



An Area for the EHS – Forest Saoû France 17 09 2011

Radiation protection in conflict with science

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There is no technology like wireless communication that made its way so fast and so extensive into people's daily life. Within only 20 years the number of mobile phone users increased worldwide from about zero to 4.6 billions. The youngest users are hardly older than three years of age. From the scientific view this development causes a serious problem: The state of knowledge on the biological effects of radiofrequency electromagnetic fields (RF radiation) with low intensity is still rather poor. The currently valid exposure limits are based on the assumption that they reliably protect the human organism, because RF radiation is ineffective as long as it does not raise the temperature in the tissue. This assumption, however, is contrary to the results of an increasing number of studies which altogether show that biological effects occur already far below these exposure limits. Yet, these results are neither considered by the wireless communication industry nor by the government, which in anyway is responsible for the protection of the people against health risks. Thus, we can say that today the most extensive multiracial biophysical experiment of mankind is under way with an uncertain outcome.

Exposure limits

Exposure limits indicate the maximum values allowed for harmful substances, e.g. in drinking water and air or for noise levels in residential areas, which must not be exceeded in order to protect people. Exposure limits for RF radiation guarantee that the energy absorption in the human body or in parts of it, especially in the head, is so low that health damages through generation of heat are excluded. Exposure limits are laid down according to the actual state of scientific research. Whoever controls this state of research takes over the responsibility for the protection of the people. Already before World War II the necessity of exposure limits for RF radiation had been discussed. Since the outbreak war, when the technical use especially for military purposes became increasingly relevant, health risks that had been pointed to in previous observations were ignored. After the War military and industry, which in the meantime highly esteemed the technical potential of RF radiation, both for decades took care that this view maintained. They were supported by politics.

In Europe, an important milestone to assure economic interests with fixing exposure limits was the establishment of the International Commission on Non-Ionizing Radiation Protection (ICNIRP) in 1992. It was founded at Dr. Mike Repacholi's instigation, at that time head of the so-called EMF Project of the WHO. ICNIRP, a private association, received with the help of Repacholi official recognition from the WHO, the EU, and several member states such as France and Germany. In 2006 Repacholi was hired as a consultant by the American power utilities. In line with the industry's position ICNIRP took over the view that there are no other effects of RF radiation but thermal ones. As safety limits it proposed for 900 MHz fields 4.5 W/m^2 , for 1800 MHz fields 9.0 W/m^2 , and for 2100 MHz fields 10.0 W/m^2 . These proposals [1], which only exclude short-term and direct health damages caused by RF radiation but do not consider long-term effects such as the development of cancer and neurodegenerative disorders have been accepted by the WHO and the EU in 1998, and application was recommended to their member states. See [2] for detailed information.

REFLEX study

For the wireless communication industry the REFLEX study was quite a nuisance because its results speak against the safety of the current exposure limits. REFLEX was carried out between 2000 and 2004 by 12 research teams from seven European countries, mainly funded by the EU Commission and organized and coordinated by me. Results obtained at the Medical University of Vienna showed that low-frequency as well as RF electromagnetic fields own a gene-damaging potential. Genotoxic effects such as DNA strand breaks were observed in isolated human fibroblast exposed to UMTS radiation already at a special absorption rate (SAR) of 0.05 W/kg , thus only one-fortieth of the currently valid exposure limit. Under GSM radiation and otherwise identical experimental conditions a SAR value of 0.3 W/kg , that is one-sixth of the currently valid exposure limit, was necessary to significantly increase the rate of DNA strand breaks. Prof. Alexander Lerchl, at that time member and since 2009 head of the Committee on Non-ionizing Radiation of the German Commission on Radiological Protection (SSK) of the Federal Office for Radiation Protection (BfS) and, thus, responsible for the protection of the people in Germany came to the dramatic conclusion: *Should the research results from Vienna be confirmed this might be the beginning of the end of wireless communication.* If on his own or encouraged by the wireless communication industry, he decided to act – and he was not shy in using unusual means. See [3] for detailed information.

A smear campaign against the REFLEX study

It is well-known and has been proven many times, that publications with results such as the ones from the REFLEX study are met with scepticism and disapproval by the wireless communication industry and its helpers in science. My idea to make the REFLEX results the basis for a new grant application to the EU Commission, in which RF radiation was to be investigated not in test tubes but in living humans, must have indeed provoked resistance. Lerchl decided – as I assume in accordance with his clients – to take action against the publications from Vienna and their authors in his very own fashion. Statistical calculations conspicuous to him were an opportunity to claim that the REFLEX results are faked. He did find the necessary support for his campaign in Prof. Wolfgang Schütz, rector of the Medical University of Vienna. The main goal of their joint activities was to enforce the retraction of two publications from the scientific literature, which reported on the gene-damaging effects of RF radiation. The moral execution of the authors of the alarming results was approvingly accepted. The shameless attempts were thwarted by the fact that two committees for ethics in science, which were ordered to investigate the case, despite making any effort did not succeed to prove the alleged fake. However, the results, although still available in the scientific literature, are irreparably damaged according to the wording: *Something always sticks.* That, in the meantime, they have been proven several times is obviously ignored – also by the International Agency for Research on Cancer (IARC) in Lyon [4,5].

The International Agency for Research on Cancer

In the end of May 2011, the International Agency for Research on Cancer (IARC) of the WHO in Lyon classified RF electromagnetic fields, to which wireless communication radiation belongs, as “possibly carcinogenic”. The decision is based on a vote by 30 scientists from 14 countries that had been invited by IARC to Lyon between May 24 and 31, 2011, to discuss the cancer risk of humans exposed to RF radiation. The recent results of epidemiological studies, especially parts of the IARC-coordinated INTERPHONE study and studies by Lennart Hardell from the Swedish university at Orebro had been decisive for the “possibly carcinogenic” classification. These studies observed an increased risk for glioma (malignant brain tumours) and acoustic neuroma (benign tumours of the hearing nerve) after long-term (>10 years) and intensive use of mobile phones. Results from animal experiments were at least considered supportive of a carcinogenic effect of radiofrequency radiation. Results from basic research with proven changes in structure and functions of genes after the exposure of isolated human and animal cells, but also from exposed animals itself, that would have lend weight to the epidemiological observations were, however, not at all considered. Had these results been taken into account according to their significance the classification would not have been “possibly carcinogenic” but rather “probably carcinogenic”. Obviously, the IARC wanted to spare such a step, although asked for by a few participants, to the wireless communication-friendly governments that finance WHO and to the powerful wireless communication industry, too. After all, politics and industry still jointly believe in the harmlessness of wireless communication radiation. Despite the recent warning by IARC common interests will probably prevail for quite a while. To defend their interests further they certainly will not be reluctant in their choice of means, just as Prof. Lerchl’s defamation of the REFLEX study showed.

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History teaches that science is often misused by government and industry for selfish purposes, and that more than enough scientists are willing to let themselves misuse in return for professional and/or material benefits. The Pandora Foundation was established to point at the serious harm brought by this attitude on the European citizens and to counteract with information and clarification. The deficiencies, that need to be eliminated, arise mostly from the incorrect information of the public about the true state of knowledge. This misguidance is the task of compliant scientists who are first upgraded to “experts” and then posted in national and international boards in charge of providing advice to the decision-making governments. In this position it is their responsibility to constantly review the scientific progress made in the various areas of research. While they routinely discriminate results from critical scientists, they are in no way shy of using their own results, quite often produced by industry- and government-funded pseudo-research, as the guiding principles for their actions. This kind of dealing with science is contrary to the system of values European nations feel obliged to. The Pandora Foundation will prevent that decision-makers in politics and industry who betray ethic principles by misusing science at the cost of the societies get away with impunity.

Prof. Lennart Hardells grant application to the Pandora Foundation

As one of the participants, Lennart Hardell from the Department of Oncology at the University Hospital in Orebro, Sweden, contributed with his epidemiologic research data essentially to the IARC classification. Because of the short period of time that elapsed from the introduction of the new communication technology till the completion of his studies, these data are still burdened with a high uncertainty. Hardell’s grant application shows that he in the meantime has available data from Swedish men and women diagnosed with a brain tumour between 2007 and 2009 [6]. With a high probability the evaluation of these data will show that the risk of brain tumours increases with the duration of mobile phone use. This comes very near to a final prove that RF radiation is a carcinogenic risk.

For months now, Hardell tried to raise the funds necessary for the statistical evaluation of his data. As IARC's classification is already now quite a nuisance to for industry, there is obviously no interest to further substantiate the voiced suspicion of a brain tumour risk caused by RF radiation.

Due to its economic impact the classification in the next higher category “probably carcinogenic” should obviously be avoided by all means. This is the reason why a support of Hardell's research work is refused by government and industry. I am aware that I should not ask you to financially support the research project as you urgently need the means yourselves to be able to finally survive in a hostile environment. What is needed, however, is your moral support. Continue your fight as long as necessary, until you are heard by those who are responsible that the truth in this area of research is suppressed. .

Electromagnetic hypersensitivity (EHS)

It is a real tragedy that thousands of people in Europe, who suffer from effects of various forms of electromagnetic fields (EMF), are considered to be mentally ill only because science is not able yet to understand the basic mechanisms leading to EHS. Medical doctors, who are consulted by more and more people with symptoms which do not fit to any known disease, feel as helpless as their patients do, who suffer in a way that their hardship cannot be ignored anymore. This should be reason enough for our societies to take care that these people can lead a life as normal as possible. For decades, politics and industry dominated EMF-research aimed at protecting their economic interests. Thus, our current knowledge about the risks for men and nature through electromagnetic fields is very poor compared to other environmental hazards. These shortcomings in science resulting from the fact that research is not concentrating on human needs, but economic profits are the main reason for your problems. Nescience is the cause why people suffering from EHS is done injustice, and nobody is made responsible for this. As long as industry and politics succeed in defending their principle that there are no relevant biological effects below the valid exposure limits the legal situation of the EHS affected will probably not change. What we need is independent research. that is funded by private persons in case the governments refuse to do so. The current situation, in which the beneficiaries of this technology make huge profits, while the burden is shouldered an unfortunate minority, is absolutely intolerable.

Conclusion

Looking back at my experience with the wireless communication industry, politics, and media, while organizing and coordinating the REFLEX project, I can state today that under the current circumstances the truth about the biological effects of RF radiation is heavily suppressed with all means – including criminal ones. As it is a rule in democracies that the law, rights, and regulations stand above power and their owners and as this rule in our case has been severely violated at the disadvantage of the people, there is nothing more important in a democratic society than to insist on its compliance.

This is what I want to encourage you to do.

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