EXPLAINING AMBIGUOUS SCIENCE REQUIRES HIGH ETHICS AND LOW CONFLICT OF INTEREST

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Science blogger @ BRHP – *Between a Rock and a Hard Place*

WHO I AM… EDUCATION AND WORK

- Two doctorates and docentship in biochemistry
- Independent expert; actively advising and lecturing
- 22 years (1992-2013) at STUK
  - 2003-2007 as Head of Radiation Biology Laboratory
  - 2000-2013 as Research Professor
- Assistant Professor at Harvard Medical School, USA; 1997-1999
- Guangbiao Prof. at Zhejiang Univ., Hangzhou, China; 2006-2009
- Visiting Prof. at Swinburne Univ. Technology, Melbourne, Australia; 2012-2013

WHO I AM… EXPERT EXPERIENCE

- 20 years of experimental work on EMF and health
- Testified
  - In the Canadian Parliament's House of Commons' hearing in 2015
  - before Minister of Health and Family Welfare of India in 2014
  - In the US Senate Appropriations Committee hearing in 2009
- Member of 2011 IARC Working Group for classification of the carcinogenicity of cell phone radiation
- Advised e.g.: Parliament of Finland; National Academies, USA; World Health Organization; Bundesamt für Strahlenshutz, Germany; International Commission on Non-Ionizing Radiation Protection (ICNIRP); Swiss National Foundation; The Netherlands Organization for Health Research and Development;

Lobbying…

Quote from the LifeExtension Magazine August 2007
The Hidden Dangers of Cell Phone Radiation
George Carlo interviewed by Sue Kovach

"CELL PHONES REACH THE MARKET WITHOUT SAFETY TESTING

The cellular phone industry was born in the early 1980s, when communications technology that had been developed for the Department of Defense was put into commerce by companies focusing on profits. This group, with big ideas but limited resources, pressured government regulatory agencies - particularly the Food and Drug Administration (FDA) - to allow cell phones to be sold without pre-market testing. The rationale, known as the "low power exclusion," distinguished cell phones from dangerous microwave ovens based on the amount of power used to push the microwaves. At that time, the only health effect seen from microwaves involved high power strong enough to heat human tissue."

Safety limits and safety standards must be firmly based on science...

but someone needs to pay for execution of science

The problem of the research funding ”firewalls”

“Firewalls” - set to assure independence of the scientific research from the commercial interests

Current system of the “firewalls” does not work:

- the industry knows whom they are funding
- the scientists know who is funding them
- the “firewall” keeper is profiting from providing the “firewall” (administrating the industry’s money for the scientists)

This situation resembles the proverbial ‘*public secret*’ – everyone knows about it but no one publicly admits to knowing…

Scientific evidence for health risk is full of contradictions, unreplicated observations and ambivalent results that can be interpreted in ”diverse ways” – room for biased opinions

Conflict of Interest

money and no-money

From the blog by Nathan A. Schachtman, lawyer representing industry

…"*Conflict of interest in science is a very important issue, and it is a very big problem, because if uncontrolled, it can lead to biased, misleading and even false opinions about scientific evidence.*" *Dariusz Leszczynski, "Conflicting statements by the two experts of the Royal Society of Canada," (Nov. 1, 2013)*

This statement and the remainder of the blog post is an example of the current obsession and delusion over conflicts of interest (COIs). COIs do not lead to false opinions (assuming an opinion can be false); fraud, misrepresentation, errors in data collection and analyses, fallacies, and inferential mistakes are what lead to misleading and false statements in science. COIs may perhaps trigger greater scrutiny for error, but there is nothing in a COI disclosure, or lack of disclosure, that helps us ascertain the validity *vel non* of a study.

What is Conflict of Interest (CoI)

- Office of Research Integrity (ORI), USA
  - Conflicts of interest - has become synonymous with monetary or personal gain (e.g. money, career advancement)
  - Conflict of effort - demands from separate entities jeopardize the duties and responsibilities (e.g. consulting vs. research)
  - Conflict of conscience - having to maintain objectivity in the face of convictions which go against the grain of something one must act on or evaluate (e.g. friendship, own scientific convictions)

Potential consequences of CoI 1/2

- Office of Research Integrity (ORI), USA
  - Conflicts of interest increase the temptation to commit misconduct.
  - Conflicts of interest do not necessarily amount to research misconduct. If the potential gain is large, however, then principles that guide responsible conduct in research may be compromised.
  - Conflicts of interest increase the risk of unintentional bias.
  - Unintentional bias can be a more serious threat than deliberate misconduct, because even those who are biased would be unaware of the ways in which their actions were effected.

Potential consequences of CoI 2/2

- Peer-reviewed publications influencing policy development
- E.g. Forsyth et al. Conflicts of interest and critiques of the use of systematic reviews in policymaking: an analysis of opinion articles. in Systematic Reviews 2014, 3:122
  - It is important to consider whether an article has industry ties when evaluating the strength of the argument for or against the use of systematic reviews for policymaking
  - We found that journal conflict of interest disclosures are often inadequate, particularly for editorials, comments, letters, and perspectives and that these articles are being cited as evidence in the academic literature
  - Our results further suggest the need for more consistent and complete disclosure for all article types

The goal of the CoI policies

Central goal of conflict of interest policies is to protect the integrity of professional judgment and to preserve public trust rather than to remeditate bias or mistrust after it occurs

Quote modified from
Conflict of Interest in Medical Research, Education, and Practice
Institute of Medicine of the National Academies 2009

Sufficiency of the CoI disclosure

The disclosure of individual and institutional financial relationships is a critical but limited first step in the process of identifying and responding to conflict of interest

Quote modified from
Conflict of Interest in Medical Research, Education, and Practice
Institute of Medicine of the National Academies 2009

Why CoI disclosure might be insufficient

- Person with the conflict of interest will be making decisions
- What is the ”severity” of CoI
- How reliable will be decisions made by the person with the conflict of interest?
- How reliable are the past decisions of persons who left the advisory expert committee to work for the industry?

Specifics of the bioelectromagnetics

- Bioelectromagnetics is a narrow research area. Unavoidably, all science is done, evaluated and presented to the general public and decision-makers by a small group of "*influential players*".
- Large research consortia, appointed committees and self-appointed committees consist of the same "*influential players*". The same applies to the narrow field of "*influential*" peer-reviewers of new research projects and of articles published in peer-reviewed journals.

As if by default, all of the bioelectromagnetics' "*influential players*" claim in their disclosures to either have no CoI or, if they have it, they claim to be absolutely unaffected in their scientific decisions by their CoI.

Trustworthiness of the unchecked, self-made CoI

David Heath of the Center for Public Integrity, Washington, DC, wrote in December 2013 about Patricia Buffler, Dean of the School of Public Health at the University of California, Berkeley, CA, USA

- Buffler's own research found strong evidence suggesting that preschoolers should stay away from wet paint
- Yet, in the past three years, Buffler was paid more than $360,000 to work as an expert witness on behalf of companies that used to sell lead-based paint

Accountability in bioelectromagnetics committees

- Commonly, the disclosures of CoI, even in very influential committees, are not standardized and seemingly not checked for their accuracy
- The CoI disclosures rely entirely on the willingness of the discloser to make the full disclosure
- There seems to be no accountability for any false, erroneous or incomplete disclosures

Examples of the scientific problems in the bioelectromagnetics committees

- Selectiveness in collecting/admissing evidence
  - All evidence listed but not considered in practice (ICNIRP)
  - Selection of predominantly supportive evidence (BioInitiative)
- Single scientist making judgement/writing opinion paper
  - BioInitiative
  - SCENIHR
- Committees do not want to talk to each other
  - Call for the round-table to resolve differences was flatly rejected by ICNIRP, BioInitiative and MMF/GSMA

Potential impact of the disclosed CoI

- Even in a situation when disclosure of the CoI is done in full, what impact the disclosed CoI has on the decisions made by the discloser?
- Even after the full disclosure of the CoI, person having the CoI might be making decisions – how severe is the CoI?
- Are these decisions influenced, or not influenced, by the CoI, also when it was disclosed?

Are there irreplaceable experts ?

As the society at large and as the scientific community, should we be solely dependent on the ethics and the consciousness of persons having Conflict of Interest, or should we intervene and exclude persons with significant CoI from the advisory and decision-making role?

In dealings with experts, as a society and as scientists, should we exercise a full trust or a limited trust, and make sure that the ”*skeletons*” do not remain hidden?

CONCLUSIONS 1/2

- Lots of mistrust has accumulated over the years
- Harmonization attempts do not work
- Safety policies are being de-harmonized through political influencers
- Current CoI and ”firewalls” policies do not work
- How to reverse the mis-trust situation to trusted one?

CONCLUSIONS 2/2

- There is broad range of Conflicts of Interest
  - Financial gains
  - Career advancement
- Currently disclosures account mainly for pecuniary aspects
- Overlooked Conflicts of Interest
  - Publication of influential peer-reviewed opinion/editorial-articles
  - Human friendship's impact on expressed scientific opinions – unaccounted bias
- Disclosures are often insufficient and unchecked
- Complaints about insufficient CoI are often trivialized as "*conspiracy theories*"
- How reliable are expert opinions is determined by CoI and ethics of experts