in 2006 and who retired in the summer and almost immediately used the WHO draft reports in legal testimony for commercial clients. The article says his testimony “*has been criticized for citing, and at times misrepresenting, as-yet unreleased WHO reports for the benefit of his corporate clients*”.

Because of his unique influence, Repacholi has been able to shape key WHO reports to the advantage of his immediate future corporate clients. Beyond that, he has been able to use unconfirmed draft reports with controversial parts which have not been approved by his colleagues, let alone confirmed. MWN says “*Repacholi has misrepresented the group’s conclusions, according to Chris Portier, who chaired the expert panel. ‘The para-phrasing sometimes has gone a bit far and may be misleading,’ Portier told Microwave News*”. Portier was Co-ordinator of EMF Hazard Evaluation for the influential NIEHS review in 1999, and as chairman of the WHO expert panel is respected in the field.

MWN gives examples cited by Portier. “[Repacholi] *states that the [expert] panel concluded that ‘The epidemiological evidence cannot be used as a basis for standards (exposure limits).’ ‘Such a statement is absurd,’ said Portier, ‘Since they obviously can be used’. Also according to Repacholi’s report: ‘The task group recognized that the ICNIRP (1998) guidelines provide adequate protection for all established health effects.’ This an ‘overstatement,’ Portier said, ‘As I recall our recommendation it was that these guidelines were protective for acute effects; we said nothing about all effects in this recommendation’.*”

It has been WHO practice to invite industry representatives to expert panels as “observers”. However, stakeholders have witnessed their full and leading participation in the proceedings, without any restriction as observers. MWN says: “*The way the EHC review was written and edited is itself controversial. Repacholi invited eight observers to attend the meeting: All eight were from the electric utility industry.*”

MWN news published a response of 15 November 2006 from Dr Repacholi in which he confirmed acting for a commercial client but insisted this was legitimate after his retirement. He further defended his use of unconfirmed drafts and accused MW News of hypocrisy, innuendo and misrepresentation. MW News published a further response 17 November 2006 claiming Repacholi did not challenge either Chris Portier’s claim that Repacholi misrepresented the conclusions of the WHO expert panel or the claim that up to half the WHO EMF funding came from industry. MW News goes on with more details of monetary dealings and of selective use of evidence.

Another peer-reviewed paper this year: Don Maisch, “Conflict of Interest & Bias in Health Advisory Committees: A case study of the WHO’s Electro Magnetic Frequency (EMF) Task Group”, *J.Aust.Coll.Nutr.&Env.Med.Vol.25 No.1 (April 2006)pages 15-17*, describes similar concerns with excessive representation of financially interested industry in expert advisory groups. This paper also observes strong interaction between the WHO International EMF Project and the International Commission on Non-Ionizing Radiation Protection (ICNIRP) and says “... *half of the official members of the WHO task group are also members of ICNIRP*”. The paper claims “*industry influence [is] endemic in the decision making process*” and “*such a blatant disregard for the fundamental principles of credible science as well as WHO’s mission on protecting world health speaks of a desperation to bury independent advice at all costs, even if that cost is the integrity of WHO*”.

The strong interconnections of the inner group of international advisers may be a situation like that in global warming. There the authority of the IPCC promoted a new and relatively untested piece of research in the form of the “hockey-stick” graph (of global temperature against time). Technical criticism of the methodology and of the result, in a peer-reviewed paper, was contested and suppressed, and original data with-held, until the US Congress intervened. Both the prestigious NAS review and a top-level statistical review fully upheld the criticisms. The statistical review (Wegman Report) also observed a phenomenon of social networking among the inner core of

researchers and reviewers, with statistical measures of unusually strong joint authorship and refereeing each others' papers, which could have led to the resistance to accepting valid criticism.

Blank and Goodman 2006 complain, of a BEMS supplement, that "*The supplement was designed by WHO to promote the WHO electromagnetic fields (EMF) program, and it gave itself a good 'report card' in the introduction.*" ... (and later on) "*Publication of a paper with our imprimatur lends credibility to the WHO program, where a sincere interest in meaningful research into disease related mechanisms involving EMF is painfully absent. That last remark may appear unusually harsh, but how else can one describe the failure of the WHO symposium to mention the many research papers showing stimulation of DNA as in the stress response [e.g., Leszczinski et al., 2004], reports of DNA strand breaks ...*".

Carlo 2006 says, of studies in the related cell phones field, "*The industry strategy has been to fund low-risk studies that will assure a positive result – and then use it to convince the news media and the public that it is proof that cell phones are safe. Even though the actual science proved nothing of the sort.*" and goes on to give statistics showing a clear bias in industry-funded results. He cites 13 peer-reviewed papers with statistically significant findings for cell phones, with 207 positive and 0 negative significant tumor findings from independently funded studies, and 98 positive and 17 negative significant findings from industry-funded studies. While a single comparison such as that can only be indicative, wider comparison of results by funding source would bear further study and replication, which may exist for other scientific fields.

Huss et al (2007) reviewed the relation between source of funding and results for experimental studies. The OR for reporting at least one statistically significant result for studies funded exclusively by industry compared with studies funded by public agencies or charities was 0.11 (0.02, 0.78), itself statistically significant. Huss et al concluded "*The interpretation of results from studies of health effects of radiofrequency radiation should take sponsorship into account*". Although this study is about RF radiation, several of the references come from other fields (antidepressants, tobacco, passive smoking, biomedical research, clinical trials, pharmaceutical industry), supporting the generality of this phenomenon.

Added June 07: A new paper "Use of evidence in new recommendations" by Oxman et al (2007) states its lead finding "*Systematic reviews and concise summaries of findings are rarely used for developing recommendations*". A Reuters report says "*The medical journal's criticism of WHO could shock many in the global health community*" and quotes Lancet editor Dr. Richard Horton as saying "*This is a pretty seismic event. It undermines the very purpose of WHO.*"
< <http://omega.twoday.net/stories/3773480/>>

At the level of "guidelines for WHO guidelines", the paper doesn't mention EMF or precaution, but its findings are significant. The authors are sort-of internal, in their WHO roles, and the work is EC-funded. While the IARC review of EMFs was systematic in approach and assessment classification, it considered only a limited range of evidence and lacked a systematic method of aggregating the evidence it did consider.

Added November 07: A detailed analysis of funding bias appeared in Microwave News Vol. XXVI No. 4 of July 2006, examining 85 radiofrequency (RF) /microwave-genotox papers published since 1990. Of these, 43 found some type of biological effect and 42 did not. Yet 32 of the 35 studies that were paid for by the mobile phone industry and the U.S. Air Force show no effect. They make up more than 75% of all the negative studies. The article also shows publication bias by the journal Radiation Research and gives information about apparently undisclosed editors' interests. That

raises the interesting point about journals' provisions, or not, for declaring interests not only of authors but also and especially of editors. The full analysis can be seen at <http://www.microwavenews.com/RR.html>

The note about Radiation Research was picked up by the CSPI (Center for Science in the Public Interest) in its Integrity in Science Project. The fact that a major (900,000 subscribers) independent public-interest body should need to run such a project is a sign of the underlying widespread problem with probity in science.
<http://www.cspinet.org/integrity/watch/200608281.html>

From the CSIP web site "The Integrity in Science (ISS) Project combats corporate influence on science and science-based public policy. We scrutinize more than 200 science-based federal advisory committees for undisclosed conflicts of interest, monitor the media and scientific literature for failure to disclose, and encourage the adoption of strong disclosure policies. ISS publishes the weekly [Integrity in Science Watch e-Newsletter](#) and maintains an open database of public records of scientists' ties to industry."

Added July 2008:

The Interphone project is a 13-country set of epidemiology studies on tumours and mobile phone use. Some partial results have been published but the greater part, along with the overall assessment, is still awaited after almost three years. Microwave News surveys the scene of splits and acrimony between the scientists at <http://www.microwavenews.com/> (see 29 June 2008).

Hardell et al 2008 find methodological shortcomings in the Interphone studies under the auspice of IARC when compared with his own studies. These are set out in his Table 1. Table 2 shows the high response rates in the Hardell studies in contrast with low rates in the Interphone studies likely to obscure or diminish their results.

Often probity issues are on the "industry" side with concerns of financial interest, widespread across science, and with statistical indications of bias by funding source. It is perhaps perversely refreshing to find probity issues on the other side, this time in relation to mobile phones and the Rudiger-Lerchl dispute (see revolt news258 APPENDIX A; Schwarz et al 2008; Lerchl 2008; Rudiger 2008), albeit they are far from clear at this stage.

The distinguished British Medical Journal reports (BMJ 2008) the Rudiger-Lerchl saga reflected in correspondence in the International Archives of Occupational and Environmental Health (IAOEH) this year. BMJ's choice of heading for the report by Annette Tuffs was "*University calls for mobile phone research to be withdrawn after technician admits faking data*". Yet the report gives no confirmation that there was a confession. Indeed it reports claims that there was none. There appear to be interesting statistical grounds for challenging the validity of the original research, and faking has been famous in science, yet there also appear to be conflicts of interest among the accusers and unjust assertions by the university press officer. Watch this space!

Probity concerns about IARC and WHO have appeared prominently in connection with chemicals in the environment. As these notes focus on EMF, detail is omitted though the theme of conflict of interest and non-independence is clear from some of the titles (Lancet 2003; Sass 2005). It is notable when a Lancet editorial highlights concerns about "*undue influences, especially commercial ones*" and industry trying to "*slip in their unpublished data*" hidden behind confidentiality.

According to Sass 2005, the US General Accounting Office, after investigating the EPA, reported in 2001 (document number GAO-01-536) poor identification of conflicts of interest, inadequate assurance of independence and balance, and very limited public access to information regarding panellists. Sass also noted “*Issues of credibility and transparency during IARC chemical evaluations attracted international attention from scientists, public health professionals, and unions*”, citing seven critical articles in the peer-reviewed journal Int J Occup Environ Health. However, Sass goes on to suggest that IARC’s “new guidelines on disclosure and conflicts of interest” may serve as a template for others.

Gennaro & Tomatis (2005) identify 15 ways in which business interests bias epidemiology studies. It’s almost a guide for industry to cheating at epidemiology. They mention that one review on specific chemicals showed 60% of independent studies found the chemicals hazardous compared with only 14% of industry-sponsored studies.

The Bush regime in the US has been prominently criticised for political appointments to science advisory positions (Brumfiel 2004; Lancet 2002; Nature 2003). Is the shadow of Soviet Lysenkoism still with us?

The use and mis-use of so called “weight-of-evidence” (WOE) methods of evaluating scientific evidence can be important to public trust and confidence in official information. At the Beaulieu-Denny inquiry (and elsewhere) I felt developers were presenting the IARC approach as “the” weight-of-evidence” method, very aggressively as if it were a unique absolute approach and all others were somehow invalid. In fact there are many WOE approaches; for example the IPCC uses a very different approach for climate change. Not only are there many, but they all have their shortcomings, some quite serious. IARC’s approach is systematic and tries to define its terms, to its credit, yet it too is seriously limited, for example in the evidence it considers and in its failure to address the aggregation of disparate evidence. For an analysis of WOE methods and their shortcomings, see Weed 2005.

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