Radiation Protection in Conflict with Science

A Documentation

Franz Adlkofer and Karl Richter

Effects of Wireless Communication Technologies

A Brochure Series by the
Competence Initiative for the Protection
of Humanity, Environment and Democracy e.V.

Brochure 5

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Title image: view of the Medical University of Vienna at which the controversy about the REFLEX findings began.
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Foreword

The German Council of Science and Humanities Report on the Federal Office for Radiation Protection (BfS) from 2006 states that the appointment policy of this agency contradicts its founding mandate as the majority of the staff is composed of officials and employees without sufficient scientific background. It seems obvious that this lack of professional competence poses risks to the protection of public health. However, as an alleged solution to this dilemma, leading positions are placed in the hands of scientists who openly or covertly work together with the industry, it turns into a problem society must not tolerate.

Topics of this documentation

This documentation exposes the consequences and mismanagement resulting from such appointments to positions advising and establishing health and environmental policies. Showcasing Prof. Alexander Lerchl from the private Jacobs University Bremen, who has been entrusted with the responsibility to chair the Committee on Nonionizing Radiation of the German Commission on Radiological Protection (SSK) for his second term, we show that such an arrangement not only causes damage to the protection of public health and the environment, but also to human rights and the democratic culture in Germany.

Prof. Lerchl, who quickly has forgotten about his own critical findings in years past in favor of his wireless career, uses his status as a senior radiation protection official today to serve the interests of industry—and it would seem—the interests of the government. In this position, he obviously sees it as his mission to advise on health and environmental protection policies but also to inform policymakers and society generally that wireless technologies are safe, according to his dogma. That which contradicts his dogma is ignored, denied, or fought—with means and methods and with a degree of zeal that especially for a scientist in his position must be considered as strange.

Part I of this documentation illustrates Prof. Lerchl's passionate efforts to denigrate the authors and invalidate any of their scientific findings that are alarming or contrary to his position that wireless technologies are safe. **Part II** discusses his scientific contributions to the German Mobile Telecommunication Research Programme (DMF) in which he did not refrain from manipulation to support his untenable assertions. **Part III** provides examples as to how single-mindedly he put the conveniently trimmed research findings into political practice and made them the gold standard of policy advisement and public education. **Part IV** shows how the distortions of the truth are perpetuated, also in our common culture.

Lobbyism in radiation protection

In order to secure their product sales with a reputation of safety, the wireless industry has for decades engaged the services of members of the scientific community who are willing to represent their interests. Through common channels of influencing political decision-making, these scientists are then upgraded to "expert" status and placed in national and international committees, which are mostly responsible for advising government agencies and educating the public. As a return service for the professional and private benefits granted, these "experts" promise their contractees to safeguard the interpretation of the latest body of research—at the cost of their government mandate to protect human health and the environment from harm.

There has been the occassional exposure of scientists who are lobbyist for the wireless industry, confirming the reality described in this documentation. Only recently there was an unexpected outing of Prof. Anders Albohm from the world famous Karolinska Institute in Stockholm, Sweden, who as a chair of international committees has significantly influenced the risk assessment agenda and setting of exposure limits for over a decade. As far as significance goes, perhaps his case cannot be compared to that of Prof. Lerchl; however, one as an epidemiologist of international standing and the other according to his more modest abilities limited to Germany, demonstrate in an almost exemplary manner how the protection of public health and the environment are undermined—apparently sometimes even with government help.

Absurdity and reason in the history of science and their effects

There is nothing new about scientists allowing themselves to be exploited by the needs of political and industrial power. Neither is it new

that they take reason-based health politics to the extremes, bordering on the absurd, and help cover up human rights violations. A questionable alliance between political and corporate powers may be successful for decades in delaying the required initiatives to protect humanity and nature with the help of such "experts"—including all the painful consequences and effects. Yet neither human rights nor the course of scientific knowledge can be suppressed forever. In this regard, the authors of this documentation share the confidence of the American biophysicist and lawyer Andrew Marino, who discusses perspectives of environmental sciences in his book *Going Somewhere*, published in 2010. His observations of absurd actions on behalf of financial and political powers add further facets. Overlooking half a century of research, Marino summarizes his experience with dubious "experts" researching biological effects of electromagnetic fields as follows:

Injustice, ignorance, and greed are ultimately fatal to the experts themselves, not to environmental science. But don't make the mistake of supposing that the unjust and foolish expert, even when he is caught in the act, is immediately destroyed by what makes him bad. More frequently he can continue to act that way, and even be acclaimed and respected in many quarters for doing so. The mistaken experts kill other people but they themselves often live for a long time. In the end, however, they corrupt themselves. The environmental science of EMFs won't be destroyed by the mistaken experts. I think it will fare well. (p. 442)

Franz Adlkofer and Karl Richter

Part I

A campaign to destroy scientific findings

Franz Adlkofer and Karl Richter

1. REFLEX results are in the way of a policy that sends out all-clear signals

The story has its origin in the Clinical Division of Occupational Medicine at the Medical University of Vienna (MUV), where until October 2007 Prof. Hugo W. Rüdiger had been director. Within the framework of the European REFLEX study - coordinated by Prof. Franz Adlkofer - Prof. Rüdiger had observed that extremely low- and radio-frequency electromagnetic fields both have the potential to be genotoxic. In a follow-up study, his team had shown that the genotoxic potential for a large part depends on the modulation of the carrier frequency. Thus, UMTS radiation (3rd generation of mobile communication) was found to be about 10 times more effective in producing DNA strand breaks in isolated human cells compared to GSM radiation (2nd generation). It is well known and well documented that publications with such results are met with great scepticism and unease by the mobile communication industry and their scientific supporters. In our case the disapproval might also have been strong because the obtained results contradict the ones from the German Mobile Communication Research Programme (DMF). Prof. Adlkofer's plan to make them the basis for a new research proposal to be submitted to the EU Commission that would investigate radiation effects in live humans instead of test tubes might have indeed provoked resistance.

Prof. Alexander Lerchl - at that time member and since 2009 head of the Committee for Non-ionizing Radiation of the German Commission on Radiological Protection (SSK) of the Federal Office for Radiation Protection (BfS) - responsible for the protection of public health came to a dramatic prognosis: if the Vienna research results should turn out to be true, this would be the beginning of the end of mobile communication. If on his own or encouraged by the mobile communication industry, Prof. Lerchl decided to act. But rather than reviewing the results and, in case of confirmation, responding with precautionary measures he decided to take action against the publications and the authors. Seemingly striking statistical calculations in the description of the results were to give reason for a suspicion of fraud and a corresponding campaign was to quickly publicize the hypothesis of fraud. With Prof. Wolfgang Schütz, the rector of the MUV, Prof. Lerchl did find the most serious support. The main goal of their joint activities was the retraction of the publications. And the moral execution of the authors was approvingly put up with.

Two documentations published by the Pandora Foundation for Independent Research describe the campaign in more detail[1]. In this brochure the investigations and the outcome are described in a shorter and more summarizing way.

2. Studies on genotoxic effects of mobile phone radiation from the Clinical Division of Occupational Medicine are suspected of fraud

In mid-2007 Prof. Wolfgang Schütz, the MUV rector, received a letter in which the allegation of data fabrication in a scientific publication from MUV's Clinical Division of Occupational Medicine was raised. The author was Prof. Alexander Lerchl from the private Jacobs University in Bremen. The allegation referred to *Non-thermal DNA breakage by mobile phone radiation (1800 MHz) in human fibroblasts and transformed DFSH-R17 rat granulosa cells in vitro* by E. Diem, C. Schwarz, F. Adlkofer, O. Jahn, and H.W. Rüdiger published in the science journal *Mutation Research*[2]. The results described in this publication had been obtained as part of the REFLEX study[3] between 2000 and 2004. They document that mobile phone radiation also below the currently valid exposure limits has the potential to damage genes in isolated human cells.

The noticeable aggressive description of the case and the already well-known close ties to industry of its writer had the effect that Prof. Lerchl's letter to MUV was initially regarded as hardly credible. However, this changed after the retirement of the senior author, Prof. Hugo W. Rüdiger, in October 2007. The following spring, the MUV rector quite unexpectedly mandated his Council for Scientific Ethics to seek clarification of the case. As a first step, the Council requested - based on Prof. Lerchl's criticism - an expert opinion from a statistician at MUV. His statement takes the view that it might possibly be data fraud, but despite some deviations from the norm one cannot necessarily conclude from the statistical analysis that it is actually fraud.

In the interim, Prof. Lerchl had also informed the editors of Mutation Research about his suspicion of fraud and, at the same time, requested a retraction of the publication concerned. However, he declined the editors' offer to explain his position in a Letter to the Editor, because for some unexplained reason he obviously wished to remain anonymous. The editors, too, had the results of the criticized study checked by statisticians. Since the findings corresponded with those in Vienna, they believed that a drastic step like the retraction of a publication because of suspicion would not be justified, and no further steps were taken.

As matters stand, the MUV rector received a surprising message at the end of April 2008 that further fuelled the fraud suspicion. Prof. Christian Wolf, former Deputy Director and now Acting Director of the Clinical Division of Occupational Medicine, informed the rector that a technical assistant in his laboratory had submitted data without having carried out the required testing. The accused technical assistant - for the past ten years with the Division of Occupational Medicine and considered highly qualified - had indeed not checked the testing results of her colleague as instructed by the new head of the lab but had submitted instead a 'pro forma listing', as she liked to refer to it. When asked for an explanation, she immediately confessed the misconduct but for a while did not share the motivation for her actions. Later it became known that she did not want to harm her colleague whose testing results she considered to be erroneous, because the decision about her employment contract was pending. In an e-mail dated September 3, 2008, the technical assistant explains her behaviour like this: *The only – serious - mistake I can accuse myself of is: I should have informed Alex [head of the lab] about this situation right from the beginning in April and I should not have tried to give Petra [colleague] a chance to explain herself.*

Instead of carrying out the task as requested by the head of the lab, who had been her colleague for many years, the technical assistant secretly tried to find out whether it was really that easy to crack the code used for the blinding of the exposure chambers as had been suggested by her colleague. This colleague had observed in December 2007 that a technician maintaining the equipment could easily read from the display which of the two chambers had been actively exposed. With her discovery the technical assistant intended to surprise the head of the lab, who depended on her for all research activities. Due to their easy familiarity with each other, she was convinced that she afterwards could rely on his understanding of her behaviour. Never could she have imagined that a trap had been set up for her with far-reaching consequences. The head of the lab behaved totally different from what she had expected. Immediately after discovering the fake series of numbers, he - without consulting her - informed the acting director of the Division of

Occupational Medicine, Prof. Wolf, about the incident. On the very same day, Prof. Wolf went to see the rector in order to inform him that a scientific misconduct had been detected at his division.

Right from the beginning, the technical assistant emphasized that this had been a personally motivated single event. It had nothing to do with previous projects she had been involved in; all data so far collected with her help were obtained according to the rules. In opposition to the rector's claims that this is a staff member already known to fake, she explicitly states once more in her e-mail from September 3, 2008, and we translate: *Before the Council I also did not confess to any data fabrication regarding the published studies - I admitted the incident from April - and even then I pointed out that I wanted to know whether it would actually be possible to 'crack' the chamber as I had heard about at the beginning of April!*

That the technical assistant terminated her position with MUV at this time is, by the way, not to be confused with an admission of guilt. The immediate reason for this decision was that she had not been granted a holiday she had requested for family reasons. Apart from that, it was not especially difficult for her to take her leave from the university because the work atmosphere at the laboratory had started to deteriorate since Prof. Rüdiger's retirement.

3. A Council for Scientific Ethics is misused to destroy scientific data

Without any investigation, the Council for Scientific Ethics already confirms the suspected fraud it had been called to investigate. And already at its first meeting on May 16, 2008, the Council concludes that the two publications the technical assistant had contributed to and was listed co-author must therefore be retracted. The hasty decision was not only made without validating the data and hearing Prof. Rüdiger, former director of the Division of Occupational Medicine, but it was also assumed that over the years *all* data provided by the technical assistant, despite her firm protestation to the contrary, were not based on measurements but had been fabricated. Too, it is simply stated that she supposedly knew the blinding code for the exposure chambers at least since 2005. No one believed her explanation that she did not need to know the code because certain cellular changes after exposure could be seen so clearly under the microscope that she could tell the difference between exposed or sham-exposed samples almost at first glance.

Strangely enough, the Council for Scientific Ethics limits its recommendation to retract publications to the two papers that deal with mobile phone radiation: the above-mentioned paper in Mutation Research from 2005 and another one from 2008 with the title *Radiofrequency electromagnetic fields (UMTS 1950 MHz) induce genotoxic effects in vitro in human fibroblasts, but not in lymphocytes* authored by C. Schwarz, E. Kratochvil, A. Pilger, N. Kuster, F. Adlkofer and H.W. Rüdiger and published in the *International Archives of Occupational and Environmental Health (IAOEH)*[4]. Further six publications, which also show evidence for genotoxic effects through extremely low-frequency electromagnetic fields, were not of interest to the Council for Scientific Ethics and dropped into oblivion for the time being. This is only one of the several indications that reveals that the present case is not primarily about scientific but rather economic interests. The intention to eliminate a serious obstacle for the mobile communication industry is clearly shown.

The MUV rector demands the retraction of two publications

Based on the decision of the Council for Scientific Ethics the rector demands of Prof. Rüdiger to sign two *Letters of Retraction* for the studies about genotoxic effects of GSM radiation *(Mutation Research 2005)* and UMTS radiation *(IAOEH 2008)*. Prof. Rüdiger's objection that there could

be no doubt about the accuracy of the published data, which had been confirmed by independent teams, is disregarded by the rector. Further, he ignores that the accusation of not adhering to the blinding protocol - based on the investigation of the Council for Scientific Ethics - does not at all apply to the publication of 2005, because years ago the responding data were obtained at the Free University of Berlin and not at MUV. He explains his decision with the vote of an independent commission to which Prof. Rüdiger has to submit even if he is convinced of the soundness of his data. Reluctantly, Prof. Rüdiger yields to the enormous pressure and signs the two letters prepared by the rector to the editors of both international journals.

Prof. Wolf obtains the technical assistant's consent for the retraction of two publications

Prof. Wolf takes the two letters to persuade the technical assistant to also sign. On May 22, 2008, in a conversation outside the university he presents to her Prof. Rüdiger's declarations of consent. He makes it clear to her that the retraction of the studies is inevitable, because it is already her ability to recognize exposure by just looking at the samples that suggest the possibility of systematic assessment errors. The technical assistant, though not aware of any such errors but intimidated enough, knowing that her former director signed already, signs too.

But the other co-authors of the two publications, Prof. Franz Adlkofer and Prof. Niels Kuster - who do not belong to MUV and who cannot be put under a similar pressure - refused to give their consent to the retraction as they could see no reason to do so, based on the information they had. Without any consideration of this fact, the MUV rector in a first step informs the editors of both scientific journals that the two publications are most likely based on a major scientific misconduct and that they have to be retracted.

The chair of the Council for Scientific Ethics turns out to be an employee of the mobile communication industry

Two days after the rector's request to retract the publications, surprising news surfaced: the chair of the rector-appointed, three-member Council for Scientific Ethics is a lawyer working for a company of the mobile communication industry. As the previously assumed independence of the Council cannot be reconciled, Prof. Rüdiger and the technical assistant immediately withdraw their signatures from the *Letters of Retraction*. Prof. Rüdiger requests of the rector that the Council reassemble under a neutral chair and allow him to make his case. Moreover, he asks that the lab data also be reviewed as this had not been done so far. After all that it should have been obvious that the rector accepts Prof. Rüdiger's suggestion to replace, due to partiality, the chair of the Council for Scientific Ethics and entrusts the Council under a new chair with the further investigation of the accusations. For the time being, the rector does not respond to this suggestion, and it is not until the events allow no further refusal that he concedes to arrange at least for a new chair of the Council.

The rector is entitled to appoint the three-member Council for Scientific Ethics according to certain rules. As each appointment is kept secret, he could have indeed assumed that nobody would learn that an employee of the mobile communication industry had been appointed chair. It was only by chance that this information was revealed. This unbelievable event does indeed further support the suspicion that in our case we do not deal with scientific but with economic interests. Obviously, the attack on the research results of the Division of Occupational Medicine had been planned well in advance and its implementation was under way with a series of actions. Before becoming active, a Council for Scientific Ethics had to be appointed which was only possible in the beginning of 2008. With the chair held by a lawyer employed by industry the requirements were met to elegantly eliminate the unwelcome research results with the greatest possibility of success. What somewhere else would have hardly been possible, at MUV[5] the circumstances certainly do not speak against such an assumption, and the subsequent course of events confirms it from always new angles.

4. The MUV rector informs the public about fraud at his university

Yet, in this situation the rector follows a logic that can only be explained with conceitedness, a lack of insight, or with pressure from outside. He still trusts in the findings of suspected fraud by the Council for Scientific Ethics. Its doubtful findings that obviously had been presented to him only orally - there are supposed to be no minutes of the Council's meeting - are sufficient for him to inform the public about the accusation of fraud.

On May 23, 2008, a press release[6] is published in which the public is informed about the rector's serious suspicion that the work on genotoxic effects of mobile phone radiation by the former Clinical Division of Occupational Medicine has been fabricated. The rector responded rapidly and decisively to the serious suspicious factors, he called on the authors of his university to retract their publications, and he informed the editors of the scientific journals, in which the publications had been published *"that the aforementioned publications are based with very high probability on serious scientific misconduct"*.

He argues that the statistics of the data of both publications were contested by other research groups in Letters to the Editor and that an internal investigation at his university which he prompted also supports the suspicion that the data have not been obtained experimentally but fabricated. The suspicion is corroborated substantially by the fact that it was possible to convict a team member involved in both publications of fraud, *"... this author had based her entire working procedure on producing preconceived results"*. The team member had immediately confessed to her behaviour and soon thereafter terminated her employment with MUV. The Clinical Division of Occupational Medicine, which had been under the leadership of Prof. Rüdiger until October 2007, would now undergo *"radical reorganisation, with the aim, among others, to ensure that scientific and ethical criteria are complied with in the long term"*.

The concluding statement of the press release states:

"Rector Wolfgang Schütz emphasises that 'regrettably malversation occurs time and again in research practice'. Therefore, he adds, it is necessary to act quickly and with determination. 'This it what the MUV owes to the university's reputation, researchers and lecturers, students and not least the public'. Rector Schütz is confident that 'the authors will ultimately show understanding, the more so because also their scientific reputation is at stake'."

The affected authors object to the rector's press release

The authors Prof. Adlkofer and Prof. Rüdiger declare in their counter statement[7] that they are not willing to retract the listed studies just because of the MUV rector's order as they are still convinced of the soundness of the data described in the publications. The technical assistant's 'data fabrication' did not take place during the work of the criticized studies, but much later and long after Prof. Rüdiger's retirement. It is true that the statistics of the studies have been contested, but this is explained by the fact that the critics are not familiar with the testing procedures. The knowledge about the genotoxic effects of mobile phone fields is without doubt very important for the risk assessment of this technology. To retract the publications without a valid reason, therefore, does not fit with the authors' view of scientific responsibility to the public.

5. The replacement of the chair of the Council for Scientific Ethics changes the initial situation

Against the MUV rector's will Prof. Rüdiger is finally successful in having the Council for Scientific Ethics reconvene under a new and neutral chair. In two hearings, on June 19 and July 24, 2008, the Council deals once again with the accusation of data fraud in the publications on genotoxic effects of mobile phone radiation.

A 'talk between colleagues' is believed to help settle things amicably

Ten days prior to the meeting scheduled by the Council for Scientific Ethics for July 24, 2008, Prof. Rüdiger receives an unexpected e-mail from a member of this Council, inviting him to have a talk between colleagues with no minutes being taken so that some problems may already be solved beforehand. This talk was set to take place right before the scheduled meeting in the presence of another Council member. In view of the scantiness of the evidence, which by now must have been obvious, it looked as if a solution was sought to bring this issue to an end without the rector losing his face.

During the talk, it is proposed that Prof. Rüdiger should distance himself from the publication in the *International Archives of Occupational and Environmental Health* from 2008 based on formal reason - because of shortcomings in the blinding procedure that cannot be completely ruled out. In return, the accusation of fraud for both publications would officially be dropped and the publication in *Mutation Research* from 2005 would stand. This proposal for compromise is explained with the argument that otherwise the rector would have to maintain his accusations of fraud in another press release even if data fraud could not be definitively proven. This would undoubtedly badly damage the reputation of the authors of the publications and that of MUV as well. Only after a great deal of persuasion, Prof. Rüdiger agrees to the proposed compromise. The Council members were able to convince him that if he refused, he could not shoulder the responsibility for either of the possible outcomes: the unhampered continuation of the campaign would damage the reputation of the involved scientists; giving in by the rector - which could hardly be expected - would affect his personal reputation and that of MUV. Thus, Prof. Rüdiger agrees to the compromise with the explicit condition that the accusation of fraud would from now on not be mentioned for any of the publications and that the request for retraction of the publication in Mutation Research 2005 would never be made again.

The proposal for an 'amicable agreement' is accepted

In the minutes of the meeting of the Council for Scientific Ethics from July 24, 2008, the summarizing conclusion states that the claim of fraud can no longer be maintained because there is no evidence for it[8]. The minutes reveal that the so-called "causa Rüdiger" definitely received a different assessment under the new chair of the Council for Scientific Ethics compared to his predecessor.

The change of assessment shows especially in the following points:

- It is thought-provoking that the technical assistant is shown in a completely different light. A member of the former Council for Scientific Ethics had assured Prof. Rüdiger and Prof. Adlkofer that during the hearing the assistant accused of data fabrication had acted as a hard-boiled and tough fraudster, capable of doing anything and absolutely untrustworthy. Under the new Council chair, Prof. Rüdiger is now informed that the technical assistant appears to be a highly intelligent and eloquent young woman who knows how to argue with credibility and who made an excellent impression during the three-hour hearing. She clarified that double blinding was provided, that she has always worked under double-blind conditions, and that the speculations of her knowing the code for the exposure chamber since 2005 are not true. The analysis of the samples had always been performed without knowledge of the code.
- Prof. Michael Kundi (MUV), who had been consulted as an expert on statistical analysis, also found the low variance of the results striking but explained why this does not automatically equal fraud as claimed by Prof. Lerchl. When using a computer-aided analysis for the comet assay, the variance coefficient is up between 10 and 15% after analyzing a minimum of 50 cells. In contrast, the results of the technical assistant who used visual analysis methods showed only a variance of 1 to 2% per 500 cells.

It has been known empirically that results based on visual analysis methods usually show a much lower variance. Based on this knowledge, Prof. Kundi does not consider the results provided by the technical assistant as impossible even though such a low variance comes close to the threshold of the observable.

- The technical assistant also helps to clarify the statistical abnormalities that came under attack. As already stated at the hearing before the former Council for Scientific Ethics on May 16, 2008, she reports that for many years she has been able to recognize changes in cells under the microscope which infers their exposure status. Such characteristics as increased occurrence of so-called comet tails, more irregular cell growth, and difficulty in lifting cells from the petri dish, would assign the sample to the exposed group. No doubt, knowing as to whether a sample has been exposed or not reduces the significance of the coding, which is designed to ensure blinding conditions during the evaluation process. The qualitative differences recognizable under the microscope already at first sight are simply quantified during the subsequent counting of cells, or put it another way: the subjective factor of knowing prematurely as to whether a sample has been exposed or not influences the statistical analysis only in such a way that the scattering range and the coefficient of variation decrease. This expertise based on years of experience and exceptional powers of observation should not be held against the technical assistant. Too, this does not devaluate the conclusions drawn from her work, because when no differences show nothing can be detected. That differences can be recognized already at first sight under the microscope should rather be considered a sign of the extent to which mobile phone radiation causes cell damage.

- The question remains controversial as to when the technical assistant had been able to crack the coding. She herself says that she has known about it since April 2008. Her co-worker, who obtained this knowledge around the end of 2007 during the maintenance of the exposure set-up informed her about it, and she had seen it confirmed in her investigations. Contrary to these statements, the members of the Council for Scientific Ethics are convinced that she has known the coding of the exposure chambers at least since August/September 2005. They had to be, because this assumption played a key role in the search for a compromise intended to save the rector from admitting an irresponsible information policy and to make it possible for Prof. Rüdiger to retract one of the two publications. The assumed date seemed convenient to help bring this issue to a conclusion with an "amicable agreement" as this prospect had already been announced at the beginning of the meeting according to the minutes, and we translate:

  Based on the available files, it appears to be not at all that unrealistic that Prof. Rüdiger would agree to an announce ment of retracting the publication from 2008. […] The wording of such an amicable agreement under discussion would, on the one hand, sufficiently accommodate the interest of the Medical University as a research facility, without, on the other hand, permanently - considering that based on the currently available findings of the hearing it cannot be assume that he had known anything about the decoding of the blinding - and inappropriately damaging Prof. Rüdiger's scientific reputation.

- Without an agreement on when the technical assistant had known the coding, the Council for Scientific Ethics now made its own assumption about the date to base its proposed compromise on. The minutes of the preliminary discussion conclude with the statement that the rector of the university agreed and that an "amicable agreement" of this nature should be sought, and we translate:

  The Council for Scientific Ethics assumes that the statements derived from the investigation findings below, so to speak, form the (tacit) legal basis for the amicable agreement with Prof. Rüdiger. On the supposition that Prof. Rüdiger will meet his agreed-upon obligation of retracting the study from 2008, the case is considered closed and then the listed considerations are no longer regarded as important. […] The question of scientific misconduct is resolved through the amicable agreement with Prof. Rüdiger. The issues of appropriate methods and consistent research results should, from now on, be purely a matter of scientific discourse.

But the minutes also reveal the restrictions Prof. Rüdiger explicitly made as a condition of giving his agreement to the compromise. He would only agree to the retraction of the study from 2008 because he could not completely rule out problems with the blinding. Also, he would knowingly take this step for himself and does not speak for any of the other authors of the study and would rather expect their opposition.

6. After July 24, 2008, further fraud claims are false testimony

The alleged fraud cannot be proven

The most important result in the minutes of the meeting of the Council for Scientific Ethics from July 24, 2008, however, is that the fraud claims could not be substantiated, and we translate:

The results of the investigation did not provide any evidence that knowing the codes had been used deliberately to manipulate the results of the project or had otherwise been relevant to the research results. Especially in light of Prof. Kundi's re-evaluation, no conclusion can be drawn as to whether the samples used at that time were suitable or not. It could not be shown that the unusually low variance of the results of the evaluations [...] would be completely impossible and a clear sign of data manipulation (statement of Prof. Kundi).

Obviously, the Council only stuck to its claim that the technical assistant had known the codes for much longer than admitted so as to reach a compromise between the rector and Prof. Rüdiger. The reason why the Council did not take any further action to the disadvantage of the technical assistant can obviously be explained by this fact.

The exoneration of the accused is kept secret

The exoneration of the team suspected of data fraud is clearly explained in the minutes. Applying common legal standards, it would have been correct to personally inform the wrongfully accused ones and to rehabilitate them by releasing the findings obtained. But while the message on fraud was made public as loud as possible, the refutation is now kept secret. It is true that the professors Adlkofer and Rüdiger can read the minutes under supervision in the rector's office, but they are not handed over to them. The rector classifies them a secret document. Therefore, it is rather strange that Prof. Lerchl gets hold of the minutes and can obviously even use it the way he wants. According to him he received it from an anonymous. Due to this fact we got hold of this document - indirectly and surely not intended by Prof. Lerchl.

As if there were no exonerating statements in the minutes, the rector revives the old allegations of fraud in a second press release on July 29, 2008[9]. After the findings of the Council for Scientific Ethics he not only led off deliberately sequels of false testimony. The compromise he himself proposed turns his press release into a document of a striking break of words.

The second press release of MUV is a document of a break of words

As soon as Prof. Rüdiger agreed to the dubious compromise, the rector ignores the "amicable agreement" as well as the statement of the Council for Scientific Ethics that the fraud allegations could not be proven. In another press release he informs the public that Prof. Rüdiger has retracted his obviously incorrect mobile phone study. Afterwards all previous fraud allegations made by the rector are fully renewed. And, the rector sees the "causa Rüdiger" as terminated and adds:

"We have undoubtedly responded quickly and unambiguously, which is what we owe to our university's reputation, to researchers and lecturers, as well as students. Methods not complying with scientific objectives and the ethos of correct scientific practice cannot be tolerated. I'm very calm now that Mr Prof. Rüdiger in the end realised what had to be done."

With this press release from July 29, 2008, the rector not only ignored the compromise that had been negotiated by the Council for Scientific Ethics with Prof. Rüdiger, but he even reinforced the accusation of data fabrication. With his malicious statement that, in the end, Prof. Rüdiger had shown understanding, he implies that with the retraction of his study Rüdiger indirectly admitted the misconduct. That the compromise actually was a blackmail to keep the rector from losing his face is not mentioned at all. It is implied that the criticism of the composition of the first Council for Scientific Ethics was unjustified, the replacement of the chair was unnecessary and a concession to Prof. Rüdiger's sensitivities rather than a necessary consequence of a proven partiality. This sheds a strange light on the rector's sense of justice, given that his attitude is not in line with common European legal standards. In his press release he tries quite obviously to save - with platitudes on the reputation of science and his university - his own reputation at the expense of others.

Prof. Rüdiger and Prof. Adlkofer comment on the rector's break of words

How far the press release contradicts the findings of the rector-appointed Council for Scientific Ethics mandated to investigate the facts of the case can be seen from the statement by Prof. Rüdiger from August 2, 2008:

"That the rector ignores the compromise he himself had endorsed in the first place and then confirms with his second press release from July 29, 2008 the validity of his first one from May 23, 2008 speaks for itself. Especially the following points need clarification:

1. *The mobile phone study is not retracted by me because it is evidently incorrect, but solely for formal reasons.*
2. *The retraction is the result of an internal agreement (compromise), which had been agreed by the rector and to which he now does not adhere.*
3. *The ongoing investigation over the past months did not lead to findings that prove the fake of published data. To a written inquiry by the chief editors of the International Archive of Occupational and Environmental Health from June 3, 2008, the rector has not yet replied.*
4. *It has not been proven that the employee conducting the experiments has known the blinding code of the exposure chamber since August 2005.*
5. *Because of his reference to suspected data manipulation he had announced on May 23, 2008 (but which since then has not been validated by the Council for Scientific Ethics), the rector keeps the suspicion of fraud at least indirectly alive — which is not justifiable.*
6. *His mentioning of the publication* E Diem, C Schwarz, F Adlkofer, O Jahn, HW Rüdiger (2005) Non-thermal DNA breakage by mobile-phone radiation (1800 MHz) in human fibroblasts and in GFSH R17 rat granulosa cells in vitro. Mutation Research 583, 178-183 *is misleading because this paper has not been retracted."*

The following also illustrates how little the MUV rector had actually been interested in any clarification of the facts. On August 27, 2008, in a letter to the rector, Prof. Adlkofer points out to a not yet clarified contradiction between a statement of the technical assistant and the assumptions of the Council for Scientific Ethics, which he had noticed in the minutes. He informs the rector that he could only agree to the retraction of the publication, if the contradiction is clarified. Moreover, he demands that the minutes be published. But his letter remains unanswered. Too much clearing up is obviously not appreciated in the "causa Rüdiger".

MUV's second press release shows that the rector does not agree with the outcome of the hearings by the Council for Scientific Ethics he appointed and, especially, not with the minutes written under the supervision of a chairman who remained neutral. According to his office, in such a situation he has the right to disregard the minutes and decide on his own - which he extensively did in the "causa Rüdiger".

7. Prof. Lerchl continues his campaign in spite of the findings by the Council for Scientific Ethics

After his 'fast and clear' investigation of the "causa Rüdiger", the rector at least thinks it necessary to bring to an end the joint activities with Prof. Lerchl. But this forces Prof. Lerchl, who does not believe to have reached his goal, to take over the management of the campaign. Had he so far in mid-2007 started the campaign anonymously and in the background and had he mainly hidden behind the MUV rector, he now must more and more show himself as the true initiator and campaign manager. The minutes of the meeting of July 24, 2008, that have been kept secret, give him the opportunity to even increase the aggressiveness and the varying attacks. After he had admitted to be in the possession of the minutes, however, the date July 24, 2008, must be regarded an important turning point: Anyone who was informed about the outcome of the investigations, but still went on to spread the fraud allegations in public was guilty of false testimony.

It is very clear that Prof. Lerchl knew the outcome of the investigations in Vienna, but still he continued his campaign after mid-2008 as if he was not concerned by the findings of the Council for Scientific Ethics.

The second part of the documentation published on the website of the Pandora Foundation for Independent Research describes the variety and the aggressiveness of the ways, with which he continues to pursue his goal to have withdrawn the unpleasant results:

The *Laborjournal*, a journal in which Prof. Lerchl launched his campaign in April 2008, continues to support his campaign by supplying the scientific community with numerous further articles that carry the message of fraud.

In two articles, for which Prof. Lerchl supplies the contents and the journalist Manfred Dworschak the writing, the German newsmagazine Der Spiegel broadcasts the news of alleged data manipulation to the public. These articles convey the impression as if the team from Vienna would have already been convicted of fraud.

In his self-published booklet *Fälscher im Labor und ihre Helfer* [Fraudsters in the lab and their helpers] from 2008, Prof. Lerchl already adds the claimed data fraud to the history of proven cases of scientific misconduct. By exposing the fraudulent behaviour of the Vienna team, he even sees himself going down in history as a prominent investigator. He tells the mobile communication industry in no uncertain terms that, should the results of the Vienna team be true, they would announce the beginning of the end of mobile communications. Thus, he shows them in his own blatant way how important he is for them, because with his disclosure he eliminated a problem of economic explosiveness.

At a workshop in Vienna in 2009 by the German Research Association for Radio Applications (FGF) - a lobby group of the mobile communication industry within the scientific community - there was hope to finally being able to lay the Vienna REFLEX study results to rest at their place of origin with a lecture by Prof. Lerchl. With its unexpected course, however, the workshop also showed the already crumbling cover of Prof. Lerchl's intentions to serve the mobile communication industry.

In the course of this campaign the editors of both scientific journals, in which the suspected studies had been published, face the joint pressure from Prof. Lerchl and the MUV rector to withdraw the studies. When, despite quite some irritations after a thorough investigation they cannot find any reason for withdrawal, Prof. Lerchl goes with his complaint to the Committee on Publication Ethics (COPE) in London.

Even after the MUV Council for Scientific Ethics had already rejected the suspicion of data fraud in 2008, Prof. Lerchl requests from the newly established Austrian Agency for Research Integrity (OeAWI) another investigation into his fraud allegations in order to make the apparently impossible somehow possible, that is, to remove the Vienna research findings from the scientific literature. But in December 2010 this organization also acquits the Vienna team of the suspicion of data fraud.

By exploiting the forum of the German Information Centre against Mobile Communication (IzgMF) Prof. Lerchl's campaign reaches its lowest level. It shows that this scientist stops at nothing in order to advertise his fraud allegations in public. Since for years, this forum of interested people has not only been known for its defamation of those who challenge the mobile communication industry, but also for its confusion of criticism with slander and of freedom of expression with defamation.

Whoever is interested in the details of all these activities can find them

comprehensively described in the second part of the already mentioned documentation on the Pandora website. From the seven chapters of the documentation, the following four ones might be sufficient to characterize the goal and the level of the campaign. Subsequently, they describe how the *Spiegel*, the scientific market, a scientific meeting, and a questionable forum have been exploited for the claimed data fraud.

The scandal widely known and observed even beyond Austria and Germany sheds light on the questionable network of mobile communication industry, politics, and radiation protection. In regard of his specific responsibility for German radiation protection, Prof. Lerchl plays a role that can go as an example far beyond his person. We do not know how far he acts on his own or how far he is only exploited. In any case, the authors of this brochure make no secret of their view that science seems to play a miserable role in this evident network of industrial, political, and scientific powers. The scandal in science *claimed* by Prof. Lerchl has with him and under his influence become *indeed* a scandal in science. Summarizing his wild and uncultured campaign activities, the professor from Bremen has shown how quite a few scientists get involved if it seems to help their professional and private careers.

8 . The newsmagazine *Der Spiegel* provides Prof. Lerchl's campaign with the desired broad public exposure

Spiegel journalist Manfred Dworschak unconditionally offers his service to Prof. Lerchl's campaign without checking- and, thus, against his journalistic duties - the fraud allegations. This can be explained with the general influence the mobile communication industry has on the media. After all, it shows that the advertising budget of the mobile communication industry outstrips the one of the tobacco industry by far. Two *Spiegel* articles were published in May and August 2008. The sensational language is owed to Manfred Dworschak and the content to Prof. Lerchl. Did the *Laborjournal* take over the task to spread the message on fraud in the scientific community, two *Spiegel* articles now provide the greatest possible dissemination among the German and world-wide public. And, obviously, the second published article is already assigned the new task to help to continue the campaign.

Caught at foul play

In *Der Spiegel* 22/2008, Manfred Dworschak reports on the sensational turn of events that the evaluation of the worldwide quoted MUV research results of the biological effects of mobile phone radiation has taken, and we translate[10]:

It was one of the most horrific findings about the danger of mobile phones. Mobile phone radiation, so it said, would break the fragile strands of the DNA inside the cells. Possible effect: cancer. […]

Now, it has turned out that most likely all of this is a fraud. A lab technician simply invented tons of data. Simultaneously two much discussed studies have become […] more or less useless; the university demands that they are retracted. […] Now, only the inglorious roles of the professors Adlkofer and Rüdiger wait for a clearing up.

The professor's favourite

Under the headline *Die Favoritin des Professors*[11] *[The professor's favourite]* in the Spiegel edition 35/2008, Manfred Dworschak hints already in the bold-printed announcement of his comments at the obstruction of the due investigation, and we translate:

Vienna researchers believe to have shown that mobile phone radiation damages DNA - with apparently fabricated studies. The case is a lesson of how to handle tough fraudsters: who should uncover fraud cases when science itself cannot cope with it?

The article goes on to relate what Prof. Lerchl will later present in his book about the *Fraudsters from Vienna and their helpers*. The previous allegations are more or less presented as facts. A new element is added: ridicule the enemy and make the campaign initiator a hero. Illustrated with corresponding images, the 'old'

Prof. Rüdiger is portrayed as some kind of Professor Unrat [a story by Heinrich Mann] who is infatuated by a young and beautiful woman, without realizing how she is fooling him. He is juxtaposed with the 'proper' Prof. Lerchl who has bravely taken up the fight against the infamous fraudsters in science and succeeded against all opposition. Prof. Lerchl and Manfred Dworschak largely ignore that the MUV Council for Scientific Ethics was unable to verify the fraud claims and that recent studies confirm the validity of the research results from Vienna. Both these facts only seem to serve Prof. Lerchl's motivation to continue the campaign with even more dedication.

The conditions at MUV are made responsible for the unsatisfactory result of the investigation

The second Dworschak article obviously owes its existence to Prof. Lerchl's extreme disappointment about the course of the investigation into the "causa Rüdiger" at MUV. It is reported with displeasure that the investigation at MUV drags on and on and that the current outcome of the investigation is highly unsatisfactory. Consequently, the article does not spare discriminatory language when referring to the responsible persons at MUV. The MUV rector is also given a taste of Prof. Lerchl's anger. It seems as if the rector has not acted according to their agreement and, thus, is made jointly responsible for the unexpected outcome of the investigation, and we translate:

Everything must be checked, Wolfgang Schütz, the rector of the Medical University, promised when the scandal became public. […] There is no more talk about that, yet a surprising turn of events took place. A three-person council of the university half-heartedly pokes at the case; K. juggles confessions and retractions; her superior professor denies any misconduct. […] Outcome: hardly worth mentioning. […] Unfortunately, one can hardly prove that the suspected did so.

Prof. Lerchl interprets his campaign as a lamentable object lesson of a failed investigation, and we translate:

At the end of the day nothing did happen. Not a single study has officially been withdrawn. Instead, the case turns into a lesson: it seems that science is incapable of resolving an obvious fraud scandal by its own effort.

Prof. Lerchl seeks a strange deal with *profil* journalist Tina Göbel

Based on its own investigations, the Austrian newsmagazine *profil* comes to a quite different view of the events. In her article called Reputation suppression: The morality behind the allegedly fabricated mobile phone studies from November 24, 2008, the *profil* journalist Tina Göbel extends her critical observations into a study of Austrian morality around the conflict of interest between mobile communication industry and science, and we translate[12]:

The fraud scandal of the mobile phone studies at the Medical University of Vienna received a worldwide response. But documents accessible to profil appear to make a fraud questionable - and show the conflict of interest between the mobile phone industry and science.

The hope to exploit the journalist and her contacts for his goal belongs to the several misjudgements by Prof. Lerchl, who obviously had a hard time to believe what was written in the minutes of the meeting of the Council for Scientific Ethics of July 24, 2008, which he had received anonymously[8]. In an attempt to determine if the document, which had probably been leaked from the rector's office at MUV, was truly authentic, he asked the *profil* journalist Tina Göbel to verify it through her contacts. As she had told him previously that she did not know the secret document he sends it to her in return for the expected help. An e-mail from June 25, 2009, explains the suggested 'deal', and we translate:

Now you did receive it from me. Service in return: You look into its authenticity and immediately let me know. Deal? I know, you would probably prefer to do anything else but a deal with me, the evil radiation risk denier, but it is worth it, isn't it?

For security reasons only: Without my written consent, none of the contents of my mails to you may be forwarded or published. I hope you have understanding for this safeguard

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We will refrain from making any comment or judgment on this.

9. A booklet about *Fraudsters in the lab and their helpers* unmasks its author as an unbridled slanderer

A scientist's publications especially reveal the level and consistency of his arguments. This is also true for the presented case. In his short booklet on *Fraudsters in the lab and their helpers - the Vienna mobile phone studies - a single incident or a symptom*[13], Prof. Lerchl repeats and expands with more details the condensed versions that had been published in the *Laborjournal* and *Spiegel.* Already in the preface, he points to the extent of the fraud he uncovered and its consequences. He also does not fail to mention the lack of understanding he had to endure from others with his analyses. The message he tries to convey is that he unwaveringly supports the implementation of ethical principles in science and for this he should receive thanks and appreciation, but instead he is suspected of representing the interests of the mobile communication industry.

In the preface he reports the scandal he uncovered and the reactions he went through, and we translate:

It has taken me over a year and still occupies my time, and most likely the scandal will be discussed for a long time to come. It brought an entire university into discredit, careers were cut short, and many critical questions about the system of quality control in science were raised. When in summer 2007, I analyzed the data for the first time in my office over a weekend and noticed that something was definitely off with the study from Vienna, I had no idea what this discovery would unleash. The reactions ranged from colleagues who were critical of my analyses to editors of scientific journals who did not adhere to their own ethical principles, culminating in attempts to withhold important documents and to prematurely terminate investigations, to say nothing of the personal attacks by mobile phone opponents from whom I took their strongest arguments [research findings at MUV]. This even went so far as to slander me as a paid lobbyist of the mobile communication industry.

The difference between alleged and proven fraud is levelled

The topics of his booklet have the obvious goal to destroy the scientific and moral reputation of the members of the MUV team, and Prof. Lerchl must have completely lost his sense of proportion. In the chapter called *Research fraud - not a single incident*, he describes a number of major fraud cases in science, including the case of the South Korean cloning researcher Hwang, to whom we will return later. Prof. Lerchl points out that falsified data are more common in science than realized and makes clear where the team from Vienna must be ranked. In the chapters called *The first incident: Diem et al. 2005* and *The second incident: Schwarz et al. 2008*, he provides a detailed account of how he arrived at the conclusion that the study results of the Vienna team must be falsified. In the chapters called *The non-response by Mutation Research* and *The strange responses by the journal IAOEH*, he goes into his dispute with the editors of those scientific journals who declined to withdraw the publications he considered as fraud. Since the editors did not believe his claims, they incur the accusation of irresponsible behaviour.

In several chapters Prof. Lerchl describes how he and the MUV rector evaluated the events in Vienna. A separate chapter is dedicated to the Verum Foundation in Munich and its executive director Prof. Adlkofer. The latter is alleged to have become involved in mobile communication research at the instigation of the tobacco industry so as to distract public attention from smoking and passive smoking by establishing new risks. In the concluding chapters called *Consequences for science and legal consequences?*, Prof. Lerchll lectures the public about the consequences for science and jurisdiction that arise from scientific misconduct. To solve the problem he makes proposals of which he seems to believe everyone has only waited for - in the interest of truth and integrity in science.

Commercial interests dominate public health interests

One paragraph in his book is especially revealing, because Prof. Lerchl explains the commercial motives for his actions (page 141), and we translate:

When, as in the present case, studies are published that discredit an entire technology - in this case mobile communication - the damage is probably a considerable one, and that for very different reasons. When a new base station is to be installed, citizens who see their health put at risk routinely protest

against it. Mobile communication service providers are criticised, they have to defend themselves at town hall meetings and are sometimes exposed to harsh criticism why a base station is to be placed exactly at the proposed site. Often, after having obtained expert assessments, alternative sites are sought and found, all of which is associated with high costs. And then there are those people who are so confused that they decide for themselves and their families to use mobile phones as little as possible or even to completely do without mobile phones. These damages (non-completion of contracts) are also difficult to quantify and in the end are not suitable as a basis for damage claims.

This quote clearly shows that commercial interests are given precedence over public health interests. If Prof. Lerchl were a physician, he would be violating his Hippocratic Oath. We find a large discrepancy between Prof. Lerchl's assigned mandate to protect the public from health risks and his own self-image as a biologist; he cannot even see the obvious conflict of interests. This might have made it easier for government and industry to exploit him for their purposes.

Genotoxicity is evoked as a risk for the mobile communication industry

In terms of the services he offers, the following sentence from his booklet takes on a special meaning (page 43), and we translate:

The findings of Diem et al. were truly alarming. If they should be confirmed, would this be not only a wake-up call but also the beginning of the end of mobile communication because DNA damage is the first step in the process of cancer development.

When taking the actual conditions of the Vienna experiments into consideration, this claim is unsubstantiated and it certainly overshoots the mark. But it may have been designed to show the mobile communication industry how much they are dependent on Prof. Lerchl for defending their interests. And now, his chumming up to the mobile communication industry demanded that decisive action is taken after such big words. That Prof. Lerchl expected to receive recognition from the scientific community for that casts doubt on the way he sees himself as a scientist.

In the afterword Prof. Lerchl summarizes the conclusions of his investigation, delivers his damning verdict of the Vienna team, and again demands that all their publications should be withdrawn, and we translate:

Two studies about DNA damage in human cells alleged to be caused by electromagnetic fields of mobile phone radiation have clearly been uncovered as a fraud. A lab technician - for whatever reasons - faked the data. It was easy for her to commit the fraud because the allegedly secure blinding mechanism of the exposure chambers could be overridden with a simple trick. [...]

In addition, a grave accusation is also justified against the editors. Due to their inaction, the impression was created that evil forces were out to get the responsible scientists and discredit them. That the exact opposite is true is of as little interest to the editors as the extensive damage they have caused through their actions for the reputation of science as a whole.

When considering the 'speed' and the 'determination' of the agencies in charge, probably many years will pass until finally an end can be put to the affair of the Vienna studies. This can only happen when all publications, which have been produced with the collaboration of the lab technician Elisabeth Diem/Kratochvil or with an exposure set-up that can be so easily manipulated, are withdrawn.

Nearly four years after Prof. Lerchl had unleashed the scandal and nearly three years after the publication of his booklet about the fraudsters from Vienna, it should be noted that to this day the evidence of data fraud at MUV could not been produced. Already on July 24, 2008, the MUV Council for Scientific Ethics had stated that it does not accept the statistical abnormalities challenged by Prof. Lerchl nor the knowledge of the blinding code - which was contested by the accused team member - as evidence for the fabrication of the obtained research results. Also the Austrian Agency for Research Integrity (OeAWI) to which he submits the case for decision in a sort of act of desperation- after his defeat by the MUV Council for Scientific Ethics - rejects his fraud allegations[14].

As usual, Prof. Lerchl ignores the judgment of the Council for Scientific Ethics with an argument that is so typical of him: the ethics council is either incompetent or corrupt. He also confronts the OeAWI with comparable insinuations. An important reason for why he is defending his wild fraud allegations so bitterly and aggressively may be found in the misjudgement of his own research findings, which - according to his own assessment - indicate no adverse effects of mobile communication radiation. Insofar as biological effects exist at all, in his opinion the positive ones even seem to predominate. He is mistaken in mostly disregarding the advances made in international research while attaching a completely inappropriate significance to his own modest, perhaps erroneous, results - which we will get back to later.

An author and two obliging reviewers misunderstand the nature of 'clarification'

In his booklet, Prof. Lerchl presents himself as a fearless public interest watchdog of mobile communication research. And two obliging reviewers are eager to confirm this status. Anja zur Nieden[15] (with a BSc in engineering) from the Institute of Hygiene and Environmental Health in Giessen is stunned at the possibility that two mobile phone studies from Vienna, whose data fabrication is so well documented, are not being immediately withdrawn. And in his review[16] from January 2, 2009, Stephan Schall, whose mobile communication forum we will get back to later, not only pays his respects to the unfailing determination to uncover but he also praises Prof. Lerchl as the Bremen Sherlock Holmes, who has finally put an end to this fraud, and recommends his very reasonably priced booklet. Yet all three of them, Prof. Lerchl as well as the two obliging reviewers ignore the profound difference between alleged and proven fraud, which is a legal and an accepted standard in an educated society.

The misinterpretations of his own research findings can help to understand some aspects of Prof. Lerchl's campaign. But altogether they also reveal limits of his scientific horizon and prevent that industry and government respond to new knowledge in a timely and appropriate manner. For the mobile communication industry, Prof. Lerchl has become a highly valuable instrument protecting their economic interests. For our citizens, however, the likelihood has increased that he - by means of his position - is causing irreparable harm to them.

10. A workshop of the German Research Association for Radio Applications hopes to be able to finally eliminate the MUV research results

Until the completion of the REFLEX project in 2004, the German mobile communication industry had been content with simply ignoring the MUV research findings presented at numerous national and international conferences. Any criticism, at first limited to the methodology of the experiments, started only after the publication of the study in Mutation Research in 2005. A first culmination point was achieved at the workshop on *Genotoxic Effects of Radiofrequency Fields - Lessons from the Conflicting Results*[17], which took place in Munich in 2007. It had been organized by the Research Association for Radio Applications (FGF), which represents the interests of the mobile communication industry in the scientific community.

Even back then, vehement attacks revealed that from the new research results consequences could be expected on public health policies and on the acceptance of the mobile communication technology among the public, and this was to be avoided. The emerging threat to commercial interests required a fast and permanent solution. The FGF supported the search for such a solution wherever possible, even though it could not act openly without risking damage to its reputation. In this situation, hope obviously concentrated on Prof. Lerchl, who at that time most likely might have been encouraged to proceed against the Vienna research results, and he launched his campaign. In fall 2009, a FGF workshop in cooperation with the Austrian Forum Mobilkommunikation (FMK) in Vienna was designed to assist in getting rid of the controversial research results.

Fraud accusations by Prof. Lerchl become the core theme of a scientific event

The FGF/FMK workshop called *Serious Research or "Junk Science"? Quality Standards for Scientific Work in Mobile Communication Research* took place in Vienna on November 22, 2009. The workshop presenters included Prof. Emilio Bossi, president of the committee on Scientific Integrity of the Swiss Academies of Arts and Sciences; Prof. Michael Kundi, member of the organizing committee of the BioInitiative Report; Prof. Mats-Olof Mattsson, chair of the team electromagnetic fields at the Scientific Committee on Emerging and Newly Identified Health Risks of the EU Commission (SCENIHR); as well as Prof. Alexander Lerchl, head of the Committee Non-ionizing Radiation at the SSK of the BfS. The ambitious set-up of the event and the selection of highly esteemed presenters were obviously meant to disguise the goals hinted at in the invitation. They read as follows, and we translate: One core theme will pursue the question as to how fabricated and falsified studies should be handled[18]. That this, however, was going to be the theme of the entire event could not be discerned from the announced lecture by Prof. Lerchl, who intended to speak about the SSK assessment guidelines.

Prof. Lerchl wasted no more than five minutes on the announced topic when he dedicated the remaining 20 minutes to the research results from MUV. He goes on to list all his reasons that have made him realize that the Vienna research results must be based on data fabrication. The organizers of the workshop mostly adopt Prof. Lerchl's account in their press release. Again, the fraud is presented as a proven fact. The workshop is considered a success because it was possible to demonstrate that the MUV research results must not be taken seriously when applying the assessment criteria of the SSK as well as those of other national and international agencies. The press release conveys the overall impression as if the faked Vienna studies would finally have been put to rest at the site of their origin. All of this occurs against better judgment, because at this time Prof. Lerchl's arguments had already been invalidated by the MUV Council for Scientific Ethics.

It says in the FMK's press release[19] that the workshop generally sharpened the assessment criteria dealing with good and poor science and that it in particular also clarified the dispute about forgery. While Prof. Bossi explained the criteria for scientific integrity, Prof. Lerchl specified the lack of integrity with an apt example, and we translate from the press release:

After reporting about the work of the German SSK and the classification of scientific results, Alexander Lerchl discussed the impact of controversial studies: 'An increasingly serious issue are studies that, based on faked data, claim adverse effects which cannot be reproduced in follow-up studies, but cause continuing great unrest and fear in the public because of their alarming findings. It has been demonstrated that science management shows considerable shortcomings when dealing with fabricated data.'

Reports by Prof. Adlkofer and Prof. Mosgöller, however, show how the public was misled about the course of the workshop and the current state of research.

Prof. Adlkofer's statement offers a different picture of the workshop

Prof. Adlkofer, a workshop participant, offers the following comment on the event[20] a few days later:

Title and location of the event did make clear its actual purpose. In his introduction, Emilio Bossi was to point to the disastrous effects of scientific misconduct. Subsequently, Alexander Lerchl was to talk about an especially serious fraud to the detriment of the mobile communication industry which he revealed, so to speak, single-handedly. The results obtained at the Medical University of Vienna (MUV) during the last years that point to a genotoxic potential of mobile phone radiation are, in his opinion, based on 'data fabrication'. [...]

In the following discussion I asked Emilio Bossi, if he knows any cases in which data fabrication had been claimed unjustly in order to elegantly get rid of unpleasant scientific results. He stressed that such cases happen and that they are of special meanness because from such a slander always something is remembered that even might lead to an irreparable damage of the results. Of course, someone who acts in this way must be treated the same way as the forger. […]

In the following discussion I, being a co-author of the criticized publications, confronted Alexander Lerchl with the fact that according to the 'final report' of the MUV Council for Ethics in Science there is no evidence of data fabrication and that his accusations would be solely based on suspicion. Of course, I had expected that finally he would realize his mistake and that he would apologize to the MUV research team for his excessive assault on their scientific and personal integrity. Instead, I had to experience that the assault was not

only repeated but even intensified. Obviously, Alexander Lerchl would be unable to correctly interpret the refusal of the editors to follow his ultimate request to withdraw the publications from the scientific literature. One has to wait how he would act when soon further papers are published that confirm the research results of the MUV team. To classify also these publications as 'junk science' would not be possible.

The host's question if Alexander Lerchl wants to reply to these comments remained unanswered.

Prof. Mosgöller poses the question what Prof. Lerchl wants to achieve with his vehement allegations

Prof. Mosgöller from MUV shares his impressions in a similar way[21]:

A performance of sorts was put on by Prof. Dr. Alexander Lerchl, chair of the committee on 'non-ionizing radiation' of the German Commission on Radiological Protection (SSK). He was the one who originally launched the fraud allegations against the Vienna group of scientists. The topic of his presentation was announced as a discussion of the study assessment guidelines of the German SSK. Rather disappointing - or even to be expected? - he quickly changed gears and discussed the alleged fraud at Vienna in detail. It was beyond his comprehension that the investigation he had initiated had not yet generated the desired results. The relevant scientific journals have not yet withdrawn the publications in question. The questions as to whether this might have anything to do with the fact that his fraud allegations may be unjustified or the playful question if everybody else but him were corrupt remained with the audience.

Lerchl used his allotted time in order to reinforce his fraud allegations. But anything he said about, for example, the time periods for analyzing cells, good laboratory practices, even hair-splitting sample calculations sounded far from convincing to a research specialist. And maybe he did not know yet that there had already been new studies accepted for publication that confirm the DNA breaks observed by the Vienna researchers.

To the disappointment of all those who had followed the announcement and would have liked to learn more about the study assessment guidelines of the German SSK, the presenter who had obviously been shaken by the critical questions left the event – hastily and all alone. In the audience quite a few then were left with the question as to what he wanted to achieve with the vehemence of his allegations.

11. Using a defamation-friendly forum on mobile communication radiation finally turns the campaign against the REFLEX results into mudslinging

Prof. Lerchl's campaign certainly reached its lowest level when he began to exploit the Information Centre against Mobile Communication (IZgMF) for his goals. Started as a public forum critical of mobile communication, it has now turned into a medium with a rather dubious reputation for vehemently attacking scientists, medical doctors, and citizens critical of mobile communication technologies. Any person who publicly discusses possible health risks of mobile communication radiation and expresses a dissenting opinion will have to reckon with attacks in which criticism is basically met with defamation. This practice of the forum offered Prof. Lerchl a perfect opportunity to continue his campaign against the Vienna research group at a level that would have repelled any other media with a minimal sense of fairness. Conflict communication styles not common in science showed up in this dirty forum, and industry-friendly activities could be disguised behind the empty façade of a formerly critical platform. The pull to this forum seemed to be so great for Prof. Lerchl that in May 2008, i.e. shortly after the launch of his campaign, he joined the circle of forum contributors.

Prof. Lerchl makes the allegedly fabricated data of the REFLEX project and the person of Prof. Adlkofer a core issue of the forum

Up to now, the IZgMF forum had only mentioned in passing the REFLEX project. A statement on the project's Final Report from 2004 recognizes at least the explosive effects of the results: serious cell damages; in case results from cell cultures also apply to humans the disastrous message: mobile phone radiation can cause cancer. However, it is realized, and we translate: *The mobile communication industry, therefore, can have no interest whatsoever in seeing the results of the REFLEX project enter their clients' awareness*[22]. A more intense discussion of the REFLEX project in the IZgMF only occurred when Prof. Lerchl took up this subject from mid-2008 on.

The co-operation between Prof. Lerchl and the operators of the IZgMF forum was a mutual one. For this public forum - more and more ignored by individuals because of its tendency towards defamation - it was an appreciated upgrading when a professor and leading 'radiation protector' used it for his messages to the public. Prof. Lerchl, who could no longer be fussy in his search for campaign support, did find an instrument in this forum that could be exploited for his campaign with no sense of shame. In no time, the statement that the REFLEX study of 2005 (in *Mutation Research*) and the Vienna UMTS study of 2008 (in *IAOEH*) are based on data fraud became the main theme in the forum. At the same time, Prof. Adlkofer, coordinator of the European REFLEX study, becomes the centre of attack and his mobile phone radiation research is interpreted as a lobby attempt to exonerate the tobacco industry at the expense of the mobile communication industry.

Considering the goals, it fits well that just at that time and almost as if by chance another contributor joins the IZgMF forum who is known as a fanatic tobacco opponent and who pursues Prof. Adlkofer for almost two decades now: Günther Krause from the German non-smoker initiative (NID). By his own account, he picked the alias *sektor3* for the IZgMF forum out of fear from the tobacco industry. Since then, Prof. Lerchl, *Spatenpauli*, and *sektor3* form a trio that works with different roles, but in joint action on the dismantling of Prof. Adlkofer.

In his postings *sektor3* compares Prof. Adlkofer with criminals against humanity such as Pol Pot and Idi Amin - which goes too far even for *Spatenpauli*, the webmaster of the forum, and he decides to delete the respective posting. However, there is agreement on the common goal to expose Prof. Adlkofer as fraud acting on behalf of the tobacco industry. A sweeping conspiracy theory on the background of the REFLEX project makes him the centre of a scheme the tobacco industry apparently uses to campaign against the mobile communication industry, and we translate:

It sounds almost unreal: Tobacco multinationals have researchers investigate the disease-causing consequences of mobile phone radiation, not out of their love for humanity, but to be able to present a scapegoat worldwide that is meant to distract from the disease-causing consequences of smoking. The basis for this speculation was the REFLEX study coordinated by Prof. Franz Adlkofer, and because the results were highly alarming caused quite a stir back in 2003: weak electromagnetic fields below the currently valid exposure limits can potentially cause carcinogenic effects, so it said!

The story continues under the headline: *Suspicions grow stronger*, and it is reported that investigations by *sektor3* did confirm the suspicion that both the studies of 2005 and 2008 were indeed a 'tactic of the tobacco multinationals' - at the expense of the 'truth'.

A court order puts a stop to defamation

Intoxicated by the exchange of their ideas, which under *Spatenpauli's* direction turns ever more ludicrous, the three activists increasingly lose their grip on reality.

In his posting called *Clone fraud Hwang belongs in prison*[23] on September 1, 2009, *sektor3* goes so far as to say, among other things, that Prof. Adlkofer would even outstrip the clone fraud Hwang on the fraud severity scale, and we translate:

With this level of experience, Hwang cannot keep up. Adlkofer has corrupted science for decades, bought decision makers, and nobody really pissed on him ever.

This goes too far even for Prof. Adlkofer, who until then had responded to defamation with the motto that you cannot fight wars against fools. He enlists the help of a lawyer.

Only with the reservation of a prior review as to whether the accusations made were truly unjustified, the IZgMF is willing to delete the posting. Since this apparent concession only seems to discretely continue the invectives, the case has now been decided by the Berlin regional court.

We translate the legally binding court order:

The forum posting under investigation here […], when taking the whole picture into account, obviously pursues only one goal, that is, to libel the defendant [Prof. Adlkofer] in a criminal sense by referring to the actual, completely unfounded, and therefore formally offending core message under the headline 'Experience with research fraud' while using a pseudo-objective pretext in a particularly perfidious way, stating that the defendant had 'corrupted science for decades and bought decision makers…'. […]

Thus, the entire posting represents an attempt to *deeply manipulate a reader's opinion by seriously degrading the personality* and the professional recognition of the defendant [Prof. Adlkofer] in such a manner.

Even in the forum, the conspiracy theory of tobacco vs. mobile communication industry finds a controversial echo

Most IZgMF members have adopted the theory of a great conspiracy of the tobacco vs. mobile communication industry developed by Prof. Lerchl, *Spatenpauli*, and *sektor3*, which does not surprise when considering the intellectual level of many postings in the IZgMF forum. Yet doubts about this interpretation have also been raised. The greatest opposition came from the forum member *wuff*. In his opinion, the text of the discriminating posting was not penned by *sektor3*, but Prof. Lerchl himself. In his posting called *Assault via remote-controlled missile* from September 18, 2009, one day after the deletion of the defamatory posting had been enforced by a court order, he explains his assumption as follows, and we translate:

In the deleted posting, sektor3 seemed to write in a totally different style than usual, namely, in the smooth style of a professor and at the intelligence level of a university lecturer. This caught my eye because sektor3 has been trailing me extensively in the past, and he has written in a completely different style back then. Whose posting could sektor3 have posted under his own name? Only the birds in the fields [Lerchl = Lerche = lark in English] will ever know for certain. Most likely sektor3 uploaded the posting on behalf of the person who also encouraged him to write his own postings in the first place.

Even though Prof. Lerchl and *Spatenpauli* respond to this assumption with an outcry of indignation, wuff repeats and clarifies his assumption several times and summarizes on September 28, 2009: He had recognized *with certainty beyond all reasonable doubt - based on the style, contents, and above all the level of intelligence - […], that sektor3 himself could not have written the deleted posting*. In the meantime, Prof. Adlkofer has also come to the conclusion that *wuff* is right about all three of these evaluation criteria. Another piece of evidence for Lerchl's authorship, he also sees in the fact that Dr. Hwang Woo-Suk had already starred in several of Lerchl's publications where famous fraudsters were lined up, which now also include the Vienna authors thanks to Prof. Lerchl's awareness campaign. And all of this occurred long before Prof. Lerchl exploited the naive *sektor3* for his purposes.

With this and other critical statements, *wuff* assisted in uncovering the true intentions of this strange trio. But, when he was excluded from the forum, he also had learned that the alleged freedom of expression of the open-minded IZgMF may better not violate the interests of those operating the forum.

What tobacco and mobile -phone industry have in common

The conspiracy theory of tobacco vs. mobile communication industry and the major role of Prof. Adlkofer can be called a figment of Prof. Lerchl's imagination. With the help of the IZgMF, he made the ruthless attempt to ruin Prof. Adlkofer as a scientist and as a person with the goal to exclude him from the public discourse about mobile communication radiation for good. Prof. Adlkofer stands by his role in tobacco research. From 1976 to 1992, he was secretary of the German Research Council Smoking and Health and at the same time chair of the science department of the German Tobacco Industry Association. A comprehensive documentation of the activities of the Research Council Smoking and Health, which included leading German scientists from the medical and natural sciences between 1975 and 1992, is in preparation. While sifting through the American tobacco documents, *sektor3* only looked for those quotes that after having been taken out of context would serve the purpose of distorting Prof. Adlkofer's image. It may not have been by accident that there are also other quotes that were withheld from his readership. The more detailed text of this documentation on the website of the Pandora Foundation of Independent Research shows for example an available statement[24] that contradicts all stereotypes assembled in the IZgMF forum.

Critical individuals comparing tobacco and mobile communication industry see the relationship different from what is desired by the described trio of the IZgMF forum. In putting profit above health and environment, both industries follow the same strategy. They differ, however, in persons like Prof. Lerchl, entrusted with the protection of the people in the area of radiofrequency radiation, who does not see any conflicts. *wuff* incurred Lerchl's anger apparently also because he openly stated in the aforementioned posting what this could mean for the people, and we translate:

From hindsight, in maybe 20 years when the denial of health relevant biological effects has become obsolete, the most important difference between smoke and smog will only be expressed in the number of deaths.

12. Despite of the verdict not guilty of data fraud the Vienna research results and the reputation of the responsible scientists remain damaged

In three approaches, independent of each other, the claim that the results of both the Vienna mobile phone studies have been faked has been investigated and rejected:

- In April 2009, the Council for Scientific Ethics publishes its final report [only available in German] in which the results gained through all its meetings on June 19, July 24, September 25, and November 13, 2008, are summarized. With a delay of more than nine months, the report now concludes also for the public that the asserted allegations could not be proven[25].
- In November 2010 this outcome is confirmed by the newly established Austrian Agency for Research Integrity (OeAWI).
- The editors of the two journals that published the studies have to tackle repeated demands by the professors Schütz and Lerchl to retract the allegedly faked studies. However, after a thorough investigation of the allegations they come to the conclusion that there is no reason for this step.

Yet, Prof. Lerchl criticizes with emphasis all three authorities, dealing with his allegations of fraud and not able to confirm them, for their insufficient understanding and work. He accuses the editors of the two scientific journals, who investigated and then refused the demanded retraction of the studies, of incompetence and irresponsibility. And he accuses the MUV Council for Scientific Ethics that comes to another conclusion under a replaced chair of incompetence and even corruption. He insults the OeAWI a 'research-fraud-investigation-prevention-commission' that obviously can or will not fulfil its tasks. Only the fact, that the MUV Council for Scientific Ethics under its first chair who by chance turned out to be an employee of the mobile communication industry and who was ready to quickly confirm the fraud allegations, is not contested by him.

The description and the critical appreciation of the outcome of the investigations by the MUV Council for Scientific Ethics and later on by the OeAWI are described in extensive chapters in the documentation this brochure is based on. Here, we should do with a summary of the outcome.

The Vienna team is released from fraud allegation

Translated, the critical paragraph in the final report reads like this:

However, the Council for Scientific Ethics could not produce proof that the discovered knowledge of the concerned laboratory employee on how to break the blinding of the exposure device helped to deliberately falsify or fabricate data. A falsification or fabrication of data was de-

nied several times by the concerned employee, and in this connection she was exonerated by another informant – among others with a remark regarding the proper coding of the slides and, thus, a second blinding.

This statement by the Council for Scientific Ethics finally clears the team from the suspicion of data fraud.

Also the OeAWI confirms this outcome in December 2010. In its statement on *Fall 2009/01* - the first case to be decided since its establishment - it says quite similar that the fraud allegations concerning the publications of Diem et al. 2005 and Schwarz et al. 2008 could not be verified.

Actions taken by the professors Schütz and Lerchl, however, can be explained

You might remember the statement by Prof. Bossi during the Vienna Workshop (see above) that persons who wrongfully claim fraud should receive a similar punishment as the ones who commit fraud. The exoneration of the accused Vienna team threatened the reputation of the responsible ones. Prof. Lerchl and Prof. Schütz must have appeared as slanderers who for three years did not pass up any opportunity to wrongfully damage scientific results and the reputation of their authors. For both, this would have also meant an allegation of abuse of office.

Under these circumstances and considering the imminent repercussions, both investigative committees also took over the secondary job to incriminate the Vienna scientists - just relieved from the fraud allegations - in a way that the actions taken by Prof. Schütz and Prof. Lerchl do appear quite plausible. So, we find in regard of the alleged technical assistant many - and some obviously far-fetched - 'neglects' of duty. And the OeAWI believes to have discovered such neglect also in projects carried out long ago by the Vienna team - and also projects that did not at all deal with the effects of electromagnetic fields. While the committees on one side clearly reject the fraud claimed by the professors Lerchl and Schütz, they conclude on the other side that for all publications from Prof. Rüdiger's team a limited reliability must be assumed. Prof. Lerchl, Prof. Schütz, and the mobile communication industry who had hoped for a final confirmation of their fraud allegations could certainly not be happy with the outcome of the investigations. However, the mobile communication industry could regard OeAWI's statement, that a reliable and proven state of knowledge on the genotoxic effects of electromagnetic fields has not been obtained yet, an important concession owed to the campaign of the professors Schütz and Lerchl.

With its statements on the general trustworthiness of the publications from Prof. Rüdiger's Vienna team the OeAWI did go over its assigned task which was to clarify whether fraud allegations can be proven or not. It lacked competence for the evaluation of the scientific value of the submitted results. And that genotoxic effects of mobile phone radiation have indeed already been proven by other research teams is not mentioned in the final report at all.

Recent studies confirm the genotoxic effects of mobile *phone radiation*

Not only the professors Lerchl and Schütz, but also the two investigative committees ignored how, in the meantime, their activities have been outdated by the state of research. It was research itself that carried out the by far most important rehabilitation of the Vienna results. Because in the recent past several papers have been published that prove beyond doubt the DNA-damaging potential of mobile phone radiation:

- Franzellitti et al. published in Mutation Research in October 2009 a study in which they prove that the rate of DNA strand breakage increases significantly - similar to the observations in Vienna - in isolated human trophoblasts after GSM exposure for 16 or 24 hours, respectively. No increase in the rate of DNA strand breakage can be observed when the cells are exposed exclusively to the carrier frequency of the mobile phone radiation[26].
- Only a few days later, Xu et al. followed with a publication in Brain Research in which they demonstrate the genotoxic potential of mobile phone radiation with a different method. They report that the rate of DNA adducts caused by oxygen radicals in the mitochondria of cultured neurons (nerve cells) increases significantly after a 24-hour exposure to GSM radiation[27].
- In another paper published at the beginning of 2010 in Neuroscience Letters, Campisi et al. find an increase in oxygen radicals and DNA strand breakage in primary glia cell cultures of rats after the exposure to a radiofrequency electromagnetic field (900 MHz, modulation similar to GSM). In order to demonstrate the effect, an exposure of only 20 minutes at a field strength of 10 V/m (exposure limit: 41 V/m) is sufficient. Again, the genotoxic effect remains absent when the exposure only consists of the unmodulated carrier frequency[28].

- In addition, a study published by Kesari et al. in the International Journal of Radiation Biology at the beginning of April in 2010 shows that radiofrequency electromagnetic fields (2450 MHz) also develop their genotoxic effect under in vivo conditions. In rat brain cells exposed for over 35 days at two hours each day with a whole-body SAR of approximately 0.11 W/kg, a highly significant increase in the rate of DNA strand breakage was observed[29].

- Guler et al. provide results in their also in 2010 published study with which they show that white New Zealand rabbits also respond to the exposure (15 minutes per day for 7 days) of 1800-MHz signals similar to GSM radiation (electrical field strength: 14 V/m, exposure limit: 58 V/m) with oxidative lipid and DNA damage. Once again, evidence was provided that modulated radiofrequency electromagnetic fields well below currently valid exposure limits can cause genotoxic changes in the brain of experimental animals whose whole body was exposed. Why this should be different in humans, there is no explanation[30].

- For now the latest findings that indicate DNA-damaging effects of GSM-1800-MHz signals were presented by Xu et al. at the International Meeting of the Bioelectromagnetics Society (BEMS) in Seoul, Korea, in June 2010. In two out of four different cell lines, in lung cells of Chinese hamsters and in human fibroblasts, a significant increase in DNA double-strand breaks is observed - just like in Vienna - after a 24-hour intermittent radiation exposure (5 minutes on, 10 minutes off) at an average of 3 W/kg compared to the controls. In human amnion cells only a trend toward an increase is found, and human lens cells show no response. Thus these results suggest a cell-specific effect of GSM radiation[31].

In the long run, truth in science, of which the initiators of the campaign like to talk so much in order to hide their true interests, cannot be suppressed. At least, the recent research results show how absurd their campaign is.

The 'clarification' expected with the campaign unmasks it manager

The outcome of his campaign means a lot of explaining for Prof. Lerchl. His message to the public was a different one and his promise to the mobile communication industry is different from what indeed emerged from it. The alleged unmasking of his scientific opponents as fraudsters suddenly changed to an unintentional unmasking of himself. His ignoring the progress of international research and his mockery of the decisions of two committees as well as of the editors of two scientific journals, who all rejected his claims of fraud, disqualify him as a scientist. His campaign actions against the Vienna team and their publications and his support of mobile communication industry interests that disregard mankind and nature, disqualify him also in regard of moral standards and ethics. That under such prerequisites he can cope with his tasks in the Commission on Radiological Protection (SSK) of the Federal Office for Radiation Protection (BfS) - assigned to him by the responsible politicians - can be ruled out.

The concerned persons look upon the outcome with a mixed feeling

At first sight, the scientists concerned by Prof. Lerchl's campaign observe with some satisfaction that the claims of fraud against them have been rejected in several ways. Research results from others confirmed their results. The initiator of the campaign has damaged himself with the range of his actions and has excluded himself from the community of serious scientists.

But the concerned persons cannot rejoice. Too much has happened that strongly damaged their research results and their reputation:

- The message of alleged fraud has been inscribed in every possible way in the memory of the German and international public. Its deletion will be a lengthy task that cannot be accomplished by the concerned ones alone. Here too, Prof. Bossi's statement at the Vienna Workshop is valid according to which the disgraceful act of slander assures above all that always something sticks.

- Questionable attempts to decide on the truth of science by compromise allowed slanderers to save their faces but at the same time allowed also doubts on the qualification of the involved. To stay on the safe side, the replication or refutation of the disputed results in a progressing research was not even requested.

- The concerned persons had to suffer for years under a shameless slandering campaign. And they also had to observe that the goals and the actions of the campaign had a positive effect

on the career of its initiator and most important manager - which leads to further questions.

The question of career, scientific qualification, and social impact of a leading radiation protection 'expert'

Fraud allegations as in the case of the Vienna studies are not an isolated incident. Louis Slesin, the editor of *Microwave News*, reports on the unchallenged assumption that Prof. Lerchl owes his career first and foremost to his demand to bring Prof. Rüdiger of MUV to account for his scientific misconduct[32]. That this misconduct could not be verified does not faze Lerchl. Slesin counts this case among the innumerable attempts of the mobile communication industry to use their middlemen in science to publicly accuse researchers, whose findings interfere with their interests, of scientific misconduct. But Slesin also demands that the conduct of these industry-controlled scientists be scrutinized and punished according to the same guidelines that apply to any other scientist without such a background. With great concern, he raises the question: "Why doesn't anyone speak out against the corruption in our midst?"

Dealing exactly with this topic, our intention is first of all the protection of scientific results and their authors against industry-compliant scientists. But too and above all, our intention is an up-to-date protection of the people. In the history of science there seem to be not many examples as the REFLEX project where someone tried in a comparable fanatic haste and with similar doubtful actions to have the results of scientific publications proven a fake. Would Prof. Lerchl, initiator of the slandering campaign, only be a biologist at the private Jacobs University Bremen we could take it as one of the not so rare examples of a misguided scientific activity, compromising limited competence in the field and serving commercial interests. But Prof. Lerchl played a decisive role in the German Mobile Telecommunication Research Programme (DMF). Based on his active participation he has, in the meantime, been appointed head of the Committee Non-Ionizing Radiation in the SSK of the BfS now for a second term. As such he is the highest-ranking adviser of the German government for the biological effects of electromagnetic fields. All this makes his already known deficits in scientific and ethical competence and his misunderstanding of radiation protection a risk for the health and the environment of 80 millions Germans.

In the next article we ask the question to which scientific achievements Prof. Lerchl owes his influential position and - based on this - how his activities affect our health and environmental protection.

References

1) http://www.pandora-foundation.eu/documents/ruthless-attacks-on-scientific-results.html

2) Diem E, Schwarz C, Adlkofer F, Jahn O, Rüdiger HW (2005) Non-thermal DNA breakage by mobile phone radiation (1800 MHz) in human fibroblasts and transformed GFSH-R17 rat granulosa cells in vitro. Mutat Res 583:178-83.

3) REFLEX - Risk evaluation of potential environmental hazards from low energy electromagnetic field exposure using sensitive in vitro methods (QLK4-CT-1999 -01574). Funded within the 5th Framework Programme of the European Union

4) Schwarz C, Kratochvil E, Pilger A, Kuster N, Adlkofer F, Rüdiger HW (2008) Radiofrequency electromagnetic fields (UMTS, 1,950 MHz) induce genotoxic effects in vitro in human fibroblasts but not in lymphocytes. Int Arch Occup Environ Health 81(6):755-67.

5) Goebel T (2008) Strahlenschmutz [Dirty radiation]. Profil 27/08. http://www.news.at/articles/0826/560/210769.shtml?print.

6) Medical University of Vienna (2008) Suspicion of an erroneous study by the former Division of Occupational Medicine. http://www.meduniwien.ac.at/homepage/news-und-topstries/en/?tx_ttnews%5Btt_news%5D=204%20&cHash=f 9dc8746ac

7) Adlkofer F & Rüdiger HW (2008) Stellungnahme zur Presse-Aussendung des Rektors der Medizinischen Universität Wien betreffend „Verdacht auf fehlerhafte Studie in der ehemaligen Abteilung für Arbeitsmedizin [Comment on press release of rector of the Medical University of Vienna regarding "Suspicion of an erroneous study by the former Division of Occupational Medicine"]. Per e-mail to Austria Press Agency on May 25, 2008

8) Medizinische Universität Wien (2008) Protokoll über die 5. Sitzung des Rates für Wissenschaftsethik am 24.7.2008 [Minutes of the 5th meeting of the Council for Scientific Ethics on July 24, 2008]. Strangely enough, under: http://www.laborjournal.de/editorials/ed425/Protokoll_24_7_08.pdf

9) Medical University of Vienna (2008) Prof. Hugo Rüdiger withdraws incorrect study about mobile phone radiation. http://www.meduniwien.ac.at/homepage/news-und-topstories/en/?tx_ttnews%5Btt_news%5D=231&cHash=7%20efbd60593

10) Dworschak M (2008) Beim Tricksen ertappt [Caught at foul play]. Der Spiegel 22:149. http://www.SPIEGEL.de/SPIEGEL/print/d-57119391.html.

11) Dworschak M (2008) Die Favoritin des Professors [The professor's favourite]. Der Spiegel 35:148-50. http://tinyurl.com/68zh9un

12) Goebel T (24.11.2008) Rufunterdrückung: Das Sittenbild hinter den angeblich gefälschten Handystudien [Reputation suppression: The morality behind the allegedly fabricated mobile phone studies]. *profil* online. http://www.profil.at/articles/0847/560/226363/rufunterdrueckung-das-sittenbild-handystudien.

13) Lerchl A (2008) Fälscher im Labor und ihre Helfer [Fraudsters in the lab and their helpers]. Books on Demand GmbH. ISBN-13: 9783837063417.

14) Österreichische Agentur für Wissenschaftliche Integrität (23.11.2010) Stellungnahme der Kommission für Wissenschaftliche Integrität zum Fall 2009/1 [Statement of the Commission for Research Integrity on Case 2009/01]. http://www.oeawi.at/downloads/Stellungnahme-der-Kommission-20101126.pdf

15) zur Nieden A (2009) Rezensionen: Fälscher im Labor und ihre Helfer [Reviews: Fraudsters in the lab and their helpers]. Umweltmed Forsch Prax 14 (1):38. http://www.ecomed-medizin.de/sj/ufp/Pdf/aId/10787

16) Schall S (02.01.2009) Kein Waschpulver für die weiße Weste von Weißkitteln. Kundenrezension. [No laundry powder for the the clean slate of white coats. Client review]. http://www.amazon.de/F%C3%A4lscher-Labor-ihre-Helfer-Mobilfunk-Studien/dp/3837063410/ref=sr_1_1?ie=UTF8&s=books&qid=1278674941&sr=1-1

17) Haberland L (2006) Genotoxische Effekte hochfrequenter Felder - Lektionen aus den widersprüchlichen Ergebnissen [Genotoxic effects of RF radiation – Lessons from conflicting results]. NEWSletter 4:6-8. http://www.fgf.de/publikationen/newsletter/einzeln/NL_07-02/Genotoxische_Effekte_hochfrequenter_Felder_02-07d.pdf

18) Forum Mobilkommunikation & Forschungsgemeinschaft Funk e.V. (22.09.2009) Einladung: Handy & Co. Seriöse Forschung oder „Junk Science"? [Invitation: Mobile phone & Co. - Serious research or "junk science"?] http://www.fgf.de/forschungsprojekte/berichte/workshops/hintergrund/Einladung-JunkscienceWien_090901.pdf

19) Forum Mobilkommunikation (23.09.2010) FGF/FMK-Workshop, Wien: Seriöse Forschung oder „Junk Science"? Presseaussendung. [FGF/FMK Workshop, Vienna: Serious research or "junk science"? Press release]. http://www.fmk.at/Medien/FMK-Presseaussendungen/2009/FGF/FMK-Workshop-in-Wien--Seriose-Forschung-oder--Junk

20) Adlkofer F (2009) Qualitätsstandards wissenschaftlichen Arbeitens in der Mobilfunkforschung [Quality standards of scientific work in mobile radiation research]. In: Unverantwortliche Fälschungen oder unverantwortliche Fälschungsvorwürfe? [Irresponsible fraud or irresponsible fraud allegations]:4-5. http://www.verum-foundation.de/eu-projekte/reflex.html (Statement on Vienna Workshop)

21) Mosgöller W (2009) Eine Veranstaltung mit kuriosem Einschlag [An event with a peculiar touch]. In: Unverantwortliche Fälschungen oder unverantwortliche Fälschungsvorwürfe? [[Irresponsible fraud or irresponsible fraud allegations]:6. http://www.verum-foundation.de/eu-projekte/reflex.html (Statement on Vienna Workshop).

22) IzgMF Meldungen (2004) Forschungsprojekt REFLEX im Strudel wirtschaftlicher Interessen. http://www.izgmf.de/Aktionen/Meldungen/Archiv_04/Reflex-Abschlussbericht/reflex-abschlussbericht.html

23) IZgMF Forum (01.09.2009) Beitrag von *sektor3* [Posting from *sektor 3*]. http://www.izgmf.de/Aktionen/Meldungen/Archiv_10/Adlkofer_vs_IZGMF/adlkofer_vs_izgmf.html (deleted after court order)

24) Landman A (no date) A voice of honesty. http://tobaccodocuments.org/landman/186856.html

25) Medizinische Universität Wien (2008) Endbericht des Rates für Wissenschaftsethik der Medizinischen Universität Wien betreffend Publikationen über erbgutschädigende Wirkungen von Mobilfunkstrahlungen (Causa Alexander Lerchl gegen Elisabeth Diem/Kratochvil et al.) [Final report of the Council for Scientific Ethics of the Medical University of Vienna regarding publications on DNA-damaging effects of mobile phone radia-

tion (Alexander Lerchl vs. Elisabeth Diem/ Kratochvil et al.)]. Strangely enough, under: http://www.izgmf.de/ endbericht_wien.pdf

26) Franzellitti S, Valbonesi P, Ciancagli N, Biondi C, Contin A, Bersani F, Fabbri E (2009) Transient DNA damage induced by high frequency electromagnetic fields (GSM 1.8 GHz) in the human trophoblast HTR-8/SVneo cell line evaluated with the alkaline Comet assay. Mutat Res 682(1-2):35-42.

27) Xu S, Zhou Z, Zhang L, Yu Z, Zhang W, Wang Y, Wang X, Li M, Chen Y, Chen C, He M, Zhang G, Zhong M (2009) Exposure to 1800 MHz radiofrequency radiation induced oxidative damage to mitochondrial DNA in primary cultured neurons. Brain Res 1311:189-96.

28) Campisi A, Gulino M, Acquaviva R, Bellia P, Raciti G, Grasso R, Musumeci F, Vanella A, Triglia A (2010) Reactive oxygen species levels and DNA fragmentation on astrocytes in primary culture after acute exposure to low intensity microwave electromagnetic field. Neurosci Lett 473 (1):52-5.

29) Kesari KK, Behari J, Kumar S (2010) Mutagenic response of 2.45 GHz radiation exposure on rat brain. Int J Radiat Biol 86 (4):224-43.

30) Guler G, Tomruk A, Ozgur E, Seyhan N (2010) The effect of radiofrequency radiation on DNA and lipid damage in non-pregnant rabbits and their newborns. Gen Physiol Biophys 29(1):59-66.

31) Xu S, Zeng Q, Zhang D, Chiang H, Leszczynski D, Xu Z (2010) The effect of 1800 MHz GSM mobile phone radiation on cellular DNA stability. Bioelectromagnetics Society Annual Meeting; June 14-18, 2010; Seoul. Abstract Collection:9-3.

32) Slesin L (2009) Corruption in our midst. Microwave News XXIX(10):7. http:// www.microwavenews.com/docs/ RealJunkScience.pdf

Part II

Scientific flaws in the German Telecommunication Research Programme

Franz Adlkofer

1. A German career in the area of mobile communication radiation

His academic life took Prof. Alexander Lerchl from the universities of Münster, Karlsruhe, and Wuppertal in 2001 to the private Jacobs University in Bremen, where his career as mobile communication radiation researcher and head of the Committee Non-ionizing Radiation - thus an adviser of the German government - started. As far as Prof. Lerchl had to do with biological effects of electromagnetic fields before his appointment in Bremen, we find him on that side of research which came to quite alarming results. Between 1999 and 2001 he belongs to a team that discovers that radiofrequency radiation influences the growth of young conifers and corn seedlings. The research results are presented at the Bioelectromagnetics Society (BEMS) Conference in Munich in 2000. While Prof. Lerchl suggests a stress phenomenon behind the significantly increased death rate of the conifers[1], he offers no explanation why at the same time pulsed radiofrequency electromagnetic fields (383 MHz and 900 MHz) significantly increase the growth of corn seedlings[2]. In another study presented in Munich, he observed in Djungarian hamsters, exposed to continuous radiofrequency electromagnetic fields (900 MHz and 1800 MHz) for more than 60 days with a special absorption rate (SAR) of 80 mW/kg a significantly increased proliferation [cell increase] of testicle tissue[3]. All his results point to a non-thermal effect of radiofrequency radiation, the existence of which Prof. Lerchl denies today.

From all these studies we can find no papers published in scientific journals that describe the methods and the results in such a detailed way that the significance can be rated. Therefore, the public funding the team received for the plant studies must be regarded as wasted. The funds for the dwarf hamster study came from the German Research Association for Radio Applications (FGF) and, thus, from the mobile communication industry. The early relationship with this industry quite obviously convinced Prof. Lerchl that a publication hinting at adverse biological effects of radiofrequency radiation would not be beneficial for the career he was striving for.

Signs of a conspicuous changeover

So, already the beginning of Prof. Lerchl's research activity is marked by a complete changeover. Within one decade, he becomes a reliable guarantor for all-clear messages regarding the effects of electromagnetic fields. According to him the observance of the exposure limits, the reliability of which he does not doubt, fully meet the requirements. While other researchers, for example, come to the conclusion that UMTS radiation might be biologically far more alarming, he assures its special positive effect[4]. Even when official letters remind him of his earlier assumptions that radiofrequency radiation has adverse effects on plant seedlings, he explains the data today with 'water stress' and 'lack of nutrients' resulting from the radiation's thermal effect[5]. His interpretation, which cannot be verified as the results have nowhere been published in due form, runs on smoothly to his research project in the frame of the German Mobile Telecommunication Research Programme (DMF). With his studies on dwarf hamsters and mice, Prof. Lerchl believes that he can prove the harmlessness of radiofrequency radiation and the reliability of the valid exposure limits. At least we find now - not as before - papers that give a detailed insight in his work as a researcher. This allows us to check the value of his 'critical reasoning' which he summarizes in his booklet *Macht Mobilfunk krank? Daten, Fakten, Hintergründe [Do*es mobile communication radiation make us sick?

Data, facts, background] from 2007, and we translate:

Altogether the results of the scientific studies prove that up to now there is no suspicion of a causal link between the mobile communication radiation within the legal exposure limits and health damages, neither in cell and animal experiments nor based on epidemiological studies.[6]

Appointment as head of the Committee Non-ionizing Radiation of the German Commission on Radiological Protection

At the former International University Bremen, now Jacobs University, Prof. Lerchl participates between 2002 and 2008 in the DMF with altogether five separate studies. There seems to be no other participant who received a similar generous funding. His research results gathered with high effort, but evidently little scientific expertise did contribute decisively to the known all-clear messages of the DMF. Because Prof. Lerchl finished each of his studies with the insistent statement that there are no biological effects of radiofrequency radiation below the valid exposure limits and that most probably people's health is not endangered as long as the exposure limits are observed. Although he knows that one cannot transfer results from mice and dwarf hamsters to humans just like that, he ignores any thoughts of this kind in his conclusions.

Due to Prof. Lerchl's alleged protection of the people by protecting the exposure limits, the government, however, rewards him with the highest position it can offer in the area of radiation protection against electromagnetic fields. In the beginning of 2009, Prof. Lerchl is appointed head of the Committee Non-Ionizing Radiation in the Commission on Radiological Protection (SSK) of the Federal Office for Radiation Protection (BfS) by the German Federal Ministry for the Environment (BMU) - the peak of his career so far. His scientific and ethical excellence, in which the political authorities obviously believe, and further merits in the meantime as head of the SSK committee finally brought the BMU to extend Prof. Lerchl's appointment for two more years until the end of 2012.

Doubt about the statements on independence

Positions of this kind first of all demand independence, and Prof. Lerchl does emphasize this for his person again and again. But already quite early he is confronted with the criticism that this independence does only exist in his imagination. Discussing such allegations in an interview with the *Laborjournal* from August 4, 2008, he attests that he had always avoided 'direct research assignments' from the mobile communication industry. He specifies, and we translate:

My research is funded by the Federal Office for Radiation Protection (BfS, Salzgitter) in the frame of the German Mobile Telecommunication Research Programme and by the German Research Association for Radio Applications (FGF, Bonn). In addition, I give lectures at specialist conferences for which I receive the usual allowance.[7]

In this odd justification of his independence the fact remains unmentioned how often Prof. Lerchl is offering his services to the German information centre for mobile communication (IZMF), the lobby group of this industry; not mentioned is also the close relationship between his university and Vodafone; unexplained finally the fact that the FGF is the scientific service sector of the mobile communication industry. A comment in the journal *Umweltmedizin in Forschung und Praxis* [Research and practice in environmental medicine] by the professors Drexler and Schaller, editors of the *International Archives of Occupational and Environmental Health*, defends the right of scientists to accept funds from the 'directly involved industry' especially for relevant topics in occupational and environmental medicine as this certainly does not make 'objective research' impossible. The 'potential conflict of interests, however, has to be openly discussed', and they do not believe this to be Lerchl's strength. We translate:

A bad feeling comes up when Prof. Lerchl states: For this reason I did and I do avoid direct research assignments from this side (that is the mobile communication industry). My research is funded by the Federal Office for Radiation Protection and the German Research Association for Radio Applications (FGF) in Bonn.

Under www.fgf.de we find the following Board members: Karl-Wilhelm Siebert (Chair), Vodafone D2 GmbH; Dr. Fritz Lauer, T-Mobile Deutschland GmbH; Dr. Karsten Menzel, E-plus Mobilfunk GmbH & Co KG; Herbert Tillmann, Bayerischer Rundfunk; Matthias Meier, Motorola GmbH; Christer Törnevik, Ericsson GmbH; Luo Shudong, Huawei; Albrecht Gundlach, Bundesministerium für Wirtschaft und Technologie. Direct representatives: Dr. Michael Schüller, Vodafone D2 GmbH; Joe Wiart, France Telekom; Dieter Vorbeck, O2 Germany GmbH & Co. OHG; Helwin Lesch, Bayerischer Rundfunk; Reinhard Wählen, Motorola GmbH; Slavko Kutija, Ericsson GmbH; Mag. Maximilian Maier, Forum Mobilkommunikation; Dieter Garvert, Bundesministerium für Wirtschaft und Technologie.[8]

Given such a presence of mobile communication providers in the FGF Board, it needs some skills in interpretation to declare funding from that side the basis of independent research. The following facts speak even more clearly for the close relationship between Prof. Lerchl and the mobile communication industry. Now and then, he jointly voiced his opinion with other members of the SSK that it would be the best to stop research for biological effects of mobile communication radiation as the harmlessness has been sufficiently proven and further research would only irritate the people. No employee of the mobile communication industry could have served the interests of his employer better than with this remark, which makes a mockery of the state of the scientific knowledge.

On top of that, Prof. Lerchl did carry out his extensive four-year slandering campaign against the REFLEX study in Germany and Austria in compliance with and with the full support of the mobile communication industry. All defeats he suffered in this dispute did not prevent him from constant new attacks. Of course, we cannot rule out that even scientists at some point lose their common sense. In the presented case, however, evidence seems to indicate that Prof. Lerchl gave in to the industry's insistence and willingly became its tool. In the meantime, even the International Agency for Research on Cancer (IARC) of the WHO - not at all opponents of the industry - does not believe in Prof. Lerchl's status of an independent scientist.

Questions regarding Prof. Lerchl's participation in the DMF

Prof. Lerchl's outstanding participation in the DMF with altogether five research projects mark the start of his career as a scientist. Other scientists who also participated in the Programme, however, seem to have doubts about the results of his research projects, which he published in the meantime[9]. They noticed that Prof. Lerchl concluded each of his studies with explicit statements on harmlessness and stereotyped confirmations of the exposure limits. But it is quite obvious that such attestations did not derive from his research approach nor from his obtained research results.

Prof. Lerchl's known contacts to industry and the observed concurrence of his scientific ideas with the ones of the industry give such doubts a fundamental significance. The question arises whether his partiality did have an effect on his research work in the frame of the DMF. If it did, the scientific qualification expected from him by the state authorities would be refuted once and for all and, thus, his involvement in the SSK to protect the people would no longer be justified.

Considering these questions, the Board of the Competence Initiative asked me to review several of Prof. Lerchl's contributions to the DMF. This initiative of independent scientists, physicians, and environmental groups believes that I am especially qualified to carry out such a review, because already since 1995 I work on the possible biological effects of mobile communication radiation and between 2000 and 2004 I coordinated the EU-funded REFLEX project, the results of which have been confirmed several times by now.

2. Why the DMF research project on the melatonin hypothesis disqualifies its author. The outcome of my first review

Request for a review

On June 8, 2010, the Board of the Competence Initiative requested a first review on a research project that Prof. Lerchl carried out within the frame of the DMF:

Dear Mr. Adlkofer!

As far as could be ascertained from the German article Bremen Biologist Does Cell Phone Radiation Research in the Weser-Kurier from June 4, 2010, Prof. Alexander Lerchl is to be granted 600,000 Euros by the Federal Office for Radiation Protection for research on rats. The subheading of the article specifies the research assignment: Rat behavioural study at Jacobs University shall provide information about potential health effects.

The newspaper article says the following about Lerchl's intentions: Over the past years, the biologist Alexander Lerchl has studied the effects of mobile phone radiation on mice and, by his own account, could not observe any increased morbidity. For final answers to the question of potential risks associated with mobile phone use, however, it is still too early, he emphasizes - the technology is simply too young. The article adds that Lerchl understands his new project as a contribution to the 'precautionary approach', especially with regard to children and youth.

What Prof. Lerchl's projects with a 'precautionary approach' look like in reality, however, is revealed in his contributions to the German Mobile Telecommunication Research Programme (DMF). Dr. Peter Neitzke, who himself has been involved in the Programme, criticizes: in contrast to the other researchers participating in the DMF, Lerchl has used each single project under his own leadership rather improperly to state that there is no reason to lower the exposure limits. Neitzke illustrates his criticism with an example of Lerchl's study about the 'melatonin hypothesis'. With experiments on isolated pineal glands of dwarf hamsters, Lerchl comes to the overall conclusion that the 'melatonin hypothesis' is 'not supported' by the project results and that the findings provide no 'basis for a recommendation to lower' the exposure limits. In Neitzke's opinion the peak of his downplaying arguments is reached, when individual results are even supposed to suggest a beneficial health effect (P. Neitzke in: EMF-Monitor 14, No. 3, June 2008). There is no lack of similar criticism by other scientists. In another statement we received, for example, Prof. Klaus Buchner criticizes very basic errors in methodology and a completely inappropriate conclusion in Lerchl's melatonin study. His overall assessment: An amateurish attempt to achieve a predetermined result.

Prof. Lerchl has been offered ample opportunities within the DMF as no other scientist. Ever since leading radiation protection officials like to assure us that no further research is needed because cell phone radiation has been proven harmless as long as the current exposure limits are met. Why is this - rather alien to science – statement now ignored in the case of Prof. Lerchl? Do government and/or industry again invest generously into his research because he very reliably answers questions regarding risks in line with their own thinking?

Based on our observations of the DMF and beyond, we have every reason to be alarmed that Prof. Lerchl will stick to his ways of not finding anything, giving all-clear messages, and certainly confirming existent exposure limits — also with the new study.

Not only as scientists and physicians, but also as citizens and taxpayers would we like to ask the political leaders why again and again new tax money is invested in a 'radiation protection' that meets the industry's and politicians' needs, but does not help protecting the public. But before we are going public with this issue, we would first like to request an expert's opinion from you, dear Mr. Adlkofer, who answers the following two questions:

How do you evaluate the results of Prof. Lerchl's melatonin project within the framework of the DMF?

From your perspective, how are the scientific as well as the ethical qualification of Prof. Lerchl to be assessed?

We forward this request to you not just because we generally value you as one of the known and courageous cell phone researchers. We also forward this request to you because - as a specialist for internal medicine with a focus on endocrinology - we find you specifically qualified to answer the raised questions.

Sincerely,
The Board of the Competence Initiative:
Prof. Karl Richter, Dr. med. Kern, Uwe Dinger, Barbara Dohmen, Prof. Karl Hecht

In the beginning of July 2010 my review was published on the website of the Pandora Foundation for Independent Research[10] and a copy was sent to the BMU. The following description offers a shorter version of the outcome.

Topic of the first review

My first review deals with Prof. Lerchls DMF contribution: *Investigation of mechanisms of action in cells exposed to the high frequency electromagnetic fields of mobile telephone technology. B. pineal gland*

The pineal gland, whose size varies greatly among mammals, is located in the diencephalons. This gland produces melatonin whose synthesis is controlled by the circadian clock of the suprachiasmatic nucleus. Melatonin synthesis and its pulsatile release occur at night and are responsible for the deep sleep cycle. Melatonin is a neurohormone, which is responsible for the circadian-rhythm processes in the body. The large number of mechanisms through which it modulates the physiology and molecular biology is striking. Many, but not all of these actions are mediated by melatonin receptors. Intracellular processes are also impacted by the capacity of melatonin to trap free oxygen radicals before they can exert their harmful effects. Overall, melatonin plays an important role in the maintenance of the physiological functioning of cells and organs. A lack of melatonin, therefore, is to be expected to cause adverse effects on human health.

Prof. Lerchl's final report within the DMF

The melatonin hypothesis is supposed to explain sleep disorders as well as other disorders of humans exposed to electromagnetic radiation from base stations. While a suppression of the melatonin synthesis by mobile communication radiation would confirm the hypothesis, an increased formation and release of melatonin would speak against it and against an effect of the radiation, too. In his study Prof. Lerchl wanted to prove, if the assumption of a causal link can be supported or refuted with results from his animal experiments.

In order to test the hypothesis, Prof. Lerchl exposed isolated pineal glands from sacrificed dwarf hamsters to radiofrequency electromagnetic fields of increasing intensity. He regarded the isolation of the pineal glands necessary to rule out the possibility that the circadian rhythm of the melatonin production interferes with possible biological effects of the mobile communication radiation.

The two most important results of the project are summarized in his final report[11] like this:

- The data do not support the 'melatonin hypothesis' according to which a decreased melatonin production was expected after a non-thermal exposure to electromagnetic fields.
- In regard of the currently valid exposure limits (whole-body exposure) the described results provide no reason to recommend a lowering.

The outcome of my critical review

My criticism aims at the scientific approach and the way the project has been carried out as well as the conclusions drawn from the results. The difference of the biological systems of humans and dwarf hamsters is not taken into account. But first of all, the study on isolated pineal glands does not consider basic biological dependencies in organization and function:

- Under physiological conditions, the melatonin synthesis in the pineal organ is controlled by several steering centres outside the location of its production. The study on isolated pineal glands ignores the dependence of melatonin synthesis on these regulatory mechanisms. Without considering the entire regulatory system as a whole, however, the question as to whether electromagnetic fields affect melatonin synthesis and, thus, prove or disprove the melatonin hypothesis cannot be answered. This fact alone is sufficient to show that the design of Prof. Lerchl's study is to be regarded as flawed and its result as meaningless. The assumption that the coupling to the circadian rhythm can only be stopped by the above-described method is not true. The decoupling of the circadian rhythm could also be achieved by creating suitable conditions in the keeping of the animals.

- This first scientific mistake is compounded by a second one which consists in the fact that due to its central location within the human brain the exposure of the pineal gland to mobile communication radiation is very low. It is conceivable that during the use of a mobile phone a SAR value of 8 mW/kg may be reached in the pineal gland, e.g., around a two-hundred-fiftieth or perhaps even a slightly higher portion of the partial body limit of 2 W/kg. However, we can rule out that such an exposure level is achieved when humans are exposed to base station radiation as long as the whole-body limit of 80 mW/kg is not exceeded. Yet, the actual exposure on the outside body is generally much less than 10% of this value. Pro-

vided that the research approach altogether allows for conclusions, they should therefore be limited to the results obtained with 8 mW/kg.

- The entire final report shows the intention to give a new interpretation to the - on the basis of the available scientific literature - assumed adverse effects of radiofrequency radiation on humans.

- It shows even more, as Prof. Lerchl's own study results speak more in favour of the melatonin hypothesis and, thus, for the existence of non-thermal effects of mobile communication radiation than against it. Absolutely bizarre is Prof. Lerchl's conclusion that his results provide no basis for a recommendation to lower the currently valid exposure limits for whole-body exposure. Because his statement contravenes the radiation effects documented both at SAR levels of 8 mW/kg as well as 800 mW/kg, the opposite is more likely.

- My criticism of Prof. Lerchl's claim, however, is based on rather different considerations, namely that the results of the research project altogether do not allow for direct extrapolation to humans exposed to mobile communication radiation: (1) because the pineal gland in humans differs in its function most probably from the one in dwarf hamsters, (2) because the study results of isolated pineal glands disregard the overriding steering system of synthesis and secretion, and (3) because the pineal gland due to its relatively low radiation exposure is pretty much the most unsuitable organ with which the reliability of exposure limits should be verified.

- With the attempt to refute the melatonin hypothesis, Prof. Lerchl undoubtedly pursues a fundamental interest that appears to coincide with that of the industry. Thus, he intends to rule out that people who, according to their own reports, suffer from sleep disorders because of electromagnetic fields may have the opportunity to ascribe their symptoms to mobile communication radiation. From his point of view, these and similar phenomena summarized under the term 'electrosensitivity' unnecessarily contribute to uncertainty among the public. Since melatonin, being a radical scavenger, is suggested to protect from tumour development or at least to be able to slow down such a development, which Prof. Lerchl also refers to, overall adverse health effects would have to be expected in the case of a suppression of melatonin production. Since Prof. Lerchl, however, has allegedly observed only an increase in melatonin synthesis, he even suggests, on the basis of his rather useless results, a positive effect of mobile communication radiation on this hormone system - and this is perhaps no coincidence.

In summary it can be stated:

Prof. Lerchl's research project, the approach of which - very obvious to any expert in this research area - could not the least contribute to the clarification of the given issue, is about the inept attempt to rule out doubt about the exposure limits and to refute the melatonin hypothesis.

Prof. Lerchl's paper in a scientific journal and a SSK comment on the results

Independently from the final report within the DMF, Prof. Lerchl also published his research results in the *Journal of Pineal Research*.[12] Again the description of the results reveals an unbridled fantasy and give even more free rein to speculation. And more clearly we recognize the goal to serve the industry and the state authorities that entrusted him with the study. The SSK's enthusiasm regarding the evaluation of the research results was rather limited when it admitted that it must remain open 'to what extent the results obtained from isolated hamster organs can be transferred to humans'. But finally it agrees with Prof. Lerchl that 'overall, these results have not confirmed the melatonin hypothesis'.[13]

De facto, the BfS and the SSK are both content with Prof. Lerchl's contribution to the DMF, although the invested funds did not even advance the dwarf hamster research.

But we are surprised that the BfS did provide the necessary funds for such a questionable project and that obviously no ethics commission questioned the killing of about 500 or 320 dwarf hamsters - numbers in the report vary. And only with sarcasm we must note:

Prof. Lerchl's motto that he uses to condemn research results he disapproves is: "An esoteric can tell more nonsense in only five minutes than a scientist can refute in his entire life (Vince Ebert)". That he outed himself as an esoteric, who has moved far beyond of what can be established on the basis of his results, must have escaped him as well as the reviewers from the *Journal of Pineal Research* who accepted his work for publication.

My reply to the Competence Initiative

The questions of the Competence Initiative

How do you evaluate the results of Prof. Lerchl's melatonin project within the framework of the DMF?

From your perspective, how are the scientific as well as the ethical qualification of Prof. Lerchl to be assessed?

can be answered as follows:

The results of the above research project lack any connection to reality. Since the overriding regulatory system that controls the secretion of melatonin is not included, the melatonin hypothesis can neither be confirmed nor refuted on the basis of the research approach. That one cannot compare the function of the pineal gland in dwarf hamsters with the one in humans, for which their different circadian rhythm is a strong indicator, is indeed mentioned but not appreciated. These facts alone are sufficient to realize that already the study design of Prof. Lerchl's research project is flawed, the execution must be considered questionable, and the results are meaningless. In addition, it becomes clear that the killing of 500 dwarf hamsters - or only 320 as indicated in subsequent papers - even violates the Animal Protection Act.

An imposition of a special kind is Prof. Lerchl's very individual interpretation of his research results. It shows him as a scientist who wants to enforce conclusions seemingly important for him by ignoring and/or reinterpreting results, no matter if they actually correspond with the obtained results or not. Should Prof. Lerchl be indeed convinced of the reliability of his results and the correctness of their interpretation, would this raise doubts about his qualifications as a scientist. As a consequence, one might classify him as an esoteric according to his above-quoted motto. The presented case reached certainly a scientific-ethical dimension, if one would have to assume that Prof. Lerchl has been fully aware of the consequences of his – in my view - irresponsible handling of the matter. Ethically questionable would it also be, if Prof. Lerchl should again be appointed chairperson of the Committee Non-ionizing Radiation of the SSK by the state authorities, despite of his scientific and/or scientific-ethical shortcomings. The study can serve as further evidence of the poor state of mobile communication research. This state is the result of an industry-controlled accommodation research that has been ongoing for decades and of which Prof. Lerchl is only one more striking example.

3. Why the study on the development of leukaemia through radiofrequency electromagnetic fields moves closer to fraud. The outcome of my second review

My letter to the BMU, in which I pointed to the consequences of an public information policy on the basis of Prof. Lerchl's research results, was answered with a bureaucratic letter free of any arguments. A ministry official defended Prof. Lerchl's results as a 'substantial addition to the other sections of the Research Programme'. Now, to the doubts on Prof. Lerchl's competence and his professional qualification for a managerial post in German radiation protection doubts have been added too on the professional competence of the ministry. This made the Competence Initiative decide to ask me once again for a review on two more studies Prof. Lerchl carried out within the frame of the DMF.

Request for a review

Dated October 23, 2010, I received the following letter from the Competence Initiative

Dear Mr. Adlkofer!

our scientists, physicians, and jurists regard the outcome of your analysis of the melatonin study that Prof. Lerchl contributed to the German Telecommunication Research Programme as sobering, if not horrifying. The same goes for the favourable reaction from the Ministry of the Environment that still does not seem to doubt Prof. Lerchl's qualification for his current managerial post. To see that this is the class in science and political advice, to whom health and environment in Germany have been handed over, will confront us with hard times in the future. That the taxpayer even has to pay for this, carries the cynicism in dealing with our people too far.

For colleagues that have followed Prof. Lerchl's activities for quite a while your findings do not come unexpectedly. But to be fair, we currently cannot rule out that the combination of a poor scientific study design with an opportunism obliged to industry might have been a single event, which is not altogether representative for the scientist from Bremen. To ascertain this, a further clarification in another area is urgently needed.

During a recent meeting in Stockholm an ICNIRP representative judged also Prof. Lerchl's research as evidence that speaks against a carcinogenic potential of the mobile communication radiation. It concerns the following publications, both resulting from the DMF:

Sommer AM, Streckert J, Bitz AK, Hansen VW, Lerchl A: No effect of GSM-modulated 900 MHz electromagnetic fields on survival rate and spontaneous development of lymphoma in female AKR/J mice. BMC Cancer 2004, 4:77.

Sommer AM, Bitz AK, Streckert J, Hansen VW, Lerchl A: Lymphoma development in mice chronically exposed to UMTS-modulated radiofrequency electromagnetic fields. Radiat Res 2007, 168:72-80.

May we ask your, dear Mr. Adlkofer, to also review if these two studies stand up to criticism?

Since long, leading scientists from our initiative have received increasing confirmation that Prof. Lerchl is neither scientifically nor ethically qualified for his managerial post in the Commission on Radiological Protection of the Federal Office for Radiation Protection. Should this also be confirmed with the above mentioned studies, we will hand over the "causa Lerchl" to the political responsible ones as well as to the parties in the Lower House of the German Parliament and demand the necessary, immediate dismissal of the scientist. To do so, requires our social responsibility as scientists and physicians.

The government's responsibility for future generations - according to § 20 of the German constitution a political task - goes astray if health and environment, in the long run the basis of a sound national economy, is 'protected' by scientists that seem closer to commercial interests than to human life.

Sincerely,
The Board of the Competence Initiative:
Prof. Karl Richter, Dr. med. Kern, Uwe Dinger, Barbara Dohmen, Prof. Karl Hecht

Topic of the second review

My second review deals with Prof. Lerchl's contribution to the question of leukaemia development through radiofrequency electromagnetic fields. It is to evaluate whether both papers published under his responsibility allow conclusions on the onset and course of cancer in the blood-formation systems of AKR/J mice.

This second review has also been published on the website of the Pandora Foundation for Independent Research[14]. Whoever is interested in scientific details will find there the original full version of the review. The following text presents a summary.

General criticism of the methods applied

Both studies lack a link to real life and, therefore, they are without any scientific significance. The following reasons explain my explicit statement:

A first critical argument concerns the study design. The authors admit for both studies that the experiments carried out do neither allow a conclusion on the onset nor on the course of the tumour incident as for such a study animals must have been killed and examined at fixed intervals irrespectively of clinical symptoms. Already this decisive mistake in the study design is sufficient to reduce the wide-ranging conclusions in regard of humans to absurdity: namely, that the risk of leukaemia through mobile communication radiation can be ruled out with high probability and that there is no reason to adapt the valid exposure limits.

A second critical argument con-

cerns the way the experiments have been carried out and the consequences on the results. First, we have to doubt that the claimed blinding could be actually realized under the circumstances in the lab. Second, killing the animals at first signs of disease did incorporate a highly subjective factor in assessing the course of the disease. Yet, this factor had a decisively effect on the assessment of the results and the conclusions drawn. In several respects the study design allowed to manipulate the results in a way that always a desired conclusion was possible. There are enough clear signs that this has substantially been put to use.

The GSM study: Prof. Lerchl's final report for the DMF and his paper in a scientific journal

From the final report to the BMU[15] we learn that altogether no harmful effects could be detected when the AKR/J mice were exposed to a GSM-like 900 MHz radiation under the conditions mentioned. Statistically significant differences regarding the median survival time were not observed between exposed and sham-exposed animals. Accordingly, at the end of the experiment neither the frequency of lymphomas nor the number of animals still alive differed. In the course of the experiments, changes in the blood picture due to the disease were observed equally in both, the exposed and the sham-exposed animals. The only statistically significant difference was an increased relative body weight of the exposed animals compared to the sham-exposed ones. In the discussion of the report it is stated that the electromagnetic fields applied in the experiment do with a high degree of significance not influence the onset or the course of the disease. In the conclusion of the report it is stated that even results obtained with high SAR values do not point to negative effects of the radiation 'so that with the general restriction to transfer animal experiments to the situation of humans there is no reason to lower the current exposure limits for the whole-body exposure'.

In a peer-reviewed paper in *BioMed* Central Cancer of 2004 the results, which were presented in the final report as mentioned above, are confirmed and complemented. In the exposed group, the first mice died of lymphomas 60 days after exposure started, in the sham-exposed group this happened after 88 days. The median survival time was 190 days in the exposed group and 183 days in the sham-exposed group, the median time when lymphomas were palpated was 183 and 193 days, respectively. In both cases differences were not statistically significant. From these results it was concluded that the hypothesis of a cancer development in the hematopoetic system of genetically predisposed mice as a result of long-term exposure to radiofrequency electromagnetic fields, such as from mobile phones and base stations, is not supported. Correctly, it is added that with these findings radiation exposure being a risk factor for other forms of cancer cannot be excluded.

The UMTS study: Prof. Lerchl's final report for the DMF and his paper in a scientific journal

According to the final report for the BMU[16] the only significant difference between exposed and sham-exposed animals was the fact that with 28 more exposed than with 14 sham-exposed animals reached the end of the exposure term without showing detectable disease symptoms. The possibility that this might be a result of the exposure is not forgotten to mention. However, the number of diseased animals, the course of the disease and the severity did not differ between the two animal groups. The same was true for body weight and blood picture. Based on these findings the authors concluded that (a) their results do not point to any harmful effect from month-long exposure to UMTS fields at a value five times higher than the whole-body exposure allowed for humans (80 mW/kg), (b) the study did not show results that give reasons to lower the current exposure limits for whole-body exposure, and (c) the experiments carried out are a significant contribution to health care, because possible health risks should be recognized before the frequency of diseases in the population is rising. As UMTS is still a very new communication system convincing data from epidemiological studies on the direct effects on humans are not available yet.

The presentation of the results in the peer-reviewed journal Radiation Research differs from the final report only in so far as it is not mentioned anymore that the number of animals, which survived in a healthy state till the end of the experiment, was significantly higher in the exposed than in the sham-exposed group. Opposite to the previous report, the authors claim that at the end of the experiment the percentage of healthy mice in the exposed group did not differ significantly from the percentage of healthy mice in the sham-exposed group. This is illustrated with P=0.055, a value above the level of significance. The median survival time of exposed animals was 172 days and of sham-exposed ones 165 days, the median time when lymphomas were first observed was 141 and 149 days, respectively. In both cases the differences were not statistically significant. Corresponding to this, the

number of diseased animals and the severity of the disease did not differ between the experimental groups, too. The increase in body weight of the mice did considerably vary between 23.5 g and 53.3 g, however, without being different in the two groups. Of the original 350 mice four died spontaneously while 303 were killed before the end of the experiment because of their critical state of health. The pathological and histopathological findings together with the blood picture indicated that all animals with the exception of two had developed lymphomas.

How the study design affected the results of the animal experiments

a) Prof. Lerchl's study design allowed the manipulation of the results in any desired direction

In the GSM final report to the BMU, Prof. Lerchl declares that his research project is based upon the instructions of the BfS which said that animal studies are necessary to test the effects - among other things - 'of electromagnetic fields (900 MHz GSM, UMTS) in one and the same animal model, the AKR mice. These mice would develop spontaneous leukaemia and would, therefore, be a good model to investigate possible initiating or promoting effects of exposure to this kind of radiation'. In the UMTS final report, Prof. Lerchl mentions as an additional aim of the investigation, to clarify 'if chronic exposure to fields of the mobile communication standard UMTS influences the leukaemia rate or the promotion of solid tumours in animal models'.

In both peer-reviewed papers, we find the sentence "the present experiment does not allow any conclusions about tumour onset or the kinetics of tumour development, since for such type of study animals would have to be sacrificed and examined at fixed intervals irrespective of clinical symptoms". If this is true - and it is without doubt - the conclusion must be that the results described in the reports do not meet the requirement that initiation and course of the leukaemia process have been correctly picked up, since they were obtained by means of an unreliable procedure. Therefore, the claimed reliability of the results is pretended. This means that both research studies should never have been approved and carried out in their present form.

We can only suspect why the authors - also knowing better - did not carry out their research study in a way necessary to really gain new knowledge. The assumption that Prof. Lerchl deliberately selected a research approach that allowed him to determine the course of the study according to his expectations is probably the most plausible explanation. In both studies, the GSM and the UMTS one, the majority of the animals were sacrificed during the exposure period. Killing was done when mice showed first signs of disease (lymphoma, shortness of breath, loss of weight, or ruffled fur). Since the signs of disease develop - as everybody knows - slowly for quite a while the killing was dependent on the investigator's subjective impression.

It must have been clear to Prof. Lerchl or someone must have called upon his attention that he might have to take into account critical questions because of this unusual study design. However, he obviously believed that he could counter with the statement that the experiments were 'blinded' and the related code was disclosed only after the statistical evaluation had been completed.

b) Obviously it was made use of the possibility to manipulate

For scientists with laboratory experience, it is obvious that the indispensable 'blinding' of the experiments in both studies was in no way guaranteed regarding the experimental conditions, which could not have been simpler. The assumption that a fairly intelligent staff member should not have been able in the course of about 40 weeks to find out in which of the two exposure units the exposed and in which one the sham-exposed mice were housed can be called the crown of simplicity. And there is indeed evidence that the experiments were carried out without blinding. The most important is this one:

In the UMTS study, the number of mice supposed to have reached the end of the exposure term in a healthy state was in the exposed group with 28 animals considerably higher than in the sham-exposed one with 14 animals. Prof. Lerchl declared this difference in a presentation within the DMF consortium with $P<0.01$ as being highly significant, and in his UMTS final report for the BMU he described it at least as being significant, but did not indicate anymore the level significance. Based on this result he suggested in both, the presentation and the report, a possibly positive effect of mobile communication radiation. Strangely, in the peer-reviewed UMTS paper he did not mention this allegedly positive effect anymore. Despite the same number of animals, this time he calculated a P-value of 0.055. According to Prof. Lerchl's understanding of statistics, this level of significance was obviously not worth a further discussion. He might have been right to do so, because there is indeed an explanation for this phenomenon: Obviously, the investigators assessed the

state of health of the exposed animals as being better than the state of health of the sham-exposed ones because this subjective expectation was in line with the prevailing view in Prof. Lerchl's laboratory.

This assumption is supported by the fact that in both studies the median survival time of the exposed mice was with 190 and 172 days, respectively, clearly - though not significantly - higher than in the sham-exposed group with 183 and 165 days, respectively. The supposed positive effect of the mobile communication radiation - certainly based on the subjective selection - is, however, not in line with the median time for the development of lymphomas. These were only diagnosed after the animals had been sacrificed and the proof not been influenced by a subjective factor. Since the median time for tumour development in both studies was with 183 and 141 days clearly, but not significantly shorter in the exposed group, respectively, than with 193 and 149 days in the sham-exposed one, respectively, suspicion of a tumour accelerating effect of the mobile communication radiation cannot be dismissed. This opposite course might be pure coincidence, but most probably it is further evidence of data manipulation resulting from the invalid blinding procedure.

For sure, it must be hard on Prof. Lerchl to step by step turn aside a research result he is fond of and which his preferred internet forum for mobile communication critics (!) as being 'inconvenient, but true'. It is a proven fact now that his research results are actually the 'junk science' he is always talking of when scientists produce deviating results. Yet, at least the mobile communication industry takes a favourable view of his good intentions.

I also sent this review to the BMU and asked to please take note. However, this time I did not receive an answer. Considering my conclusions this could be expected. At least, my conclusions show how miserable the fruits are that the BMU's support of Prof. Lerchl produces.

My reply to the Competence Initiative

Prof. Lerchl's repeated statements that no effect could be observed that speak in favour of a carcinogenic potential of radiofrequency electromagnetic fields and the conclusion that there is no necessity to lower the exposure limits are both fully misguided and not at all supported by the reported results, but clearly show the intentions he in fact pursues.

Based on the subjective way the experiments were carried out it is indeed possible that the effects of radiation in the exposed animals escaped notice, for which we find at least one hint. But it seems equally possible, that no effect of radiation would have been detected, even if the experiments were carried out properly. Because of the distinct genetic predisposition for leukaemia the risk could hardly be increased during the short lifespan of the animals by environmental influences.

Instead of recognizing that his far-reaching conclusions are neither justified by a positive nor by a negative outcome of the experiments, Prof. Lerchl claims against all common sense that his results contribute to the state of knowledge.

This results in consequences which I see as follows:

To Prof. Lerchl's lack of scientific qualification comes a lack of scientific integrity - a combination that usually shows the scientific charlatan. The presented case does reach a dimension of social importance only because Prof. Lerchl being the head of the Committee Non-Ionizing Radiation of the SSK has a decisive influence on how the people in our country are adequately protected from possible risks of mobile communication radiation. The BMU must put up with the question why it did appoint exactly this scientist to a position so very important for the well-being of future generations and entrust him with tasks he is lacking all prerequisites for. This appointment made it possible for the Federal Minister of the Environment that ignoring and denial became the basis of the relevant technological and economical policies. If the fatal dimension of adverse biological effects of the mobile communication radiation can no longer be denied - which according to the current state of knowledge can most probably be expected in a few decades - the BMU must accept that it is mostly to blame for the disastrous development.

References

1) Lerchl D, Lerchl A, Hantsch P, Bitz A, Streckert J, Hansen V (2000) Studies on the effects of radio-frequency fields on conifers. Bioelectromagnetics Society Annual Meeting; June 9-16, 2000; München, Germany. Abstract collection:160 (P-63) http://www.bioelectromagnetics.org/doc/bems2000-abstracts.pdf

2) Lerchl D, Lerchl A, Bitz A, Streckert J, Hansen V (2000) Accelerated growth of corn seedlings esposed to pulsed electromagnetic fields (383 MHz and 900 MHz). Bioelectromagnetics Society Annual Meeting; June 9-16, 2000; München, Germany. Abstract collection:161 (P-64) http://www.bioelectromagnetics.org/doc/bems2000-abstracts.pdf

3) Lerchl A, Brendel H, Bitz A, Streckert J, Hansen V (2000) Further evidence for increase testicular cell proliferation in hamsters by exposure to electromagnetic fields (900 MHz and 1800 MHz). Bioelectromagnetics Society Annual Meeting; June 9-16, 2000; München, Germany. Abstract collection:92 (16-1) http://www.bioelectromagnetics.org/doc/bems2000-abstracts.pdf

4) A. Lerchl, e.g., in a press release from the Jacobs University on June 29, 2007; similar in several public statements.

5) A. Lerchl on January 9, 2007, in a letter to Dr. E. Vogel of the Bavarian Ministry for the Environment, Health, and Consumer Care

6) Lerchl A (2007) Macht Mobilfunk krank? Daten, Fakten Hintergründe. [Does mobile communication radiation make us sick? Data, facts, background] Page 72. W. Zuckschwerdt Verlag, ISBN 978-3-88603-919-7

7) Laborjournal online (2008) Interview mit Alexander Lerchl [Interview with Alexander Lerchl]. http://www.laborjournal.de/rubric/archiv/editorials/304b.lasso

8) Drexler H, Schaller KH (2008) Kommentar zu A. Lerchl „Umgang mit kritischen Kommentaren zu veröffentlichten Daten [Comment on A. Lerchl "Dealing with critical comments on published data"]. Umweltmed ForschPrax 13(3):143.

9) Neitzke HP (2008) Deutsches Mobilfunk Forschungsprogramm I [German Mobile Telecommunication Research Programme]. EMF-Monitor 3/2008.

10) Adlkofer F (2010) A critical comment 1. http://www.pandora-foundation.eu/documents/denying-potential-health-risks.html

11) Lerchl A (2003) Investigation of mechanisms of action in cells exposed to the high frequency electromagnetic fields of mobile telephone technology. B. pineal gland. Completed research. German Mobile Telecommunication Research Programme (Final Report only in German) http://www.emf-forschungsprogramm.de/forschung/biologie/biologie_abges/bio_020.html

12) Sukhotina I, Streckert JR, Bitz AK, Hansen VW, Lerchl A (2006) 1800 MHz electromagnetic field effects on melatonin release from isolated pineal glands. J Pineal Res 40(1):86-91.

13) Strahlenschutzkommission [Commission on Radiological Protection] (2008) Deutsches Mobilfunk-Forschungsprogramm. Stellungnahme verabschiedet in der 223. Sitzung am 13.05.2008 [German Mobile Telecommunication Research Programme. Statement passed in session 223 on May 13, 2008]:9. http://www.ssk.de/de/werke/2008/volltext/ssk0804.pdf

14) Adlkofer F (2010) A critical comment 2. http://www.pandora-foundation.eu/documents/denying-potential-health-risks.html

15) Lerchl A (2004) Influence of low and high frequency electromagnetic fields on spontaneous leukaemia in AKR/J mice. Completed research. German Mobile Telecommunication Research Programme (Final report only in German) http://www.emf-forschungsprogramm.de/forschung/biologie/biologie_abges/bio_040.html

16) Lerchl A (2007) Long-term study on the effects of UMTS signals on laboratory rodents. Completed research. German Mobile Telecommunication Programme (Final report only in German) http://www.emf-forschungsprogramm.de/forschung/biologie/biologie_abges/bio_125.html

Part III

Deceiving politicians and the public with wrong advice

Franz Adlkofer and Karl Richter

In Part I of this documentation, we covered Prof. Alexander Lerchl's long-standing campaign against research findings contrary to his beliefs and the authors. In Part II we discussed the Professor's contributions to the German Mobile Telecommunication Research Programme (DMF). And here in Part III, we will take a closer look at his role of advising politicians and educating the public. His appointment as a leading radiation protection official adds considerable weight to his presentation of this issue to the public. From our perspective, this position calls for an increase in responsibility, and we question how he makes use of his position to exercise influence.

1. All-clear messages and assurances of safety

The constant theme in all facets of Prof. Lerchl's work is one of assurances of safety and a message of "all clear." This was part and parcel of his focused attention on the physician training of the IZMG, a lobby group of mobile phone service providers. His contributions to the DMF were designed to verify the all-clear messages and current exposure guidelines. Obviously, he believes that his leading position in radiation protection is a special mission to seize each and every opportunity to spread his dogma of the safety of wireless radiation and the appropriateness of current exposure guidelines. Let us illustrate his typical statements with two examples.

First example: Educating communities

In an interview with Prof. Lerchl, published in a document[1] of the German Association of Towns and Communities (DStGB), his position is summed up in the headline: *No Health Risks from Mobile Phone Base Stations*. To the key questions of this risk discussion, he gives the following answers and provides communities with guidelines intended to provide orientation:

- To the question of potential risks, exposure limits, and precaution, he replies in general terms:

  According to the current state of scientific knowledge, health risks from mobile phone base stations are not to be expected and could also not be verified with comprehensive investigations. In reality, only a very small percentage of the exposure limits are exhausted. Precautionary measures are not required.

- Regarding the newly introduced LTE technology, whose effects have not yet been researched, he emphatically assures everybody that the public is protected through the current exposure limits:

  The frequencies used by LTE differ only slightly from those already in use today or have been in use until recently (so-called digital divide). Only the types of modulation are different. According to the current body of research, however, no effects on humans are to be expected.

- In Lerchl's view, these assurances have been authenticated in particular by the DMF, in which he has been actively involved and which has produced not a shred of evidence of adverse effects:

  The DMF studied many areas to determine if mobile phone base stations or mobile phone handsets pose health risks. To this end, numerous individual projects on cells and animals as well as clinical studies were carried out, exposure measurements were taken, and experiments regarding possible biological mechanisms—in other words, how biological effects could be triggered—were performed. Overall, the DMF found no evidence of adverse health effects at any level and thereby helped put the sometimes rather emotionally charged debate on a more objective footing.

- Even though the DMF provides the basis for his own all-clear message

as well as that of the government, he concedes after all that there are two crucial questions that have not been answered:

At the moment, there are two relevant research areas: On the one hand, we must clarify whether children are more highly exposed than adults because due to their anatomy they absorb electromagnetic fields differently. These investigations are already underway or have been completed for certain areas. The other issue that will occupy us for some time to come concerns long-term studies. Even today, more than 15 years after the countrywide deployment of wireless networks, we are pretty sure that no negative health effects are to be expected, but for precautionary purposes, these types of studies should be continued for some more time...

Another example: A report by the German federal government

The draft of the *Fourth Report of the Federal Government on the Research Findings Regarding Possibilities to Minimize Emissions of All Wireless Communication Technologies and Regarding Health Effects* was submitted to the Federal Ministry of the Environment on 10 January 2011, and two days later, it was forwarded to the German Parliament as the report of the respective ministry[2]. It is obvious that Prof. Lerchl was entrusted with a special responsibility concerning this report due to his position and the report reflects the entire spectrum of his all -clear tenet.

The current state of risk research is summarized in the report as follows:

- Damage can only be caused by thermal effects:
  Parameter for protective measures against RF electromagnetic fields is the heating of tissue because in scientific studies significant adverse health effects could only be observed at an increased body temperature of considerably more than one degree. […] Adverse health effects due to nonthermal effects at low exposure levels of radiofrequency fields could not be verified by research over the past decades.
- The claim is made that the DMF has refuted virtually all biological effects:
  E.g. the suspected impact on sleep, cognitive performance, the blood-brain barrier, immune system parameters, reproduction, formation or processing of visual or audio stimuli, or the causation of cancers, tinnitus, or headaches. Moreover, no new evidence was found that would indicate possible effects relevant to human health, especially no nonthermal effect mechanisms.
- The denial of genotoxic effects is directly related to the justification of the exposure limits:
  No evidence of damage to human lymphocytes could be derived from the research results. There is no need for action to lower exposure limits.
- Suspected electromagnetic hypersensitivity is declared a "condition" that must have other causes:
  From a review of all national and international studies on "electromagnetic hypersensitivity" follows that no causal relationship between complaints of electrosensitive persons and extremely low frequency as well as radiofrequency electromagnetic fields can be verified. […] The causes of the adverse health effects suffered by those affected are therefore not associated with the exposure to nonionizing radiation.

The lack of raising awareness and its consequences

Both texts distort the truth and dismiss the results of international research in the world outside of the DMF. Nonthermal effects, i.e. effects below exposure limits, can no longer be denied.

- Genotoxic and other biological effects of electromagnetic fields have been proven beyond a doubt by numerous studies.
- There are plausible indications of biological effect mechanisms even if we still know too little about their ultimate causes, which is why further research is urgently needed.
- To date, the evidence of electrosensitivity has become so manifold and compelling that the above-quoted passages amount to the defamation of a group of especially vulnerable individuals.
- Taking the known biological effects into account, exposure limits for radiofrequency radiation appear to be irresponsibly high.

Both quoted texts are only two examples out of many writings with similar contents that Prof. Lerchl has either penned himself or co-written. These texts are of special importance because they concern two key institutions of our society citizens are dealing with: locally, municipal governments and higher up the political hierarchy, the governments and parliaments. Scientists and well-informed citizens, for whom the results of the radiofrequency radiation research appear in a different light, are not only reduced to irritating troublemakers, but they are politically and legally outmaneu-

vered with the official declarations. This perhaps is the intent.

The DMF is constantly referred to as the authority that has allegedly disproven the assumed adverse biological effects. From the perspective of the contractees of this research program, it only seems logical then to entrust Prof. Lerchl as one of the most important supporters of the research program with the outstanding task to educate and inform politicians and the public. Based on the documentation presented here, the consequence of this approach appears in a rather different light: closeness to industry, manipulations, and scientific failures by Prof. Lerchl, which have been described in the previous parts of the documentation, persist throughout his consulting and educational efforts.

This is particularly disastrous for the health of "children"[3]. It has been known for quite some time that children who use mobile phones absorb almost twice as much radiofrequency radiation than adults due to their anatomical and physiological characteristics; in case of the bone marrow, the radiation absorption can be even ten times higher. It is unknown how this exposure—which in certain situations exceeds the exposure limits—may acutely or chronically affect children. No matter how long the latency period from the onset of cellular damage to the onset of cancer or other chronic diseases may be; due to the children's lifespan, it is to be expected that they would "experience" the onset of the disease—which often is not the case for adults. Regarding the long-term effects in adults, we have no certain data. The current body of available research, however, increasingly implicates radiofrequency radiation in promoting the formation of brain tumors. This supported with the results of studies from the Medical University of Vienna, which suggest a genotoxic potential of radiofrequency radiation, however, is vehemently contested by Prof. Lerchl.

The German federal government again entrusted Prof. Lerchl with filling the knowledge gap regarding children. In an article in the newspaper *Weser-Kurier* from 4 June 2010[4], he himself informed the public that after his extensive research within the framework of the DMF, he was recently granted another 600,000 euro for a project to experiment with adolescent rats to "provide data […] on how mobile phone radiation affects the brain development of adolescents."

We will discuss this in more detail in the context of another interview in the next chapter. The topic of Prof. Lerchl's other advertising message, in which he promotes interests of the industry, deals with the introduction of the new LTE technology, which he gives a clean bill of safety as the leading member of the radiation protection commission. It focuses on the contradictions between his statements and the current state of knowledge.

2. An interview regarding the new LTE technology: Promoting corporate interests - contradicting the state of knowledge

In its EMF Spectrum, the Scientific Institute for Infrastructure and Communication Services (WIK) of the mobile phone industry recently published an interview with Prof. Lerchl[5] in which he rules out the possibility of any public health risk from LTE technology. The assurance is given despite the fact there are no biological data available to support it.

The results of the REFLEX study, which suggested the genotoxic potential of mobile phone radiation, have been confirmed several times despite Lerchl's four-year smear campaign[6]. These results and the current body of general research contradict the statements of his interview. Again, it is not always possible to tell exactly what may be attributed to a lack of scientific competence and what to a high degree of ruthlessness. Yet with both of these characteristics, Prof. Lerchl serves again as the poster boy for how scientists are abused by politicians and industry to assert their interests and how the scientists themselves willingly allow to be abused.

Below we will discuss the interview with Prof. Lerchl, where he claims that LTE technology deserves a clean bill of safety (AL = Alexander Lerchl, FA = Franz Adlkofer; emphasis added by: FA).

Statement by AL: *The additional LTE transmitters will result in higher overall emission levels, but even then the LTE network will not even remotely exhaust* ***the current exposure limits****, as was demonstrated by testing pilot LTE transmitters at the end of 2010.*

Comment by FA: Prof. Lerchl is correct in stating that the current exposure limits, which protect the human body from overheating, will not be exceeded by using the new technology in the future. However, what he does not want to admit is the fact that this is not about damages caused by heating. This is rather about damages originating with biological radiation effects well below exposure limits that occur without heating tissue. The currently valid exposure limits do not provide protection against so-called nonthermal effects . Prof. Lerchl resolves this by simply denying the existence of nonthermal effects. Findings of international research that contradict his view[7], he refers to as "junk science" or "rubbish" or—if he finds these invectives too weak—fraud[8]. With his defense of the exposure limits, which have been anachronistic for quite some time, he exclusively protects the interests of industry but certainly not human health.

AL: *According to the* ***current state of scientific knowledge****, it is not to be expected that the additional emissions translate into adverse health effects.* ***The new signal characteristics of the LTE standard do not pose a fundamental risk*** *because we do not have any evidence yet that biological systems respond differently to different signal characteristics.*

FA: Prof. Lerchl limits the body of research to that portion of the scientific literature which allows him to confirm the safety of mobile phone radiation for politicians and industry. This applies especially to his own papers produced within the framework of the DMF, even though his null results can be attributed to design mistakes, manipulation during the study, and/or misinterpretation of the findings (see Part II)[9]. Furthermore, he refers to the numerous studies, including his own, that are wholly or partly financed by the mobile phone industry, which usually find no evidence of biological effects with respect to mobile phone radiation[10]. In contrast, he apparently classifies all studies that do report biological effects suggesting a disease-promoting potential of mobile phone radiation as „rubbish"[11]. On this biased selection of scientific literature, Prof. Lerchl confirms the safety of the new signal characteristics of the LTE standard—despite the complete lack of any such investigations.

AL: *The previous* ***findings of various cell and animal studies*** *have produced no evidence that RF electromagnetic fields utilized by mobile phone technologies would have special* ***effects, depending on their modulation or frequency****. Also, neither unmodulated nor GSM- or UMTS-based signals have shown* ***negative effects in cells or animals of reliable studies****.*

FA: Different types of signals not only establish the conditions for transferring different amounts of data, but they are also, though contested by Prof. Lerchl, associated with different biological effects[12]. Some examples may illustrate this. While GSM-modulated radiation clearly causes DNA strand breaks, i.e. genetic damage, in isolated human trophoblasts, the unmodulated carrier frequency is not capable of doing so[13]. In the REFLEX study and its follow-up studies, an approximately ten times higher rate of DNA

strand breaks were observed in isolated fibroblasts after UMTS exposure compared to GSM exposure[14]. In a recently published paper, it is further shown that the long since verified changes in the electroencephalogram (EEG) of the study subjects are dependent on the modulation of the radiation[15]. In order to stick to his statement that modulation- and frequency-dependent effects do not occur, Prof. Lerchl helps himself by labeling the above-quoted and all further studies that do not conform to his assumptions as "rubbish." But because different types of signals were not considered when exposure limits were established, he defends exposure limits that have long since become scientifically obsolete with his cunning insinuations regarding the unreliability of these studies.

AL: *Individual studies, which demonstrated these effects, turned out to be* ***not reproducible when repeated****. Since to date, there is no effect mechanism known how biological systems could demodulate the radiofrequency signals, LTE signals are not to be expected an exception.*

FA: Prof. Lerchl states correctly that the repetition of studies is not always successful in confirming the initial study results that suggested adverse effects of radiofrequency radiation. However, no matter how many negative findings there are, they are unable to refute even one single positive finding of a study carried out correctly. This applies particularly to those cases where the intention of the pursued refutation is obvious. How susceptible repetitions of EMF studies are to chance may be illustrated by the following example. In a series of two experiments about the impact of extremely low frequency electromagnetic fields on the development of three generations of mice, it was demonstrated that the animals of the first experiment were markedly impaired in their development while the animals of the second experiment, which was carried out after the first and designed to confirm these initial results, thrived. In additional repetitions of the experiments, carried out by a researcher with close ties to the industry that paid for them and which were designed to refute the results of an independent researcher, the problem of the contradicting results was solved to the satisfaction of the contractees by generating a null result through averaging the values[16]. Since Prof. Lerchl demands reproducible repetitions of studies as an indispensable prerequisite for having study results accepted, he has made it possible for him to dump even the most valuable research results that displease him as "rubbish." The arbitrary way of classifying scientific literature as reliable or not reliable is without a doubt the most shameless method to eliminate unwelcome research findings. Since he apparently has already made too generous use of it, his credibility has now also been destroyed at the International Agency for Research on Cancer of the WHO (IARC) in Lyon, which otherwise is not afraid of working together with the mobile phone industry[17]. Prof. Lerchl's stubborn denial of reality is, if nothing else, consistent.

AL: *Based on the results of many studies that have extensively researched this issue, those claims are neither credible nor replicable* ***because a biological mechanism that could explain different effects of pulsed fields compared to unpulsed electromagnetic fields could not be demonstrated****. Depending on the data transfer rate, the LTE signal changes between "pulsed" and "quasi-continuous", but it is not expected that other than those biological effects known to date could play a role.*

FA: To which extent pulses and modulation, without which no data transfer at the present scale would be conceivable, are a condition required for a radiofrequency radiation biological effect to occur has already been documented[18]. Prof. Lerchl is correct in stating that the current understanding of the effect mechanisms regarding electromagnetic fields at large and mobile phone radiation in particular is a mere hypothesis at this present moment. One of the reasons for this inadequate state of knowledge lies in the fact that the financial sponsors for this type of research such as governments and industry have shown no interest in clarifying these associations because their web of lies woven exclusively from threads of thermal radiation effects would quickly have collapsed and the so cunningly established exposure limits would have been destroyed. Another reason for the poor state of knowledge in this research area, however, is also due to the complexity of intra- and intercellular processes within living organisms for which electromagnetic communications play a significant role. It is conceivable that there is not one uniform effects mechanism of external electromagnetic fields, but that a given organism may respond differently, depending on the type of radiation and the state of the exposed cell. This would mean that cells and the organism as a whole could respond rather differently by chance, resulting in effects differing by type and degree on the well-being of affected persons.

Because we know little or nothing about the effects of external electromagnetic fields on the intracellular electrochemical processes does not, by any means, allow us to assume that they do not occur. That which is to be expected theoretically, i.e. sensitive biological systems are easily disturbed by external electromagnetic fields, has long since been proven[19]. To determine the exposure limit for mobile phone handsets with the use of a plastic head, filled with electrolytic water to adjust for the electrical conductivity of brain tissue, can only be called a grotesque invention by physicists who have no idea what life is. Prof. Lerchl's statement about the assumption that the LTE signal will result in no other effects than the known biological effects such as heating is at about the same level.

AL: Even after the completion of the DMF and other research programs, there are still open questions that right now cannot be answered with sufficient certainty. These include the possible effects on children who increasingly use mobile phone technologies. Furthermore, no final assessment of long-term effects can be made at this time because the countrywide deployment of wireless networks has only occurred over the last 20 years. Out of precaution, not because of any concrete suspicious facts, responsible agencies recommend exercising prudence.

FA: The admission that it is not possible to answer the currently most pressing questions regarding radiofrequency radiation research with sufficient certainty—but which may be of greatest importance to the future of many people, especially children—basically devalues all further arguments Prof. Lerchl presents in support of the LTE technology or mobile phone technologies in general. The conclusion drawn from his admission can only mean that currently nobody knows what future people face based on Prof. Lerchl's expert advice, and it is impossible to rule out ill health and premature death. That we are not yet able to answer this question forbids per se downplaying any possible risks of radiofrequency radiation.

This existing uncertainty, however, does not in the least prevent Prof. Lerchl from continuing his mission of publicly announcing the safety of wireless radiation. His opportunism, with which he represents the interests of politics and industry, cannot be reconciled with the responsibility assigned to him by the Commission on Radiological Protection (SSK) to protect human health from unnecessary radiation exposures. Disregarding concrete suspicious facts, which have emerged for decades and have become ever more impressive since the beginning of this century[20], exposes him either as someone who lacks the competence required for his position at the SSK or someone who is corrupt. Prof. Lerchl's reference to the responsible agencies, which stand by him despite his obvious scientific and personal failures and which apparently continue to seek his advice because he fits their personal, political, or economic considerations, allows only one conclusion: In the interest of the public, it is about time that change in the political landscape is forced.

AL: „In my institute, we currently study the effects of mobile phone radiation on rats, which from an age of 2 weeks are exposed in the head area for two hours a day. The animals are tested for their learning behavior, spatial orientation and coordination with established tests, and that at juvenile, adult, and presenile age levels (presenile = prior to senility, approximately prior to age 65 in humans)."

FA: Numerous research projects involving rats with the most diverse study goals have been carried out since the 1950s. The results have been contradictory right from the start. To believe that Prof. Lerchl with his peculiar understanding of research would now make a groundbreaking contribution seems rather farfetched in this context. That he was awarded a research contract allows us to extrapolate as to the intention of those who have provided the means for this pointless research project, namely that they expect results that are politically usable. Most likely, Prof. Lerchl will continue to support the current policy of doing nothing with these results. Chances are that the results are already a forgone conclusion. With the daily two-hour fixation of the head, the animals are exposed to a level of stress which is clearly capable of falsifying the effects of the mobile phone radiation beyond recognition. In the past, Prof. Lerchl used to be a declared critic of the fixation of test animals[21], but now he seems to have adjusted to the changed circumstances as he has done on other occasions. In case he should unexpectedly produce results that do not meet the planned expectations, he will either overlook them or find another interpretation for them to satisfy his contractees as he did in the DMF research program. Most likely, however, he will conclude that radiofrequency radiation is good for rats at any age. The extrapolation to humans would be the next step. Quod erat demonstrandum (which was to be proven).

Conclusion:

Putting the public at risk by the arrogance of those in power, by commercial interests and obliging scientists

The problem that Prof. Lerchl has created with his interview, both for himself and his employers, is that he did not promote the deployment of the LTE technology as an individual biologist from the private Jacobs University Bremen, but, as revealed in the WIK report, as the chair of the Committee on Nonionizing Radiation at the Commission on Radiological Protection (SSK) of the Federal Office for Radiation Protection (BfS). With this, he once and for all reduces the SSK to the PR agency of the mobile phone industry. It appears as if this is no reason for those responsible politicians who assigned him to this position to reconsider their decision. They lack either the insight as to the need to act or the sense of responsibility to protect the public from health risks. As the history of EMF research has shown, this type of behavior appears to be almost symptomatic for decision makers in government and industry[22]. For millions of affected people, this current state of radiation protection in Europe and especially in Germany cannot be tolerated any longer. And a recent resolution by the European Council, which will be discussed later, proves them right.

3. Protecting radiation or being protected from radiation? Misunderstandings of "radiation protection"

The double function that Prof. Lerchl serves in politics and industry includes the downplaying of possible radiation risks as well as paving the way for new technologies. As a leading radiation protection official, he justifies with his work a political practice that ignores the precautionary exclusion of public health risks as could be seen in the above example of LTE. Yet the health policy issue of this event is much greater because, as the top radiation protection official, he blocks out a large chunk of available international research, further confirming his shortcomings of scientific competence and responsibility.

The authority to interpret research results—in the hands of the telecommunication industry

In the period after World War II, the telecommunication industry was successful in infiltrating national and international advisory bodies with their scientific henchmen. Thus, the industry has largely monopolized the interpretation of scientific findings over decades. The close ties between industrial and political interests, resulting in assurances of safety and endorsement of exposure limits, have also proven to be of great importance to the government[23]. A policy on wireless communication technologies, which independent scientists consider one-sided and therefore seriously negligent, has been formally legitimized in this manner.

The scientist Prof. Lerchl - rejected by the WHO as biased, but obviously good enough for Germany

Only recently, the practice of generating evidence of this alleged legitimization is beginning to crumble. The German federal government, for example, has recently received confirmation from an international organization that it has been negligent in dealing with its population when it entrusts such an "expert" as Prof. Lerchl with the protection of public health and the environment.

The Agency for Research on Cancer of the WHO (IARC) rejected Prof. Lerchl's offer to join the working group, which met in late May 2011 to discuss the risk assessment of radiofrequency electromagnetic fields. They explained that his known close ties to the mobile phone industry would make it unlikely that he could contribute constructively to a balanced scientific consensus regarding the possible risks of radiofrequency radiation. An article in the *ElektrosmogReport* from March 2011[24] about this event rightly raises the question of how it is possible that the same scientist, who is rated by the IARC as industry friendly and scientifically rather unproductive, is entrusted with the chair of the Committee on Nonionizing Radiation at the SSK of the Federal Office for Radiation Protection (BfS)—now even for a second term.

The scientist Prof. Anders Ahlbom—as a lobbyist of the mobile phone industry an opinion leader in international research

Yet the combination of poor scientific competence and arrogant aggressiveness so typical of Prof. Lerchl seems to be reserved for Germany right now. For the representation of their international interests, the mobile phone industry tends to select scientists of higher caliber, for example, Professor Anders Ahlbom from the world-renowned Karolinska Institute in Stockholm, which cannot be compared to Lerchl's private and Vodafone-sponsored Alma Mater in Bremen. Prof. Anders Ahlbom, who is an epidemiologist, sat as a scientist of international standing for more than ten years on many national and international committees that set the agenda for risk assessment issues of radiofrequency radiation or exposure guidelines. At the IARC meeting in Lyon, which was convened to reach a consensus regarding the risk assessment of radiofrequency electromagnetic fields, he was supposed to chair the epidemiology expert group. However, shortly before the meeting started, he was exposed as a director of a lobby firm for the mobile phone industry headquartered in Brussels[25]. The IARC had made independence and the absence of conflicts of interest as conditions for participation. In order not to jeopardize his participation, Prof. Ahlbom conveniently "forgot" to declare his close relationship with the mobile phone industry. After this was exposed, he met the same fate as had earlier befallen Prof. Lerchl—he was excluded from participating. As a result, the mobile phone industry was not represented by their two most active lobbyists at the meeting so important to them.

Agenda for an appropriate protection from radiation

The time has come to clearly address the obvious misunderstandings regarding radiation protection and to get involved so that required changes can be made. The documentation presented here is meant as a contribution to this end. After a careful analysis of the observed shortcomings, we demand that:

1. Precautionary measures to protect the public are embraced and enforced;
2. The excessively high exposure limits are lowered to the minimum threshold required to guarantee the operation of the technology;
3. The public is informed about the latest state of knowledge regarding possible long-term risk of radiofrequency radiation, especially for children and adolescents;
4. Competent radiofrequency radiation research is provided and promoted through independent working groups;

This, however, can only be accomplished if the mobile phone industry lobbyists of the scientific community are removed from existing national and international advisory boards on radiation protection. As long as these lobbyists are used by governments and industry to justify their joint policies, no changes in circumstances can be expected. In this situation, one can only hope that the emerging will of the people will also bring about an increase in reason regarding health policies within the German and European radiation protection departments.

References

1) DStGB Dokumentation N° 99 (2010) Mehr Breitband für Deutschland [More broadband for Germany]. edition 11/2010:30. http://www.dstgb.de/dstgb/Schwerpunkte/mehr-breitband-für-deutschland

2) Vierter Bericht der Bundesregierung über die Forschungsergebnisse in Bezug auf die Emissionsminderungsmöglichkeiten der gesamten Mobilfunktechnologie und in Bezug auf gesundheitliche Auswirkungen [*Fourth report of the federal government on the research findings regarding possibilities to minimize emissions of all wireless communication technologies and regarding health effects*]; German Parliament, 17th election period; print 17/4408. http://dip21.bundestag.de/dip21/btd/17/044/1704408.pdf

3) See: Bleuel H-S et al. (2008) Die Gefährdung und Schädigung von Kindern durch Mobilfunk [Mobile phone radiation hazards and injuries among children] (Effects of wireless communication technologies, brochure 2) as well as brochure 3 of this series: Adlkofer F et al. (2008) How susceptible are genes to mobile phone radiation? britannien-uk/brochure/how-susceptible-are-genes/index.html

4) Weser-Kurier (4 Juni 2010) Bremer Biologe erforscht Handystrahlung [Bremen Biologist's Research on Mobile Phone Radiation].

5) EMF Spectrum (7. April 2011) Der LTE-Rollout aus Sicht des Strahlenschutzes [The rollout of LTE from the perspective of radiation protection]. WIK-EMF-Spectrum-2011-1 (PDF):20-22. http://www.wik-emf.org/emfspectrum.html

6) Adlkofer F & Richter K (2011) About the handling of scientific findings regarding cell phone research at the Medical University of Vienna (Part I). http://www.pandora-foundation.eu/downloads/pandora_vienna-campaign_-english_2011-01-28.pdf

Adlkofer F. & Richter K (2011) About the handling of scientific findings regarding cell phone research at the Medical University of Vienna (Part II). http://www.pandora-foundation.eu/downloads/vienna---part-ii_booklet.pdf

7) Hardell L & Sage C (2008) Biological effects from electromagnetic field exposure and public exposure standards. Biomed Pharmacother 62(2):104-9.

Hecht K et al. (ed.) (2009) Warum Grenzwerte schädigen, nicht schützen, aber aufrechterhalten werden. Beweise eines wissen-schaftlichen und politischen Skandals [Why exposure limits cause harm, not protection—yet are kept in place. Evidence of a scientific and political scandal]. Competence Initiative for the Protection of Humanity, Environment and Democracy e. V., brochure 4

8) See endnote 6.

See Part II of this documentation and the complete text of both reports under endnote 7.

9) Huss A et al. (2007) Source of funding and results of studies of health effects of mobile phone use: systematic review of experimental studies. Environ Health Perspect 115(1):1-4.

Slesin L (2006) "Radiation Research" and The Cult of Negative Results. Microwave News. http://www.microwavenews.com/RR.html

11) Diem E et al. (2005) Non-thermal DNA breakage by mobile-phone radiation (1800 MHz) in human fibroblasts and in transformed GFSH-R17 rat granulosa cells in vitro. Mutat Res 583(2):178-83.

Friedman J et al. (2007) Mechanism of short-term ERK activation by electromagnetic fields at mobile phone frequencies. Biochem J 405(3):559-68.

Schwarz C et al. (2008) Radiofrequency electromagnetic fields (UMTS, 1.950 MHz) induce genotoxic effects in vitro in human fibroblasts but not in lymphocytes. Int Arch Occup Environ Health 81 (6):755-67.

Ruediger HW (2009) Genotoxic effects of radiofrequency electromagnetic fields. Pathophysiology 16(2-3):89-102.

Phillips JL, Singh NP, Lai H (200) Electromagnetic fields and DNA damage. Pathophysiology 16(2-3):79-88.

De Iuliis GN et al. (2009) Mobile phone radiation induces reactive oxygen species production and DNA damage in human spermatozoa in vitro. PLoS One 4 (7):e6446.

Campisi A et al. (2010) Reactive oxygen species levels and DNA fragmentation on astrocytes in primary culture after acute exposure to low intensity microwave electromagnetic field. Neurosci Lett 473 (1):52-5.

Franzellitti S et al. (2010) Transient DNA damage induced by high-frequency electromagnetic fields (GSM 1.8 GHz) in the human trophoblast HTR-8/SVneo cell line evaluated with the alkaline comet assay. Mutat Res 683(1-2):35-42.

Xu S et al. (June 2010) The effect of 1800MHz GSM mobile phone radiation on cellular DNA stability. Bioelectromagnetics Society Annual Meeting, Seoul/Südkorea; Abstract Collection:9-3. http://www.bioelectromagnetics.org/bems2010/supp data/9-3.pdf

Xu S et al. (2010) Exposure to 1800 MHz radiofrequency radiation induces oxidative damage to mitochondrial DNA in primary cultured neurons. Brain Res 1311:189-96.

Kesari KK, Kumar S, Behari J (2011) Effects of radiofrequency electromagnetic wave exposure from cellular phones on the reproductive pattern in male wistar rats. Appl Biochem Biotechnol 164(4):546-59.

Volkow ND et al. (2011) Effects of cell phone radiofrequency signal exposure on brain glucose metabolism. Jama 305 (8):808-13.

Dragicevic N et al. (2011) Long-term electromagnetic field treatment enhances brain mitochondrial function of both Alzheimer's trans-genic mice and normal mice: a mechanism for electromagnetic field-induced cognitive benefit? Neuroscience 185:135-49.

12) Adlkofer F et al. (2008) How susceptible are genes to mobile phone radiation? (Effects of wireless communication technologies). Competence Initiative for the Protection of Humanity, Environment and Democracy e. V., brochure 3. http://broschuerenreihe.net/britannien-uk/brochure/how-susceptible-are-genes/index.html

13) Franzellitti S et al. (2010) Transient DNA damage induced by high-frequency electromagnetic fields (GSM 1.8 GHz) in the human trophoblast HTR-8/SVneo cell line evaluated with the alkaline comet assay. Mutat Res 683(1-2):35-42.

14) Schwarz C et al. (2008) Radiofrequency electromagnetic fields (UMTS, 1.950 MHz) induce genotoxic effects in vitro in human fibroblasts but not in lymphocytes. Int Arch Occup Environ Health 81 (6):755-67.

Adlkofer F et al. (2005) Risk Evaluation of Potential Environmental Hazards From Low Frequency Electromagnetic Field Exposure Using Sensitive in vitro Methods (REFLEX). Final Report:128 (Fig. 94).

Adlkofer F (2009) Nachweis von genotoxischen Wirkungen in isolierten Säugerzellen nach elektromagnetischer Feldexposition [Evidence of genotoxic effects in isolated mammalian cells after electromagnetic field exposure]. http://www.pandora-stiftung.eu/downloads/stavanger_website_de.pdf

15) Schmid MR et al. (2011) Sleep EEG alterations: effects of different pulse-modulated radio frequency electromagnetic fields. J Sleep Res [Epub ahead of print]

16) Marino A (2010) Going Somewhere: Truth about a life in science, p. 127 to 137. Cassandra Publishing, ISBN: 978-0-9818549-1-5

17) Diagnose-Funk 'brennpunkt' (2011) WHO takes distance from Prof. A. Lerchl. http://www.diagnose-funk.org/infoformate/brennpunkt/who-lehnt-prof-a-lerchl-als-mitarbeiter-ab.php

18) Adlkofer F et al. (2008) How susceptible are genes to mobile phone radiation? (Effects o f wireless telecommunication technologies). Competence Initiative for the Protection of Humanity, Environment and Democracy e. V., brochure 3. http://broschuerenreihe.net/britannien-uk/brochure/how-susceptible-are-genes/index.html

Franzellitti S et al. (2010) Transient DNA damage induced by high-frequency electromagnetic fields (GSM 1.8 GHz) in the human trophoblast HTR-8/SVneo cell line evaluated with the alkaline comet assay. Mutat Res 683(1-2):35-42.

Hecht K et al. (ed.) (2008) How susceptible are genes to mobile phone radiation? State of the research—Endorsements of safety and controversies—Self-help recommendations. Competence Initiative for the Protection of Humanity, Environment and Democracy e. V., brochure 3. http://broschuerenreihe.net/britannien-uk/brochure/how-susceptible-are-genes/index.html

Adlkofer F (2009) Nachweis von genotoxischen Wirkungen in isolierten Säugerzellen nach elektromagnetischer Feldexposition [Evidence of genotoxic effects in isolated mammalian cells after electromagnetic field exposure]. http://www.pandora-stiftung.eu/downloads/stavanger_website_de.pdf

Schmid MR et al. (2011) Sleep EEG alterations: effects of different pulse-modulated radio frequency electromagnetic fields. J Sleep Res [Epub ahead of print]

19) See literature at endnote 12 as well as Anastassiou CA et al. (2011) Ephaptic coupling of cortical neurons. Nat Neurosci 14(2):217-23.

20) Marino A (2010) Going Somewhere: Truth about a life in Science. Cassandra Publishing, ISBN: 978-0-9818549-1-5

Ketcham C (2010) Warning: Your cell phone may be hazardous to your health. http://emfjournal.com/2010/01/27/warning-your-cell-phone-may-be-hazardous-to-your-health/.

21) Slesin L (2007) Wheel on trial. Microwave News Vol. XXVII (No. 12):10. http://www.microwavenews.com/docs/PERFORMA.pdf

22) Marino A (2010) Going Somewhere: Truth about a life in science. Cassandra Publishing, ISBN: 978-0-9818549-1-5

Ketcham C(2010) Warning: Your cell phone may be hazardous to your health. http://emfjournal.com/2010/01/27/warning-your-cell-phone-may-be-hazardous-to-your-health/.

Slesin L (2007) Wheel on trial. Microwave News Vol. XXVII (No. 12):10. http://www.microwavenews.com/docs/PERFORMA.pdf

Maisch DA (2011) Machiavellian Spin: Political and corporate involvement with cell phone research in Australia. http://www.pandora-foundation.eu/downloads/maisch-don_a-machiavellian-spin_2011.pdf

23) See endnote 22 and Davis D (2010) Disconnect: The truth about cell phone radiation, what the industry has done to hide it, and how to protect your family. E. P. Dutton & Co. Inc., ISBN: 978-0-5259519-4-0

24) See also Wilke I (March 2011) Prof. Lerchls neuer Kampf [Prof. Lerchl's new fight]. Elektrosmog-Report 17-3.

25) Microwave News (22. Mai 2011) IARC Drops Anders Ahlbom from RF–Cancer Panel. http://www.microwavenews.com/Ahlbom.html

Part IV

The questionable treatment of citizens and their rights

Karl Richter

The previous parts of this documentation dealt with questions of scientific truth that are carried forward into health and environmental policies. These questions already touched on more sensitive questions of policies concerning sociopolitical aspects and our future. This last part of the documentation is also meant to spell out more precisely to what extent the distortions of the truth cause also fundamental damage to our democratic culture[1].

1. Negligence instead of precaution

For over half a century, the risks of smoking have been known. Yet, only for the past few years, the government has made serious efforts to counteract them. These kinds of delayed reactions to protect public health and the environment from adverse effects of industrial products are rather the rule than the exception in politics. In the case of smoking, their causes are particularly well researched.

In his book Doubt is their product[2], David Michaels describes how for decades the tobacco industry had been successful in casting doubt on well-verified knowledge about the health risks of smoking and delaying strategies to protect public health. Already the simple claim that the body of knowledge would not provide an adequate basis was sufficient to justify decisions of great economic significance. This method of deliberately casting doubt and denying risks developed by the tobacco industry has now become part of everyday business for other branches of industry that manufacture and distribute dangerous products, as well. The success of the method requires that the manufacturers find a sufficient number of scientists who deny the health risks of their products. And if they are as lucky as the mobile phone industry to combine some actual usefulness with a clear potential for addiction and a strong government partnership, success is guaranteed. By appointing the hired scientists as "experts" and placing them in national and international committees that give advice to our government, the consolidation of the desired status quo is usually ensured. This translates into substantial profits - at the cost of "body counts" (corpses).

The cooperation between government and industry based on economic interests has made the past century one of missed precaution. The more deeply the government became entangled in the business of industry, the higher became the price society had to pay for it. In a very impressive documentation, the European Environment Agency has shown to what extent the loss of human life but also long-term national economic losses exceed all initial economic successes[3]. From this analysis, it derives lessons on how precaution could go a long way toward avoiding new victim counts. So far mobile phone politics, however, are carried out almost systematically against all these lessons of precautionary policies that are mindful of the past and the future. And that which is praised as progress in interpersonal communication by those responsible, more and more citizens consider a staged event of joint political and industrial powers - at the cost of truth, health, and human rights.

2. The scientific and health policy anachronism of exposure limits

Mobile phone service providers, politicians, their scientific advisors, and often also our courts at federal and state level regularly refer to the German exposure limits, which supposedly ensure the protection of public health from the possible risks of electromagnetic fields. However, the background of these limits is questionable. They go back to the guidelines of the International Commission on Non-Ionizing Radiation Protection (ICNIRP), a private society of scientists headquartered in Munich that lacks democratic legitimacy and who also provides questionable guidelines for the extremely low frequency range. For the radiofrequency range, the WHO has adopted the limits recommended by the ICNIRP. In Germany, the Commission on Radiological Protection (SSK), the Federal Office for Radiation Protection (BfS), and the federal government have also adopted them. And even though, according to leading scientists these guidelines had accommodated the wishes of industry rather than the current body of research, they thus were given the appearance of scientific and democratic legitimacy.

The excessively high exposure limits for wireless technologies have been mainly justified with the same old line of argument for over half a century—initially mostly under the auspices of the military, but for the longest time now under commercial guidance. The discrepancy to the current body of independent research, however, has grown wider from year to year. Therefore, physicians and scientists have repeatedly demanded to drastically lower the current exposure limits, which permit almost anything and even promote the rampant boom of wireless communication technologies instead of counteracting it. The Salzburg Public Health Department considers a precautionary value of 10 $\mu W/m^2$ for outdoor environments and 1 $\mu W/m^2$ for indoor environments a biologically tolerable threshold level. An EU parliament's committee (STOA) recommended 100 $\mu W/m^2$. In its monumental research report, the BioInitiative Working Group calls for lowering the threshold level to 1000 $\mu W/m^2$ as a first easy-to-accomplish step until it becomes clearer how far we will have to go to consider the biology of life. In its white paper *Für zukunftsfähige Funktechnologien [For Sustainable Wireless Technologies]* (2008), the German branch of the Friends of the Earth (BUND), the German environmental organization with the largest membership, demands an enforceable protective threshold value of 100 $\mu W/m^2$ and a precautionary threshold value of 1 $\mu W/m^2$.
Against all opposition from the scientific and medical communities, the German federal government resolutely sticks to exposure limits that allow exposure levels of 4,500,000 $\mu W/m^2$ for GSM networks (D-Netz) and 10,000,000 $\mu W/m^2$ for UMTS networks. How it is possible that the government considers exposure limits as adequate that are a hundred thousand to a million times higher than those called for by numerous scientists based on the available body of research is a question that does not even penetrate the awareness of the responsible politicians anymore. Moreover, the fact that the overwhelming majority of the EU parliament has cast a vote of no confidence regarding the similarly high European exposure limits has not yet triggered a change in thinking.

In this situation, the brochure *Warum Grenzwerte schädigen, nicht schützen—aber aufrechterhalten werden [Why exposure limits cause harm, not protection—yet are kept in place]*[4] was meant to inquire less about the actual threshold of current or suggested exposure limits, but rather to detail the scientific parameters applied to establish limits. In this brochure, eight scientists from different but complementary perspectives all come to the conclusion that the current exposure limits are based on anachronistic assumptions and do not correspond to the latest body of research in life sciences.

Let me detail this contrast for a few selected but especially important points:

- The exposure limits for the protection from biological effects of radiofrequency radiation have been established based on physical aspects of energy absorption. With this approach alone, they already contradict any modern scientific definition of human life.
- They are based on the assumption that only thermal effects can cause damage in biological organisms and current exposure limits reliably protect against those. Yet the multiple times verified genotoxic effects, for example, have been triggered well below the current exposure limit for mobile phones and thereby confirm the assumption of nonthermal effects.

- The exposure limits do not consider the duration of the effect, which is of utmost importance in all environmental exposures. How important it is with respect to the effects of electromagnetic fields has been shown among others by the scientific papers of Prof. Karl Hecht[5].
- Contrary to popular claims, plausible mechanisms of biological effects have been known and verified for quite some time: cellular stress with the release of free radicals, which can be the cause for various disorders[6].
- Insofar as the effects are perceived by those affected, they are often claimed to be the result of somebody's imagination, fear, and psychological disturbances. Why also small children, animals, and plants can show clear responses to radiation exposures is simply ignored.

Prof. Klaus Kniep, lawyer and co-author of the same brochure, states clearly: The exposure limits, which were meant to ensure the right of protection, have basically become a tool in the hands of the government to oppress this very right.

Kniep not only refers to Article 2.2 in the German constitution and Article 174 of the Treaty of Rome where this well-known right of protection is firmly established, but he also refers to a less often quoted Article 20a in the German constitution: "Mindful also of its responsibility toward future generations, the state shall protect the natural foundations of life and animals within the framework of the constitutional order." This makes "the responsibility of all government bodies for the future" a „goal of the government"—which the government does not fulfill at all with its wireless technology policies. According to Kniep and an increasing number of other lawyers, this seems to be not the only point in which the practice of exposure limit policies is in grave violation of the Basic Law and human rights but also the constitution and our constitutional democracy.

3. Disenfranchisement of those affected

At many levels, citizens experience the consequences of the established advice currently received by their government. The examples in Part III of the documentation have shown what kind of information municipalities as well as members of parliament are offered on which to base their decisions. If citizens turn to the ministry in charge because they have completely different information, they have long been given the same standard reply that serious risks below the currently valid exposure limits are not known to the responsible authorities. In an exemplary event, this is exactly what was recently told a Member of Parliament who had turned to the federal environment minister on behalf of the citizens in his region. A ministry official informed him on 6 September 2010 that an amendment and revision of the Ordinance on Electromagnetic Fields of the Federal Immission Control Act (26th BImSchV) is in the works. She promised that during the review process of the exposure limits "available scientific findings" would be considered. But at the same time, she was also careful to point out to the Member of Parliament that "at this time there are no scientific findings available that would scientifically challenge the currently valid exposure limits".[7]

Restricting checks and balances and the resulting consequences

The enforced conformity of all government entities in the name of purpose-specific information restrictions and dramatically elevated exposure limits has significant consequences for an increasing number of people. What more and more scientists and physicians have long considered—based on the latest body of research—to be the legitimization of negligent bodily harm and homicide is interpreted by the government, with their advisors, as a constitutionally accepted reality of society. That the courts also follow this line of argument and make the exposure limits the basis for their decisions drastically compromises the checks and balance between legislature, executive, and judiciary, which is essential for any functioning democracy. The logical consequence is a caricature of what otherwise is envisioned as an intact democracy ruled by law, far beyond the suspension of the right of bodily integrity and protection:

- Art. 1 of the German constitution explains: "Human dignity shall be inviolable. To respect and protect it shall be the duty of all state authority." Article 1 of the Charter of Fundamental Rights of the European Union is worded in a similar way. How does such a provision go together with policies that classify sensitives as fakes and expect from an increasing number of people that—for the sake of commercial interests—they will live in basements, trailers, and wear protective clothing and must give up their apartments and houses?
- To also protect the weak and the more sensitive is a special quality feature of any democracy. Electrosensitive individuals, however, are rather frequently referred to psychiatrists by "experts" who are not medical doctors and who could find nothing else but compliance with the exposure limits. And the government then uses these experts to certify a steadily increasing minority of electrosensitive individuals that they do not exist—or should not exist.
- We have a neighbor law that is issued to protect neighbors from each other's nuisances. In light of this law's stipulations, is it not perverse in the extreme when everybody is permitted to rent out his or her roof to have an antenna installed whose main radiation emissions the neighbors would have to cope with?
- The mission of democracy includes the protection of property (Art. 14 of the German constitution). The devaluation, which is a direct result of being located close to mobile phone base stations, can reach the point where the property cannot be sold anymore, which is basically the same as being dispossessed.

The fragile protection within your own "four walls"

For many years, Lawyer Eduard Christian Schöpfer has addressed the violations of wireless communication politics against the assurances of the European Human Rights Convention[8]. Meanwhile, the number of lawyers who do expose such violations grows steadily.

Only recently, the former Judge Bernd Irmfrid Budzinski has spelled out these observed contradictions in the context of the government's questionable behavior regarding the protection of homes. The European Court of Human Rights has applied the right to respect a person's home according to Art. 8 Sec. 2 ECHR explicitly to the exposures from mobile phone base stations. The so-called indoor coverage, which penetrates a homeowner's four walls 24 hours a day, would therefore require a legal authorization according to Art. 8 Sec. 2 ECHR, for which Budzinski does not see any basis: "This type of deliberately 'forced supply' within your own four walls, which goes beyond anything that has been known about sufferance of exposures, could in a state under the rule of law only be accepted based on a comprehensive regulation, also in connection with an insurance protection that is completely lacking to date."[9]

Even the German Commission on Radiological Protection, which does not exactly suffer from exaggerated fears, requires "for each radiation exposure" a "justification"[10]. As far as the practical application of the government's wireless communication policies is concerned, however, the will of the occupants of a given residence is not considered and that which is considered as a "justification" is mostly limited to assumptions downplaying the risks as well as arguments concerning the technical and economic appropriateness, as could be observe in the example of LTE technology. Another example would be the new wireless network of so-called smart meters, which are supposed to monitor energy consumption. While people in those regions of the world where they were first installed have run into disturbing health problems, European citizens are obviously next to be forced to suffer the electric meters within their own four walls where they permanently radiate similar to a mobile phone in the home and thereby make indoor coverage irreversible.

Although we now are in a situation in which international research confirms the biological risks of radiofrequency radiation in more and more new studies. Budzinski points out in particular that the impact on the central nervous system has by now been largely verified. Among others, he refers to the Swiss Federal Office for the Environment: "The Swiss environment agency FOEN considers the microwave radiation emitted by mobile phones a "probable" cause of 'changes in brain potentials and sleep phases'"[11]. The lawyer refers to five additional environment agencies from various countries—including the German Commission on Radiological Protection in the previous statements—which after the review of numerous studies found "strong indications" for this type of effects and consider disturbances of the central nervous system caused by radiofrequency radiation as "probable." It would not be surprising that headaches and sleep problems in the population might steadily increase if a permanent exposure to electromagnetic fields were permitted within a person's own four walls and at night to influence the brain even during this biologically necessary phase of recovery.

Budzinski also shows the government does not have any "supply mandate" to deliver across house walls to the inside of homes, though claims have been made to this end time and again. Meanwhile, this fact has gained in importance because the WHO has classified radiofrequency radiation as "possibly carcinogenic" on 31 May 2011 (Group 2B of 5)[12]. The right of citizens, as emphasized by Budzinski, to decide for themselves about the risks they should be exposed to within their own four walls must be respected more than ever.

Despite all the possibilities of legal whitewashing, government, industry, and their science advisors maintain a position that has gone far beyond the assurances of the European Human Rights Convention and their establishment in the German constitution. The profits and conveniences of one group require from another portion of society considerable health-related and material sacrifices as well as a major loss of their quality of life. A growing number of affected citizens accuse political authorities of having auctioned off their health, their environment, and the quality of their life as part of the auctions of all these new technologies—while having been poorly informed and deceived about the international body of research by their advisors.

4. Trends of an "economic machiavellism"

In his paper A Machiavellian Spin. Political and corporate involvement with cell phone research in Australia, the researcher Don Maisch describes a development in Australia that lends itself to a comparison with our German situation[13]. While research institutes and the Australian government had shown responsibility regarding the possible risks of radiofrequency radiation during the first years of the past decade, he has since observed how scientists and a government agency that mostly serve corporate interests have increasingly taken over. At the same time, he also notes a growing distance from the independent international research. He sees a trend toward an "economic machiavellism" that in the name of corporate interests revives a political style of past centuries known for its contempt of ethical values.

The reading of this remarkable paper is rather disconcerting because Don Maisch's detailed description of the Australian situation coincides to a great degree with the German development. All parts of the documentation presented here illustrate consequences whose most crucial preconditions are found in placing economics above ethics. They also show, however, that with the establishment of this hierarchy, roles and functions within our society have been rearranged to such an extent that they cannot be reconciled with intact structures of a constitutionally-based democratic society:

- That **corporations** place the security of their profits above the protection of life is nothing new. However, it would be less dangerous if the government would fulfill its constitutionally provided mandate to control corporate greed for profit with respect to possible adverse effects of the population[14]. This, however, does not happen where the government places this very control in the hands of industry-friendly experts and, because of its own entanglement in corporate business, has no interest in any effective control.
- The **expert** who takes his responsibility to protect the public seriously has the duty to tell the government where the line has to be drawn between what is allowable and what is not. The industry-friendly expert that the government, with its wireless communication policy, counts on denies and obfuscates the difference between political and economic interests.
- **Citizens**, who are the actual sovereigns of any democracy, have been eliminated as a possible correction to these risky field trials at two levels. Insofar as citizens still trust the government or are seduced by advertising and various conveniences, they become the driving forces of this development. Citizens who have come to the conclusion, together with many scientists and physicians, that the currently unfolding development is unsustainable, are deprived of their power as a result. Citizen democracy has turned into corporate dictatorship—exercised with the aid of the government.

References

1) Compare also the other publications:

Richter K and Wittebrock H (eds.) (2005) Kommerz, Gesundheit und demokratische Kultur. Gewinner und Verlierer in einer Modellregion des Mobilfunks [Commerce, health, and democratic culture. Winners and losers in a model region of wireless technologies]. Röhrig Universitätsverlag, ISBN 3-86110-394-X

Richter K (2006) Mobilfunk und Demokratie im Widerstreit. Der gesellschaftliche Preis eines fragwürdigen Fortschritts [Wireless communication technologies and democracy in conflict: the cost to society for a questionable progress], in: Karl W und Schöpfer EC (eds.) Mobilfunk, Mensch und Recht [Wireless Communication Technologies, Humanity, and Rights]:35-53.

2) Michaels D (2008) Doubt is Their Product: How Industry's Assault on Science Threatens Your Health. Oxford University Press. ISBN 978-0-19-530067-3

3) European Environment Agency (2002) Late lessons from early warnings: the precautionary principle 1896-2000. http://www.eea.europa.eu/publications/environmental_issue_report_2001_22

4) Adlkofer F, Hecht K, von Klitzing L, Kniep K, Mosgöller W, Richter K, Scheiner H-Chr, Warnke U (2009) Warum Grenzwerte schädigen, nicht schützen – aber aufrechterhalten werden. Beweise eines wissenschaftlichen und politischen Skandals [Why exposure limits cause harm, not protection—yet are kept in place: evidence of a scientific and political scandal]. Effects of Wireless Communication Technologies brochure 4.

5) Among others, summarized in: Hecht K (2006) Strahlende Energie und die Folgen für die Gesundheit der Menschen [Radiant energy and the consequences for human health], in: Runge M, Sommer F, Oberfeld G (eds.) Mobilfunk, Gesundheit und die Politik [Wireless Technologies, Health, and Politics]: agenda Verlag GmbH & Co.:33-62. ISBN 978-3896882882

6) See also the paper by Ulrich Warnke: Ein Wirkmechanismus der Schädigung ist beweisbar [An effect mechanism of causing harm can be proven] (2009) in the report listed at endnote 3; and the same author (2009) Ein initialer Mechanismus zu Schädigungseffekten durch Magnetfelder bei gleichzeitig einwirkender Hochfrequenz des Mobil- und Kommunikationsfunks [An initializing mechanism of harmful effects caused by magnetic fields with simultaneous exposure to radiofrequency radiation of wireless communication technologies], in: umwelt medizin gesellschaft 22(3):219-32.

7) We have the documents on file; to protect these persons, the names from both sides are not revealed here.

8) Among others, compare Schöpfer EC (2006) Grund- und menschenrechtliche Defizite im Bereich des Mobilfunks am Beispiel Österreichs [Deficits of fundamental and human rights in the area of wireless communication technologies in Austria], in: Karl W and Schöpfer EC (eds.) Mobilfunk, Mensch und Recht [Wireless Technologies, Humanity, and Rights]:73-92.

Schöpfer EC (2010) Mobilfunk: Späte Lehren aus frühen Warnungen? Zugleich eine Anmerkung zur Zulässigkeitsentscheidung des Europäischen Gerichtshofs für Menschenrechte vom 3. Juli 2007, Bsw. Nr. 32.015/02, Hans Gaida gegen Deutschland [Wireless communication technologies: late lessons from early warnings? Also a commentary on the legal admissibility decision of the European Human Rights Court from 3 July 2007, Hans Gaida vs. Germany], in: Natur und Recht [Nature and Law] 32(1):27-34. (an abridged version available at www.diagnose-funk.ch/downloads/schoepfer_spaete-lehren-aus-fruehen-warnungen.pdf).

9) Budzinski BI (2009) Bei Notruf – Funkstille. Wie mobil funkt der Rechtsstaat? [Making an emergency call—but no transmission. How mobile does the constitutional state act?], in: Natur und Recht [Nature and Law] 31 (12):846-57. – B. also speaks about a type of "actively pursued connection enforcement" in extralegal space, which at least would necessitate a "wireless communication technology law" with explicitly authorizing regulations and sufferance rules—also for the relationship between "emitting" neighbors.

10) Compare with: Justification: Criteria for the evaluation of practices and procedures. Recommendation by the German Commission on Radiological Protection. Adopted at the 205th Meeting of the SSK on 16./17.02.2006. http://www.ssk.de/en/werke/2006/kurzinfo/ssk0602.htm (only in German)

11) Swiss Federal Office for the Environment (2007) High-frequency radiation and health (2nd updated edition):10. English summary: http://www.bafu.admin.ch/publikationen/publikation/00059/index.html?lang=en German complete edition: www.bafu.admin.ch/php/modules/shop/files/pdf or www.bafu.admin.ch/publi-kationen/publi-kation/00059/index.html?lang=de

12) International Agency for Research on Cancer (Mai 2011) IARC classifies radiofrequency electromagnetic fields as possibly carcinogenic to humans. Press release No. 208. http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf

13) Maisch D (2011) A Machiavellian Spin. Political and corporate involvement with cell phone research in Australia: Corporate and governmental dominance has deprived research on non-ionizing radiation in Australia of its scientific basis. http://www.pandora-foundation.eu/downloads/maisch-don_a-machiavellian-spin_2011.pdf

14) See also Harrer F (2005) Die Flucht aus der Verantwortung – rechtliche, politische und kulturgeschichtliche Perspektiven [Escape from responsibility—legal, political, and cultural perspectives], in: Richter K and Wittebrock H (eds.) Kommerz, Gesundheit und demokratische Kultur. Gewinner und Verlierer in einer Modellregion des Mobilfunks [Commerce, health, and democratic culture. Winners and losers in a model region of wireless communication technologies]:157-164. Röhrig Universitätsverlag, ISBN 3-86110-394-X

Outlook and concluding questions

The knowledge about possible health risks of radiofrequency radiation gained by national and international organizations obviously has not yet penetrated to the radiation protection committees of Germany. Three of the latest resolutions (two from international organizations, one from Russia) may illustrate—in comparison to the German statements quoted in Part III—how differently the current international body of research and necessary health policies can be evaluated:

The Russian National Committee on Non-ionizing Radiation Protection (RNCNIRP) urgently warns against the damaging effects on children

In April 2011, the Russian National Committee on Non-ionizing Radiation Protection (RNCNIRP) issued the resolution *Electromagnetic Fields from Mobile Phones: Health Effect on Children and Teenagers*. This is a response to national and international research findings that have shown a clear increase in adverse health effects in children and adolescents that in all likelihood can be linked to their use of mobile phones[1]. The analysis of latest statistical data suggests an especially strong association between mobile phone use and the alarming increase in disorders of the central nervous system and blood-forming organs. In 15- to 17-year-old adolescents, for example, disorders of the central nervous system (CNS) are said to have increased by 85%, epilepsy or epileptic syndromes alone by 36%. Blood disorders and immune system disorders have increased by 82%. Similar findings, even though the actual numbers are somewhat lower, have also already been observed for children below 14 years. The authors of the resolution recommend developing legal, scientific, and educational programs to quickly and drastically reduce—with the help of the media—the radiation exposures of children and adolescents.

The European Council calls for a change in wireless communication radiation politics

On 27 May 2011, the Standing Committee of the Parliamentary Assembly of the European Council issued a resolution with the title *The Potential Dangers of Electromagnetic Fields and Their Effect on the Environment*[2]. The resolution recommends that the member states take measures to reduce the public's exposure to electromagnetic fields, to reconsider the scientific basis of the current exposure limits, to inform the public about possible long-term health risks, especially with respect to children, and to pay particular attention to the suffering of clearly electrosensitive persons. It also calls for promoting research of comparably efficient technologies that have no negative impact on humans and the environment. The discrepancy between the demands of this resolution and the trends in wireless communication radiation politics of Germany could not be greater. While the German public is showered with ever more assurances of safety, the European Council calls for a major paradigm shift in wireless radiation politics.

The International Agency for Research on Cancer of the WHO (IARC) classifies radiofrequency radiation as a possible risk for brain tumors

At the end of May 2011, the IARC, the cancer research agency of the WHO, classified radiofrequency electromagnetic fields as "possibly carcinogenic" as a result of the increased risk of brain tumors observed in several epidemiological studies[3]. This decision, which now has been spread around the globe, is based on the results of a working group meeting of 31 scientists from 14 countries. The chair of the work-

ing group considers the evidence already "strong enough" to support the chosen classification. Given the consequences for this classification and the implications to public health, the IARC director notes that "it is important to conduct additional research into the long-term, heavy use of mobile phones." The classification "possibly carcinogenic" is based on a consensus wrestled by the 31 scientists. Facing a scientific problem, this type of consensus rarely reflects the true state of knowledge, rather it reflects the average of the opinions represented by the participating scientists. The selection of the participants, therefore, determines the expected decision in advance. The dubious nature of such a compromise becomes very clear when—as occurred in the IARC vote—the minority opinion is faced with a majority opinion that does not recognize radiofrequency radiation risks at all. To classify radiofrequency radiation as "probably" carcinogenic to humans would probably have been closer to the truth.

Questions to the responsible authorities in Germany

The documentation presented here describes the absolute absurdity of a government that is confronted with strong warnings by international research, but leaves the assessment of these risks to the one person, i.e. Prof. Lerchl, who can be expected to downplay the risks. The documentation raises two questions that are addressed to the responsible authorities:

1. Is it responsible in this situation to place public health, the environment, and the future of our children in the hands of a scientist who regularly demonstrates his close ties to the industry as well as his poor scientific and ethical competence?

2. Does it not speak against the ethics of a functioning democracy to deny the most fundamental human and protective rights from a growing number of affected people by using such dubious means to legitimize policies?

Prof. Dr. med. Franz Adlkofer

Prof. Dr. phil. Karl Richter

References

1) Resolution of Russian National Committee on Non-Ionizing Radiation Protection (April 2011) Electromagnetic fields from mobile phones: Health effect on children and teenagers. http://www.diagnose-funk.ch/assets/df_bp_rncnirp_resolution-org_2011.pdf

2) Resolution 1815 of the Standing Committee of the Parliamentary Assembly of the Council of Europe (May 2011) The potential dangers of electromagnetic fields and their effect on the environment. http://assembly.coe.int/Mainf.asp?link=/Documents/AdoptedText/ta11/eRES1815.htm http://www.diagnose-funk.org/politik/politik-int/europarat-fordert-kurswechsel.php

3) International Agency for Research on Cancer (Mai 2011) IARC classifies radiofrequency electromagnetic fields as possibly carcinogenic ti humans. Press Release No. 208. http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf

About the Competence Initiative for the Protection of Humanity, Environment and Democracy e.V.

The Competence Initiative for the Protection of Humanity, Environment and Democracy e.V. is a registered non-profit society whose work has met with great approval far beyond Germany. The founding program Health is not a commodity! and the statue inform about its goals. Both documents can be downloaded from the Initiative's website at www.kompetenzinitiative.net, where also important results of recent projects can be found.

The Initiative, whose work is managed from three different offices in St. Ingbert, Kempten, and Dornach (Switzerland) regards itself as an international, interdisciplinary, and non-partisan society. It is committed to the change necessary in public health and environmental policy, especially with regard to mobile phone and wireless communication technologies. The brochure series Effects of Wireless Communication Technologies (also see www.broshuerenreihe.net) addresses the same issues. First translations of the brochures of this series are available online at the above Internet address; others are in preparation.

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This documentation describes the entire absurdity of a government that is confronted with urgent warnings of international research findings, but entrusts a scientist with the risk assessment who is known for his close ties to industry and dependable assurances of safety:

"Part I of this documentation illustrates Prof. Lerchl's passionate efforts to denigrate the authors and invalidate any of their scientific findings that are alarming or contrary to his position that wireless technologies are safe. Part II discusses his scientific contributions to the German Mobile Telecommunication Research Programme (DMF) in which he did not refrain from manipulation to support his untenable assertions. Part III provides examples as to how single-mindedly he put the conveniently trimmed research findings into political practice and made them the gold standard of policy advisement and public education. Part IV shows how the distortions of the truth are perpetuated, also in our common culture." (from the foreword)

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