

The Laughing stock - and the pursuit of Gro

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"Is there a cell phone switched-on in this room?". Gro Harlem Brundtland looked straight at the journalist. They were in an office in the Directorate of Health in Oslo in march 2002. The former Prime Minister, now Director-General of the World Health Organisation and with permanent residency in Geneva, was on a quick visit. On that occasion, the 62-year old was to be interviewed by the newspaper Dagbladet about the war against the tobacco industry. But that day, Gro was up against a completely different industry. The things she said would cause international attention. The journalist had become aware of rumors that the WHO boss was allergic to radiation. Gro confirmed it. *"It's not the sound, but the waves I react to. And the sensitivity has become so severe that I react to mobile phones closer than approx. four metres"* Gro said.

Initially she had felt a strong heating around the ear. *"But the symptoms progressed into nausea and headaches each time I talked on a cell phone"*.

And now she could sense that a cell phone was switched on in the room. The journalists phone was off. The newspaper photographer snatched his phone out of his jacket. Also switched off... No! wait a minute. It was just muted. The phone was still switched on.

Gro had attempted to cut down on mobile phone conversations. That didn't help. Everyone working at the WHO in 2002 had mobiles. She was surrounded.

"To avoid suspicion of hysteria", Gro said. *"Just so that no one should think that this was something I imagined, I performed many tests: I had people come into my office with a cell phone hidden in a purse or pocket. Without my knowledge of it being switched on or off, we tested how it affected me. I have always reacted whenever the phone has been switched on. So there is no doubt."*. Therefore, mobile phones were banned around Gro. Norway's own "mother", the great former prime minister and WHO's top chief was *electro-hypersensitive*.

Sitting in one of the hundreds of offices in the WHO headquarters in Geneva was the 57-year old Australian Michael Repacholi. He could not believe what he was reading. News of Gro's electro-hypersensitivity went around the world. Repacholi was the architect behind the recommended exposure guidelines that guaranteed the world's population that mobile phone radiation is harmless. He was the leader of WHO's - and the world's - largest research project on cell phones and health. His message was always: No health effects have been proven. No reason to worry. No reason to issue any warnings.

And now his boss was saying that she *"didn't yet have enough scientific evidence"* to warn the world against mobile phones. In two to three years time, WHO's large research project, Interphone, would provide better answers Gro stated. *"But I do understand the scientists who warn"* Gro said. *"Some people develop sensitivities towards electricity and radiation from equipment like mobile phones and computers. Whether this sensitivity can lead serious health*

problems like cancer or other diseases, we don't know yet. But I do believe that we should implement the precautionary principle, especially when it comes to children".

Repacholi was shocked. He had been steamrolled. Ridiculed. Something had to be done. And he had an idea what to do.

«WELCOME ON BOARD. We wish you all a pleasant flight».

I have squeezed myself into a middle-seat on a Norwegian Airlines flight.

"As the first airline in Europe We are delighted to offer you wireless internet on board!"

Then, we are bombarded:

"Get Connected on one of our many WiFi planes."

"Free WiFi on flights Between Oslo and Stockholm."

"New! Call and cancel your dentist appointment from 30,000 feet."

I imagine Gro. The reddening colour of her face, while I observe the passenger next to me turning on his mobile phone and calling his wife to ask when dinner will be ready.

I have sent a request to interview Gro. There are several good reasons why I want this interview. One is my personal experiences. Another is this book whose pages I am flipping: *Disconnect. The TRUTH About Cell Phone Radiation, What the INDUSTRY has Done to Hide It, and How to Protect Your FAMILY*. The author Devra Davis, cancer researcher and former member of the UN's climate panel, dwells by the fact that Gro resigned as chief executive of WHO in 2003, the year after she suggested that mobile phone industry could be a health hazard. Coincidence? *"Hell no"*, says George Carlo, known as head of one of the world's largest research projects on mobile telephony and health. *"Brundtland did not resign voluntarily"* Carlo states in the book. *"This was orchestrated by one of her subordinates, Mike Repacholi. What happened was that the Board of WHO asked Repacholi if there really could be any validity to Brundtland's concerns. Repacholi told them Brundtland had to be crazy."*

Could this be true? For a moment it could at least appear that the WHO's senior management had identified its next enemy - after the tobacco and sugar industries.

Was it Repacholi who got her kicked out?

I think I know what Gro was talking about. For several years I've claimed to feel the radiation from mobile phones. When I hold a mobile phone close to my head, I can feel a pressure around the temple, a kind of faint headache. At home, I have begun to switch off the wireless network when we aren't using it. Better safe than sorry.

When the Norwegian Radiation Protection Authority issues a statement in the media, the message is that mobile radiation is harmless. But can we trust the experts? Can we be sure that Gro was wrong?

For ten years, Gro has been silent about her electro-hypersensitivity. In the meantime, we, the press have done our best to confuse the public:

"mobile phones can cause Alzheimer's disease", VG, 2003.

"No cancer risk from mobile use", NTB, 2006.

"mobile phones can give you cancer", TV2, 2009.

"Ban mobile phones for children", Dagbladet, 2009.

"Mobile: A large biological experiment", Aftenposten, 2010.

"mobile phones can cause cancer", BBC, 2011.

"Experts dismiss mobile cancer alarm", VG, 2011.

In the late 90's, Dagbladet, the newspaper where I worked back then, took my pager and swapped it for a Nokia mobile phone. Great excitement. Since then we have we have experienced a mobile revolution. In 2012: five billion mobile subscribers on this planet inhabited by seven billion people. Basestations are everywhere. Wireless networks in homes, in workplaces and schools. And now falls the final entrenchment; the sky!

This is not good news for the electro-sensitive. They constitute, according to research, from 1½ to 10 percent of the population, in most case, half a million Norwegians. Gro is not alone.

"Get connected" chants Norwegian Airlines. On previous flights I wouldn't dare switch it on. So I think about Gro. Would Gro manage to keep quiet? I muster the courage to press the button above me. The stewardess approaches through the aisle. Blonde, beautiful lady. She leans over the passenger sitting to my side. I say to her - in as low a voice as possible - *I'm electro-hypersensitive and I've got a headache from the wireless network. Can you to turn it off?* She leans in closer to me, leaning over the woman sitting next to me and asks me to repeat louder.

- *Do you have a headache now?*

Yes.

- *One moment, I'll go check with the captain.*

The monumental building on Drammensveien was built by Prime Minister Hans Rasmus Astrup, with contributions from King Haakon and Queen Maud. The podium is surrounded by huge chandeliers and oil paintings of greats such as Einstein and Nansen.

The grey-coloured assembly is buzzing with chatter. This is the Academy of Science.

Tonight's theme: "Is radiation from mobile phones hazardous?" Speakers: A Swedish professor, a department chief from the Norwegian Radiation Protection Authority and the Chairman of the NGO: the People's Radiation Protection Initiative. It is a victory for the latter to finally get to debate the Radiation Protection Authority, and to do so in such a prestigious setting.

"First, some practical information" the moderator announces. *"You must please switch off your mobile phones. Do so not only out of politeness. Some in the audience are actually electrically sensitive"* he says, probably without realizing what he just said.

A tanned man, 60 years old, commands the microphone.

Leif Salford, a professor at the University of Lund in Sweden, looks out into the audience.

"New frightening report: - Poisoning your brain"

"mobile phones can damage the nervous system"

"mobile phones hazardous for children"

"mobile phones can cause Alzheimer's."

These horror stories stem from Salford and his colleagues' research. And have you never experienced it yourself? When you hold the phone to your ear? The heat? The head feeling "cooked" after a long conversation? The onset of a headache?

Researchers argue about a lot of things when it comes to mobile phones, but not this part: Every time you press the device to your ear, high-frequency electromagnetic fields penetrate your brain. The mobile phone has become public property. Most schools in Norway have installed wireless networks, as well as our workplaces and homes. In addition, the basestations of the mobile towers on rooftops in your neighborhood, with radiation powerful enough to penetrate walls. Because there has to be coverage everywhere. Even at 30,000 feet in the sky. Even in the most desolate areas. Wait a minute! What is actually happening? Salford gazes into

the audience. Five billion people have a mobile phone, he repeats. There are now no control groups for scientists to compare with.

- *Are we lab rats in the world's biggest biological experiment?* Salford asks.

A PowerPoint presentation shows the brains of some of the thousand rats they've studied during the past 15 years. And let us just imagine for a moment that what happened to Salford's rats, can happen to you. In that case, it doesn't matter if you are within two meters from a mobile phone that's in use, or 200 meters from a basestation. The radiation from these sources may open the blood-brain barrier.

This is a barrier that should not be opened. It's there to prevent toxins in the blood from entering into the brain. Among other things, there is a protein called albumin, which is normally barred by this checkpoint protecting the brain. According to Salford's research, it seeps in, when the brain is exposed to mobile phone radiation. Salford also presents images of rat brains shortly after exposure. The brain is covered in dark spots. Dead neurons!

If all this is happening to your brain, it will probably exhaust itself combating those intruders. It will deplete its reserve capacity. This shortens the path towards cognitive problems, dementia, Alzheimer's and other diseases. And will do so even if you are young. Assuming the same thing happens in the human brain as happens in those rat brains.

Salford is not certain.

- *But the most probable scenario is that these non-thermal exposures have the same effect on the human brain,* he said. And Salford is not the only one. Already back in the 90's, some scientists began to sound the alarm that mobile phone radiation could damage DNA. And that can be the first step on the road to cancer.

National radiation authorities, WHO, the majority of the researchers and the mobile industry have largely denied all probabilities of any serious health risks. But didn't it take 40 years before "The Establishment" acknowledged that smoking kills? Didn't the pillars of society support one of history's most destructive industries until the health risks were undeniably proven?

Is it happening all over again?

Is the world's population lined up, once again, as lab rats, risking lives and health? Was this the scenario Gro feared?

- *I can not walk around freely, no.*

It's a ten year old boy who's saying this. Tobias is his name. He lives in Orkdal south of Trondheim. He is like any other ten year old, playing computer games. But he must be careful not to get ill, so he must stay at home. Next to the door bell at the entrance of Tobias' home, there's a stop-sign forbidding mobile phones. A network cable connects Tobias' computer in the living room. It runs through white plastic canals, following the floor panels, through the wall and into the router in the hallway. Wireless is banned.

It is a nice, cozy home with candles and even a chandelier. But Tobias's mother thinks of their home as a prison.

- *What kind of places are you unable to visit, Tobias?*

- *Hmm ... I can't go to all the friends that I want. There are some that won't turn off the wireless internet.*

- *Do you ask if they can turn it off while you visit?*

- Yes.
- *What do they say?*
- *Sometimes they say they can't ... But other times they're nice and switch it off!*

In the early 90's, his mother, Tove Kvernvik started feeling ill. During the years it got worse and worse. She had shortness of breath, was less energetic and could not sleep. She was diagnosed with the autoimmune disease chronic sarcoidosis. In addition, she got iritis. The pupils of her eyes had wounds that would not heal. She also had cataracts, it was like having gray veils before her eyes and she could not tolerate much daylight.

She could go for two to three months without getting more sleep than an hour here and there. She went to a psychologist and took sleep medications. She worked as a bioengineer at a hospital laboratory - a place with relatively high levels of radiation. The family was an early adopter of technological innovations like mobile phones, computers, cordless phones and WiFi (wireless internet). They were unaware that the house was insulated with aluminum coated paper. They think it may have created a kind of microwave-oven effect.

- *One day during the summer of 2010 I asked my husband, completely out of the blue: didn't all this start when we installed the wireless network in our house?*

They removed the wireless router and the cordless-phone and hardwired the internet.

Immediate results:

Tove was almost symptom-free, and lost a few pounds as well. Then they noticed something else. Eight-year-old Tobias' personality suddenly changed. He had always been a well-behaved, creative boy, but also completely "propeller", as they say. Flamboyant and occasionally tired and weary. Every night he woke after having nightmares and sleepwalked too. He had eczema and wounds on his hands. He had headaches and stomach aches. They struggled to get him to eat. He had difficulties concentrating. "The letters dance around on the pages", he said.

- *After we removed the wireless router, we finally had eye contact with him. For the first time his eyes stopped darting around when we spoke to him. The nightmares ended. He was refreshed in the morning. It was quite strange.*

They called the headmaster at Tobias' school, happy to have discovered how to make the boy feel better.

- *We were so naive. We did not realise that we were walking into a war says Tove Kvernvik.*

"Completely unthinkable" wrote the Government Radiation Protection Authority. That simple. So brutal. The principal contacted the Radiation Protection Authority when Tobias' parents asked the school to hardwire their network. "From a radiation protection point of view, it's pointless to replace the wireless network with cable - it will have no effect" wrote the Radiation Protection Authority's Lars Klæboe.

"Tobias (10) has not attended school this fall" said the posting in NRK Trøndelag last fall.

He was home-schooled and was healthy.

At lunch break he walked to the playground and played with his classmates. The parents had no choice, they say today. The Radiation Protection Authority's opinion was that the parents should consult a doctor in order to find out what was really making the boy sick.

Within a few months, the parents had read up on the research and information that appeared as an alternative to the Norwegian Radiation Protection Authority.

Tove became chairman of the Association of Electro-sensitives in Trøndelag.

In November, the association invited the Swedish researcher Olle Johansson to speak about health risks posed by wireless radiation. Suddenly they heard that NRPA would also be holding an information meeting. Three days before theirs. In Orkdal. For, among others, the teachers at Tobias' school.

What's wrong with Tobias' parents? NRPA has said that it is "unthinkable" that they become ill from the radiation. So why do they engage in a seemingly hopeless battle? After nearly 20 years as a journalist, I have come across the occasional nut-case. The parents of Tobias are not among them. They are progressive. A music teacher and a bioengineer. They've studied this topic. They are critical towards the authorities, who on a November day used 54 slides to convince the Assembly of Orkdal of one thing: that Tobias and his parents are imagining that radiation can make the boy sick. Everyone agrees that the radiation from basestations and wireless networks can heat your brain - a so-called thermal effect. But how much does it need to heat up your brainmatter before it's damaged? It depends primarily on the frequency of the mobile towers in your neighborhood. Are they GSM900-phones that have a frequency of 900 megahertz, or 3G which has a frequency of 2100 megahertz?

The radiation must be intense enough to penetrate through walls, but not so strong that it damages your brain. The Norwegian Radiation Protection limits were prepared in 1998 by the Foundation ICNIRP, the International Committee for protection against radiation. ICNIRP is represented as an independent expert panel of scientists, that since the 90's has been dominated by honorary member and chairman emeritus Michael Repacholi. Repacholi was the architect behind the limits that Norway upholds - and also the man who could not accept that Dr Gro claimed to be electro-hypersensitive.

ICNIRP concluded that if the radiation does not cause a temperature increase in any part of the body of more than 0.02 degrees, we are more than safe. Then no damage occurs.

If you press the phone directly against your ear, other limits apply. Repacholi then measures how much radiation is absorbed into the head. This is called the SAR value. It must not exceed 2W per kg. And no mobile phones sold today, may exceed that limit. Thus: Mobile phones are safe! To this, Tobias' father, the Peoples Radiation Protection Initiative and other researchers would add: What about the long-term biological effects? What about the non-thermal effects?

According to Repacholi and co, such effects are not documented. They do not exist.

We'll just have to trust them.

Tobias' parents were not invited to the open meeting in Orkdal, although in fact it was their case that prompted the meeting. But Tobias' father, Arild Herigstad, was sitting in the back of the audience anyway. From there he could listen to the Government Radiation Protection Authorities Lars Klæboe explain that the exposure from basestations and mobile phones add up to as little as one percent, often only one thousandth, of the limits defined by ICNIRP. And what about the radiation from wireless networks like Tobias and his mother experience health effects from?

"The exposure from wireless networks as is usually around a hundred thousand times below the guidelines", Klæboe said.

In other words: Go home and surf the internet. Have fun with the technology. It's completely harmless. If you think it's making you ill, then that's all in your mind.

Then Klæboe displayed the invitation that Tobias' mother had created for the open meeting in Trondheim that would take place three days later: A photo of Professor Olle Johansson from the Karolinska Institute. The text said: "Increasing use of wireless networks seems to cause more and more health problems in people". All this against a backdrop of a green meadow with daisies. This was science versus the ridiculous. Arild Herigstad sure felt ridiculed.

Was this the category that the "mother" of our country and the world's top health chief had ended up in - after her sensational interview in 2002? Is that why she has since remained silent about her suffering?

I feel a bit ridiculous myself. One thing is to have a disorder caused by something that is invisible. Even worse, if the condition does not exist.

The stewardess approaches me. Will Norwegian Airlines accommodate my wish? Will they - like the moderator at the Academy meeting - announce over the loudspeakers that the wireless network must now be switched off, because they actually have an electro-hypersensitive passenger on the plane? Or will it be, "Sorry, but according to WHO and the Norwegian Radiation Protection Authority you don't really have a headache. Here's a fact sheet about radiation. Enjoy your flight"?

I'm feeling a bit guilty. Right now, I'm not feeling that pressure to the temples. I just want to know how they'll react.

The stewardess leans in, almost on top of my fellow passenger and says:

- I spoke to the captain. He says that the wireless network switches on automatically when we exceed 10.000 feet. It is not possible to override and deactivate it.

That's a relief. Because I am struggling to identify myself with them. Take for example the two electro-hypersensitive ladies who have been living in a cave in France for a long time. Or those victims who, from time to time, emerge in silver mesh clothing. I read about an British electro-hypersensitive woman who has fled to a cottage somewhere on a Norwegian mountain plateau. It's easy to imagine that something has to be wrong here. The parish priest in Flekkerøy came forward with his measuring device and accused the State of "damaging and killing the population". He wasn't referring to Afghanistan.

Yes, there's a seriousness behind all these stories. Sometimes, desperation. Not being believed provokes me too. For I myself recognize these waves - time and again. Or is it just too much coffee? Too little sleep? I can't manage to be as convinced as environmental activist Kurt Oddekalv, who vandalised mobile towers in protest against the government's alleged betrayal of the victims of this radiation. Perhaps he was inspired by the Australian EMF activist who was jailed a few years ago after destroying mobile towers with an army tank. The feeling of being in an episode of the X-files is never too far away if you get into a conversation with the leaders of an interest group like the Peoples Radiation Protection Initiative. I'm still told that a critical article I wrote about the Government Radiation Protection Authority back in 2009, is no longer searchable online. It is impossible to track down. Disappeared without a trace!

I mention my own suspicions about the effects of wireless radiation, after a long conversation at the home of the leader of the Peoples Radiation Protection Initiative. He knows that I have four children. And a wireless network too. "Thomas, you must not expose your children to this", he says. I feel like I'm being recruited. Everyone is so intensely involved in the CAUSE. It's almost

like a cult. To begin with, Tobias' mother also felt like that. But suddenly she became the leader of FELO Trøndelag (*Association of electro-hypersensitives in Trøndelag*).

It's different with Gro. For ten years she has kept quiet about her electro-hypersensitivity. Gro is involved in the major global issues. She keeps talking about how the world should solve its biggest challenges. And this is her main advice to politicians: "In my professional and political life I have always wanted to build upon the principles my father taught me: Base your policy on sound scientific knowledge".

Her press contact, Jon Morland, keeps rejecting my inquiries. "Gro is very busy with a packed schedule", he writes in an SMS (text). Of course she is.

The fight for our climate, for the planet. Not the hysterical. Not the ridiculous.

Not the fight against people like Mike Repacholi.

"They thought they could scare us". Gyro Sølvsberg is afraid of heights but climbs up the ladder, past the Telenor sign - warning of radiation danger - and onto the roof. It's about half the size of a football field. Blue sky. Breathtaking view.

Nesodden, Bunnefjorden, Holmenkollen (places). And behind some islands you can get a glimpse of the top of City Hall. Thick bundles of black cables wind their way around the gray rooftop and disappear into three antennas that look like extended broomsticks made of steel, pointing towards the vanilla sky. I'm standing a few feet from these antennae. Next to us, I can see the other terrace blocks and townhouses that make up the total of 300 apartments in the condominium of Vestskrenten Holmlia in Oslo. Gyro, the 56-year-old woman in front of me is manager of the housing cooperative. She is calm and low-key. Maybe someone thought it would be an easy task to convince her?

Five years ago, the Board of the housing cooperative was contacted by the Directorate of Emergency Communications. They needed the cooperative's approval to install antennas for the new, nationwide emergency network. Before that, Telenor had put a basestation on the roof. - *We accepted, after giving it much thought. We thought of our responsibility towards the community. After a while the board received a complaint from a resident. She complained of fatigue. She was healthy when she was away from home, and it became worse and worse. In the summer of 2010 we recorded measurements and began surveying people while trying not to alarm anyone.*

It was a difficult balancing act, says Sølvsberg. The survey showed that residents in about 15 apartments reported that various health problems had onset after the antennas were installed. Insomnia, headache, fatigue, heart problems. Several explained that the symptoms disappeared when they were away from home.

Now, four years after the antennae were installed, two families have moved because of it, according to Sølvsberg. Some residents have been taking sleep medication or headache tablets daily. Some dare not go out onto their balconies. Others are concerned about the long-term effects. They do not believe the Radiation Protection Authorities' promise that only short-term heating can pose a health risk, and even though that's only a theoretical risk. NRPA has said, that as a precaution, people should avoid placing wireless routers in bedrooms. But several residents in the housing cooperative have field strengths in their bedrooms that are many times higher than that of a router. The radiation is safe, according to the Radiation Protection Authority. I can understand that, for the residents, it just doesn't add up.

- They belittle all our concerns. And have suspected and ridiculed us from day one.

Already in the autumn of 2010, they'd had enough. They cancelled the lease with the Directorate and Telenor. But it was not that simple. Last fall - after a long tug of war, involving lawyers, the Peoples Radiation Protection Initiative and local politicians - a letter dropped into the mailbox of the housing cooperative. The Directorate for Emergency Communication was determined. There had been enough talk. Gyro Sølvsberg had to rub her eyes in astonishment. The State would expropriate the roof of Holmlia. Sølvsberg looks at me - defeated. We have been up on the roof for fifteen minutes, standing just a few meters from the emergency network antennae. I don't feel any headache or nausea. But I'm thinking: Why is it so important for the State to force this? Why can't they allow the residents of Holmlia to have their rooftop in peace? Why this opposition against respecting people's sincere concerns?

"You know this lady!" The voice belongs to Gunnhild Oftedal, a researcher at the University College of South-Trøndelag. She is the foremost expert on electromagnetic hypersensitivity, and is lecturing on the topic at the Student Sceptics Association at NTNU in 2008. "What is more damaging? Radiation or worry?" is the title of the lecture which I have found a recording of on the Internet. "Gets headaches from mobile phone radiation", Oftedal reads from an interview in newspaper Dagbladet, and continues: "Gro Harlem Brundtland, 62, head of the World Health Organization - and we might add: graduated as a medical doctor! - gets headaches from talking on mobile phones. In addition to that, people in her proximity must switch off their phones if she is to avoid discomfort. Gro believes that she is electro-hypersensitive. How persuasive must her word be for all those wondering: Maybe I am electro-hypersensitive? They are probably sure after listening to Gro!". In her lecture, Oftedal emphasizes that those who claim to be electro-hypersensitive do have real symptoms. Research has just not been able to document that the symptoms are caused by radiation. The symptoms are most likely due to something else, like for example, other diseases or "psychological mechanisms". That message is not well received by everyone. Like when she meets with people from the associations of electro-hypersensitives. Some of them have felt threatened, according to Oftedal. "For some of them it's important to maintain an identity as electro-hypersensitive", she says. And I ask myself: Is it so certain that this denial of electro-hypersensitivity will hold up?

I wander through the half-melted snow in Trondheim's streets and enter an area with huge building of concrete and glass. At the end of a corridor: a cubicle with a desk, no bookshelf and the 59-year old Gunnhild Oftedal. Can she bring me closer to an answer: is there any possibility that Gro and I can actually feel the radiation from mobile phones?

Oftedal is a member of the Government-appointed expert committee, that at the time of writing, is finishing a comprehensive assessment of health risks from mobile phone radiation. She sits on international committees in this field. In 2007 and 2008, she and her colleagues published studies of a number of Norwegians who claimed to get headaches from mobile phone use, just like Gro. Sometimes they were exposed to radiation similar to that from mobile phones, other times they were "bluffed". The conclusion: the test subjects reported feeling headaches both when they were exposed to radiofrequency radiation - and also when they were sham-exposed. Oftedal & Co. concluded, just like the WHO did back in 2005, that electro-hypersensitivity is therefore not documented as a real phenomenon.

What most likely happens, according to Oftedal, is that people expect a negative health effect related to the mobile phone. This expectation causes headaches. It's called a nocebo effect - the opposite of a placebo. In other words: If I get a headache and believe it's caused by mobile phone radiation, then it's all in my mind.

And why would I imagine this?

Researchers blame unfounded horror stories in the media about health effects from mobile phone use. The media hysteria is supposedly especially bad in Scandinavia.

And they point to yet another phenomena: "In Norway, the former Prime Minister and leader of the World Health Organisation received, and still gets, lots of media attention for her claims of getting headaches from mobile phone use" they write, and claim that "a nocebo effect has been induced in the population". "It is very unfortunate that she, in her position, came forward with cocksure conclusions based on her own experiences, without having to rely on research. As the Director-General of the World Health Organization, she had easy access to such information", Oftedal tells me today. Newspaper articles, in which the scientist appears, have a tendency to downplay dangers of mobile phone use. But what about Oftedal & Co's own research? Is it bulletproof? Is Gro's claim demonstrably wrong?

There are researchers who believe they have documented the existence of electromagnetic hypersensitivity. Professor Andrew Marino at Louisiana State University has conducted research on electromagnetic fields and health since the 70's. Double-blind tests of a person who claims to be electro-hypersensitive showed that she experienced pain, headache, muscle-spasms and irregular heart rhythm half a minute after exposure. The study was recently published.

- *If we can prove that one person consistently has somatic reactions after radiation exposure then we have shown that electromagnetic hypersensitivity is real. That is precisely what we have now shown, says Marino.*

I ask him to consider Oftedal and colleagues' study, where the scientists rejected the possibility that electromagnetic hypersensitivity is caused by mobile phone radiation. We talked again a few days later.

- *This is an incredibly poor study. It was designed to fail. These researchers seem to want to brand electro-hypersensitives as neurotics, says Marino.*

He believes that the test subjects have been misled, and that scientists had "decided the outcome in advance". They reveal themselves, he believes, by writing: "When negative results are firmly established, as we believe they are in the present field, it is important that they are used to combat irrational fears and widespread nocebo effects".

- *That's a terrible thing for a scientist to say.*

Marino says it appears that researchers had selected test subjects who were overly concerned about their electro-hypersensitivity.

- *Their enthusiasm makes them poor test subjects, he said.*

The subjects were asked how much pain they felt before, during and after real exposure - or sham-exposure. Marino says this approach opens the door for big flaws. One must only measure change from no-pain to pain, he says. The Research Council sponsored half of the study. Marino claims that the report is characterized by the fact that the mobile industry - Telenor and NetCom - have sponsored it.

- *In Norway we have "firewalls" that ensure researchers' independence, I object.*

- *If you want to believe that, then believe that*, he replies.

- *There was no firewall*, said Gunhild Oftedal. The electro-hypersensitivity study was part of a larger project. The Research Council agreed to fund half.

- *We were told to secure the rest of the funding ourselves*, she said.

So Oftedal contacted government agencies', as well as Telenor and NetCom. Then she sent applications for financial support, with a copy of the project description. The companies could only accept or decline.

- *Some would like to think that the researchers consequently are controlled by the industry. My personal opinion is that all funding should go through the Research Council*, says Oftedal.

Financial support was provided during the period of 2002-2006.

Oftedal believes that firewalls between researchers and industry have become more common in recent years. This kind of sponsorship would not happen today.

But she denies that she was influenced.

She describes Marino's criticism as being way off mark.

Oftedal wonders how he should know what she and the other scientists thought, before they proceeded with the investigation. Everything published in the study is based on the results.

It is also incorrect that they chose extremely electrically sensitive test subjects, she says. They chose people who believed there was a close correlation between their headaches and mobile phones. These are very natural and appropriate to include in such a test, according to Oftedal.

Oftedal says Marino is also wrong in claiming that the test subjects felt pain at the beginning of the experiments. In most of the tests, the subjects started out without headaches.

- *But it is equally important that there were no systematic differences between the symptoms in the sham tests and the real exposures*.

She agrees that it requires a lot to draw conclusions from negative findings, that electromagnetic hypersensitivity does not exist.

- *However, since many studies point in the same direction, it is important to consider other possible explanations for electromagnetic hypersensitivity*.

Marino suggests that the mobile industry sponsored Oftedal & Co., because her research is consistently harmless for the industry.

- *But two of the three studies I published prior to this, indicated effects. One showed that 20 percent of subjects experienced discomfort in the head, fatigue and concentration problems in connection with mobile phones*, says Oftedal, upset at the criticism.

CARTELS. RESEARCHERS BOUGHT and paid for by the telecom industry. The other side's critique of Repacholi, ICNIRP and the "recognized" scientific community, is reminiscent of the early criticism of the tobacco industry. Is history repeating itself?

Because we can't see the smoke, we don't believe it exists? Will movies be made in the future about how the big telecom companies and their allied researchers made life miserable for those researchers who simply sought the truth? There are already a couple of stories, diligently cultivated by the other side.

Professor Franz Adlkofer did research for the tobacco industry for years, before switching over to electromagnetic fields. Initially he thought he had ended up on a side track. But instead, as the mobile revolution was taking off, he found himself at the center of action. As head of the EU's prestigious research project REFLEX, he presented in 2004, a startling discovery:

radiofrequency fields, at strengths far below Repacholi's safety limits can damage DNA. This is the first step towards developing cancer.

Some years later, a big noise erupted in the German newsmagazine Der Spiegel. Adlkofer was accused of scientific fraud. Research Colleagues from "The Establishment" had been running a smear campaign. Those same people were later slammed for having close ties to the mobile industry. None of the committees investigating the fraud allegations, could verify them. But Professor Adlkofer's career was frozen. Now he travels the world lecturing on "institutional corruption" in the tobacco and wireless industries.

If you ask NRPA's Lars Klæboe about Adlkofer, he will say that no researchers have since been able to replicate those serious findings. When I ask Devra Davis, author of Disconnect, she says: The case with Adlkofer shows that the mobile war is like the war on tobacco all over again. War-Gaming, she calls it.

It's a war that's played out in a more sophisticated way than the tobacco war.

She refers to the well-known researcher Henry Lai of the University of Washington. Already back in the mid 90's, he and a colleague did studies that showed that the radiation destroys DNA in the brains of rats. The mobile industry is supposed to have attempted, a number of times, to get studies withdrawn and to discredit the researchers. But Lai was not going to stop.

In 1997, the U.S. telecom giant Motorola wrote the following in an internal memo:

"It is of vital importance that third-party experts, including respected authorities, without a background in RF, are identified in order to discuss the problem with Lai's study. We do not want Motorola appearing in front of cameras. We must limit our company's visibility and defer complex scientific questions to qualified and trustworthy experts. We have compiled a list of independent experts and will recruit individuals who are willing to - and have the opportunity to - reassure the public."

Against this backdrop, critics highlight the role of the international expert committee ICNIRP and its dominant figure in the past few decades, Michael Repacholi.

In 1996, two years before Gro took up office in Geneva, he was headhunted to set up the WHO's radiation project. The mobile phone revolution was looming, and far more scientists than Lai claimed to be able to document potential hazards.

The next ten years, Repacholi coordinated research on mobile telephony and health for the sum of 250 million dollars - according to Repacholi himself. He was the spider that involved all sorts of players, not to mention: the EU. Critics have emphasized that he allowed the mobile phone industry and defense industry to sit at the table - including a research planning committee. Repacholi's recommended exposure limits from 1998 also became the guidelines for the majority of member states, including Norway. The project was responsible for the world's largest study on mobile phones and cancer risk: Interphone. It involved the world's top researchers in the field, as Repacholi saw to. And who paid for it all? Repacholi listed two accounts in the budgets: Member States and "Others".

Only after he had left the WHO, ten years later, the funding sources were revealed to the public. As it turned out, already back in 1995 he had negotiated an agreement, on behalf of the WHO, with his old employer, Royal Adelaide Hospital in Australia. The hospital would receive annual donations from the telecom industry. The money was then transferred to the account of Repacholi's project at WHO. Just under half the money came from industry, Repacholi said.

In his latter years at the WHO, however, the “Others” account grew twice as large as the funds from member States. The largest contributors were the trade organizations GSM Association and Mobile Manufacturers Forum (MMF).

It might be conspiratorial to claim that Repacholi’s old employer was in fact laundering industry money. He explained that the hospital was a firewall that would secure the researchers independence. The mobile industry had to sign off on that they could not advertise their sponsorship or influence the researchers. But why keep the list a secret?

The hundreds of reports from Repacholi all came down to one main message to the world: No documented health effects from mobile radiation. It was what Motorola had hoped for in 1997, that the mobile industry would not have to stand in front of television cameras. The “independent experts” took care of that. The population was “reassured”. Value for money.

Everything had gone so well for so long.

But along came Gro.

The mobile industry must have been shaken. She had already been a challenge for the tobacco industry. Repacholi was humiliated. He knew that Dr. Brundtland was a tough cookie. But can it really be true that he went to the WHO Executive Board and branded her as a loony? And then we have this story, that I read in Microwave News, in its report from a 2003 Workshop on EMF in Dublin. A woman stood up and used the WHO chief Brundtland as proof of her suffering being genuine. Then a Norwegian researcher stood up and spoke. *«Brundtland's condition is somewhat of a mystery, because she has refused to undergo testing in order to verify her condition»*. When the journalist inquired whether anyone had asked the WHO chief if she would submit herself to testing, the Norwegian researcher Gunnhild Oftedal - according to the article - replied with a smile: *“No comment. I have promised not to say anything”*.

- *It can't be true, that I said that, Oftedal tells me today.*

- *Did you or someone within your circuit offer to test Brundtland?, I ask.*

- *I can not answer that. No comment. The only thing I can say is that it would have been reasonable of her to get tested.*

THE TRUTH IS out there. The headlights illuminate the road while we drive around Hafrsfjord and take measurements. On the roof of the car he has mounted a strange-looking small antenna, manufactured by German company Gigahertz-Solutions. I hear a faint scraping noise from one of the two instruments in the car. It logs the measured values, position and time. Through the dark I cannot see the two mobile towers that are sited across the road from an elementary school. But I can hear their electromagnetic fields. As we approach, the sound increases. As we pass the towers, opposite the school and an outdoor nursery, the sound becomes loud, eerie and discordant. And then it decreases. I get a flashback to the X-files. “Trust no one!”.

- *Completely insane to place two mobile towers here, right next to the school. I would never let my kids attend here. Not with what I know now, says Jostein Ravndal. An electrical engineer with a background from Statoil, he is one of about 25 people in Norway who measure the electromagnetic fields for people concerned. They get essentially the same values as when the Norwegian Radiation Protection Authority or the Post and Telecommunications Authority is*

taking measurements for concerned parents, school principals or kindergarten leaders. But they give very different advice.

“The authorities betray us”, according to the X-files.

And that's how they see it: Jostein Ravndal, the alternative-minded and the scientists who believe we are in the middle of a gigantic experiment on mankind. Since the mobile revolution has gained traction, there have been constant attempts to ridicule them.

But Ravndal can point to Salzburg, which has set its limits a million times below Repacholi's guidelines that the Norwegian authorities recommend. Does Salzburg have a crazy Health Chief? They can point to Russia, which discourages mobile use by children. It says that mobile phones pose a “very high potential health risk” for children. What does Russia know that the Norwegian Radiation Protection Authority doesn't?

In 2002, the same year that Dr. Gro came forward, one thousand German doctors signed the so-called Freiburg-petition. They raised concerns about an increasing incidence of heart-rate disorders, Alzheimer's disease, headaches, insomnia, ringing in the ears and brain tumors. They saw the explosive adoption of mobile and cordless phones as a likely culprit. Medical Groups in several countries followed suit by requesting Government's to lower the limits for exposure. In 2006, when Repacholi stepped down as leader of the WHO project, and after spending \$250 million showing that mobile phones are harmless, he was worried about only one thing: the public's growing concern. He called for more effective public relations and communications strategies to stave off the fear.

The following year, 14 scientists from around the world released the so-called BioInitiative report. They had reviewed over a thousand studies. They believed that the evidence linking electromagnetic fields to cancer and neurological diseases, was strong enough: Repacholi's limits had to be rejected. They did not protect the population.

“Rubbish!” was Repacholi's comment on the report.

The WHO and the EU system is full of expert committees who deny any suggestion of health risks. Nevertheless: In 2009, the WHO system was facing more opposition than ever before. Five international organizations and 43 researchers from 14 countries signed the petition “Mobile phones and cancer risk: 15 reasons for concern”. They accused the WHO of downplaying the risk of cancer and of protecting the mobile industry.

Even more threatening was the fact that the European Parliament endorsed the BioInitiative report. An overwhelming majority criticized Repacholi, and called for more radical 'precautionary' measures in schools.

The French government banned mobile phones in schools. This happened after health authorities had reviewed 2500 studies and found that one in ten shows that mobile phone radiation poses a risk.

I TRY once again to get a hold of the “mother” of our country. I want to hear her thoughts today, ten years after that controversial interview. Because it strikes me: The research concerns the French government. But not the Norwegian. Not NRPA.

I'm also becoming more interested in this Michael Repacholi. The Norwegian Radiation Protection trusts the WHO, which in turn trusts the old Australian who is now based in Italy.

Is Repacholi a man to be trusted? In 2006 he packed up and left the WHO office in Geneva. He is 67 years old now, but has by no means retired. Only a few months after leaving the WHO, he

was hired by a power company that was lobbying to prevent politicians from tightening limits for radiation. He has traveled to China and Russia, and argues, vehemently, that they also should adopt the ICNIRP limits. He appears to be the Grand Old man, using his status as ammunition to gun down scientific opponents. This year he is the lead author of a study that attempts to dissect the research of Lennart Hardell, the man who has demonstrated significantly increased cancer risks associated with mobile phone use. In a study from 2009, funded by the telecommunications company T-Mobile, Repacholi tried to demolish the rat studies of Leif Salford. Alexander Lerchl, a colleague of Repacholi, also participated in that study. He was supposedly a central figure in the smear campaign against Professor Adlkofer.

In 2010 the WHO's cancer research agency, the International Agency for Research on Cancer, IARC, decided to appoint an expert committee. The task was to assess the cancer risk of mobile phones. Lerchl had a strong desire to participate, but the committee rejected him. The committee could consist only of scientists who were "completely independent of commercial interests and also free of any biased advocates".

At the last moment another "outstanding scientist" was kicked off the expert committee: Professor Anders Ahlbom. He is an old friend of Repacholi. The press revealed that he sat on the board of his brother's company in Brussels. The company was involved in lobbying for the mobile industry. He had forgotten to write that on his declaration of possible conflicts of interest. Thus, a table was now laid for another Swede: Lennart Hardell.

Repacholi has dismissed Hardell as "an activist". But Hardell was now good enough for the committee and the WHO.

The story of Lerchl and Ahlbom is used by the other side to weaken the credibility of the "recognized" scientific communities. Likewise, the startling conclusion that the WHO experts presented last spring: Mobile use is "possibly carcinogenic". That's the message I *don't* want. One thing is getting a little headache. What worries me more is what I risk exposing my children to. On the other hand, if the radiation can cause cancer, where are all the mobile cancer victims?

IN SPRING 2010, the high-profile defence lawyer Johnny Veum, then 39, held a talk for 150 lawyers in the upcoming Conservative House in Oslo. It was supposedly compelling and rhetorical. But suddenly the text in front of him became incomprehensible. It lost all meaning. He had to stop reading. After five to six seconds the letters fell back into place.

He thought that he probably just needed some rest. On the doctor's recommendation, he was examined by an ear specialist. Everything was fine. The doctor said he would send him for an MRI scan, just to make sure. Those pictures had him in a taxi, rushing towards Ullevål hospital. There he was, sitting on a hospital bed, with his medical journal in hand and wearing a hospital gown. Torn out of his normal existence. The Orderud case. The Munch robbery. The "Beagle Boys". Nokas. A bunch of murders. Large drug cases. This Bergen native was one of Oslo's youngest and most prominent defence lawyers.

- I was given my first cell phone in 1995. Which was quite early compared to friends.

In 1999 he started his own firm in Oslo. During the first few years he had no secretary and was on the phone constantly. The mobile phone was always switched on. Even on his nightstand.

The tumor was on the left side, where he always held the device against his head. He has never had any head injuries.

He felt that long conversations led to a unpleasant heating of the left brain hemisphere.

- *The neurologist deemed it plausible that the cell phone had caused the tumor*, said Veum, who has been healthy and working full time since his operation. Now, he always uses hands-free, and often sends text messages instead of calling.

Also Henrik Færevåg, a television personality from the 90's had a tumor in the brain. Before he died he went out in the media and said the tumor was caused by heavy mobile phone use over many years. There are several stories in the press about young Norwegian brain tumor victims who have claimed the same. Some are dead.

An American businessman announced a lawsuit against the mobile phone industry on the Larry King Show. The death of Ted Kennedy triggered an intense mobile phone cancer debate in the United States. But science has been against them. Recognized research has not made possible the kind of lawsuit that dealt a serious blow to the tobacco industry.

The tumor Veum had was of the type: glioma. These are among the types “possibly” caused by radiation, according to the conclusion of the WHO’s agency for cancer research. The message also caused the Norwegian media to sound the alarm. Until the Norwegian Radiation Protection Authority got onto the scene: “No cancer alarm”, it was corrected then. “Experts dismiss mobile cancer alarm”. How can NRPA be so sure?

How can they just dismiss the possibility that myself or my children are at risk of getting cancer from radiation? Now, that even the WHO can see a risk? Is the Agency fulfilling its mission: to protect us from potentially dangerous radiation?

I park in front of a brown brick mammoth building in a secluded industrial estate outside of Oslo. This is the location of the NRPA that holds about 100 employees. The 47 year old Klæboe leads us into a conference room. He is an intellectual type, who thinks quickly and talks fast, with a tone reminiscent of the famous defense lawyer John Christian Elden.

- *Yes or No. Can mobile phones cause cancer?*

Klæboe breathes in.

- *I can never answer like that. But I will say: It's unlikely.*

- *Do you then disagree with the WHO classification of mobile phone use as “possibly carcinogenic”?*

He chuckles.

- *No. But there are many aspects. When you ask about this, I'm considering in my mind how this information could be misused in society.*

The term “possibly carcinogenic” is portrayed as much stronger than it is intended, he said.

Klæboe believes, like Repacholi, that the WHO classification system is too general. The degrees of classification are: “Unclassifiable”, “Possibly carcinogenic”, “Probably carcinogenic” and “Carcinogenic”. In theory, it holds if only one researcher finds that mobile phone use causes cancer. Although the vast majority say the opposite, the IARC can classify it as “possibly carcinogenic”, Klæboe explains.

How does he translate the research into advice on mobile phone use and health?

Will he tell it like it is?

"It is not possible to determine a basis for risk. In fact, we find that cell phones may have some protective effect, but this may be due to flaws in the data".

This time he was commenting to VG (newspaper). It was about the Interphone study. The world's largest research project on mobile phones and cancer. The one that would provide Gro and the world with a definitive answer. 13 countries, 21 scientists, 5,000 brain tumor patients, ten years of research costing 25 million dollars. And the answer?

"Phones are not associated with cancer", the Evening Times wrote. *"Heavy mobile phone users at risk of cancer",* it read in the Sunday Times. Journal of the National Cancer Institute probably had the most aptly worded title, *"Interphone study provides one conclusion: The controversy will continue".* Confused?

In short, Interphone made three main findings:

1. In the group "regular mobile phone use for up to ten years" had a reduced risk of having a tumor. Probably biases within the data, the researchers said.
2. They found no increased risk ten years after first mobile phone call.
3. The ten percent of heaviest mobile phone users had increased risk of cancer.

The latter was mainly glioma, the same type of cancer that lawyer Veum got. The risk of having a tumor increased by 40 percent for those who talked for most hours on a mobile phone. But here the researchers said that statistical weaknesses and improbable biological mechanisms mean that you can't rely on those findings.

The main conclusion was: More research is needed.

The scientists involved in the study issued very different statements to the media.

Interphone's project leader, Elisabeth Cardis, said that "while more research is needed to confirm or refute these findings, there are indications of an increased risk in heavy and long-term users that warrant concern". The heavy-users group included people who used a mobile phone about half an hour daily.

Professor Maria Feychting, a member of both the ICNIRP and the Norwegian expert committee, was quoted quite differently: "The use of mobile phones for over ten years shows no increased risk of tumors".

In the Norwegian media, I see few signs that the Norwegian Radiation Protection Authority will draw any attention to the divide. Rather, Lars Klæboe is on line with Feychting; rejecting cancer risk. She is also his mentor, and together they have published many research papers. Klæboe has participated in several Interphone studies, including one that showed increased cancer risk. But his doctorate, also as part of the Interphone, showed that the more you talk on the mobile phone, the less the risk of cancer. What's next? The more you use your phone, the better lover you become?

Well, Klæboe concluded that those findings must be due to statistical errors.

But is it any wonder that we journalists are confused? And is it any wonder that people such as Klæboe are concerned that their comments will be misrepresented?

The more I read of the "reputable" research, with the WHO or EU stamp of approval - the more divergent it all becomes.

The main conclusion is usually: "No worries".

But dig into the tables and the picture is not always unambiguous.

- Are you too much an ambassador for your own research, towards the media?

- *If anyone claims that I am, then I'll take a debate on that, says Klæboe.*

But he believes Radiation Protection Agencies risk assessments are solid.

- *We are trying to popularize and generalize without going to any extremes. Maybe sometimes you have to be imprecise to get the message across. You present good arguments. We have to reconsider how to get the message out.*

Probably like a headline in the Norwegian media last year: *"No increased risk of brain cancer in children with mobile phones."* One of the authors: Lars Klæboe.

- *What do you think about the title?*

- *It's okay.*

- *But is it correct?*

- *Most likely.*

The Cefalo study, as it is called, will address the cancer risk of children's mobile use. 350 children with brain tumors between 2004 and 2008 are examined, as well as control groups of healthy children. Conclusion: No causal relationship.

Professor Devra Davis and two colleagues at the Environmental Health Trust slammed the study in a counter report. They believe the study's tables show "a doubled risk of brain tumor 2.8 years after the first time they subscribed to mobile phone service." On top of that it is 90 percent certain that the longer children use mobile phones, the higher the cancer risk. Also Professor Hardell has criticized the Cefalo study. And journalist Mona Nilsson says on her website that the Cefalo researchers have *"manipulated the study"*.

On criticism that the conclusion doesn't match the findings of the study, lead Cefalo researcher Martin Rööslö replies that "the results are reassuring since they are not statistically significant, and may therefore be due to chance".

- *Isn't it more correct to say that there probably is an increased cancer risk for children?*

- *After an overall assessment, no.*

- *If it was so, then we would have seen it in the cancer statistics, says Lars Klæboe.*

But consider this: what if all this has become a matter of prestige for Klæboe and his colleagues? That they would feel like failures if it does turn out that the mobile phone is one of the major health hazards of our time?

- *That's a scary thought, I say.*

- *I see it, but my desire is only to convey what we know today. It is highly unlikely that major health problems will emerge. It's so easy to cry wolf all the time. For years, these activist groups have claimed that mobile use is harmful. Don't they have any responsibility?*

I reveal to Klæboe that I sometimes feel a slight headache when I use a mobile or a laptop.

- *Is it simply my imagination when I think there might be a connection?*

- *That's not unlikely.*

I'd prefer Klæboe and the Radiation Protection Authority to be right. If not, then surely there is injustice being forced upon many people.

Devra Davis told me that she is terrified of what she calls *"the large, ongoing experiment on our children"*. The cancer epidemiologist is not most concerned about the cancer scenario. Most of all she is concerned that the radiation will damage children's brains and impair their development, memory and learning abilities.

Tobias' parents are still fighting to create a radiation-free zone in his classroom and surrounding rooms. Still, he has days where he is sick from radiation and stuck in bed. The moderator was understanding, and so is the new principal of his school. The obstacle is the Radiation Protection Authority and "recognized research".

Late February, Vestskrenten received a discouraging letter from the Post and Telecommunications Authority. They agreed that the Directorate of Emergency Communications could expropriate the roof of Holmlia. They were not swayed when the cooperative presented statements from doctors confirming that the residents' health problems were caused by - and maintained by - non-ionizing electromagnetic radiation.

Nor did it help pointing out that the Council of Europe has said that special consideration should be awarded the electro-hypersensitive when siting basestations.

Everything was rejected with reference to "recognized research".

But then we have people like Jostein Ravndal, a low-key, friendly, retired electrical engineer.

He places a large aluminum case on my kitchen table, takes out a black measuring instrument and connects an antenna that resembles a horse syringe. He checks the room while my four year old son is sitting on the floor, watching children's TV. The router is on a shelf only five feet away.

Ravndal's instrument emits a sharp, repetitive sound.

- *Here, where your son is sitting, the field strength is 3700 microwatts per. square meter, he says.*

- *Is that much?*

- *That's a lot. 170 is recommended.*

- *And the Norwegian Radiation Protection Authority limit?*

- *Ten million.*

He recommends that I replace the wireless router with some powerline plugs that make it possible to turn the mains into a wired network.

- *The strongest radiation in the house will then be 500 microW/m² - by the sofa, in front of the TV. That comes from the mobile operators' basestations in the neighborhood.*

That's not much. Ravndal recalls measuring 30,000 microW/m² in a school yard in Stavanger. So he does not think that 500 will be a problem, unless I'm electro-hypersensitive.

But Tobias could probably not visit me in my living room. Maybe not Gro either, hypothetically at least. She still won't talk to me. But she appears on TV one night. Does the "mother" of our country seem a bit uncomfortable as she unveils the bronze statue of herself? Is she just slightly uneasy about the canonization? Or is she struggling because of the radiation coming from the Prime Minister's mobile phone and the army of reporters?

AT TIME OF WRITING the Department of Health committee concludes its approximately 250-page report on mobile phone use and health. The committee is supposed to be academically broad and independent. I decide to take a closer look at the committee's top experts. From Norway: Lars Klæboe and Merete Hannevik from the Norwegian Radiation Protection Authority, Tore Tynes from the Institute of Occupational Health Research and Gunnhild Oftedal from HiST. From Sweden: Maria Feychting and Lena Hillert of the Karolinska Institute and Yngve Hamnerius from Chalmers University of Technology.

When I look at their research and their statements over the years, one thing stands out: they all appear like spokespersons for the claim that mobile phone use is unlikely to have any adverse health effects. They also support the ICNIRP limits. Feychting is even a member of ICNIRP. Several of her research papers formed the basis for Repacholi's recommendations from 1998. Several of the researchers have published studies together.

For example, Klæboe, Feychting and Tynes appear together in multiple contexts. Tynes supervised Klæboe's PhD and Feychting is his mentor. They're all accomplished researchers. But how much do they really have to discuss with each other?

This group is also characterized by the fact that the members are all in good company within research circles. They sit on national and international committees and organizations in the EU and the WHO system. Several of the agencies receive funding from the mobile industry.

Many of these experts are also in the most prestigious international research projects, such as Interphone, Cefalo and Cosmos. The projects are funded in part by the mobile industry, primarily via industry organizations such as the GSM Association and Mobile Manufacturers Forum.

Tynes, Feychting and Hamnerius are listed as "Funded Researchers" on the website of the Swiss Research Foundation on Mobile Communication (FSM). The foundation is funded by Orange France and other telecom companies.

Those studies use "firewalls" to ensure that researchers are independent of the industry. But research shows that industry-sponsored studies rarely show negative health effects from mobile use. These studies may also have higher quality than others, because they have access to more resources.

Oftedal has worked both in the military and for Telenor, but only for a couple of years combined. Recently she participated in a radiation study for the University of Bergen that was funded by the military. Lena Hillert, Sweden's foremost expert on electro-hypersensitivity, has had to endure media attention for having been on TeliaSonera's scientific advisory panel.

When Oftedal recently joined a group of experts at the WHO, she had to fill out a form about possible conflicts of interest. That is common practice at the WHO.

In the Norwegian expert group, the question of impartiality came up by chance, several months into the work. All members were then asked to fill out a form about possible conflicts of interest.

"The information is for internal use only" the secretary wrote - a promise he would later have to break. Only seven of the 16 members responded. Others are supposed to have delivered their declarations orally, I am told.

Most of the above information is derived from these forms. The rest I've dug up on the net or been informed by the current members.

On this "e-mail-your-declaration-of-conflicts-form", two of its members, Gunnar Brunborg from the Institute of Public Health and Petter Kristensen from the Institute of Occupational Health Research, stated that they own Telenor shares of 90.000 and 65.000 kroner, respectively. However, this is not viewed as a problem. At the WHO you are required to declare shares of more than 60.000 kroner, if those companies have interests in the topic of the meetings.

Committee member Bente Moen, from Bergen University, seems to be an alibi. She argued that EMF's are harmful in a case regarding Navy personnel exposed to radiofrequency radiation that fathered children with congenital anomalies. She has even publicly criticized the Norwegian Radiation Protection Authority. But she has not done research on mobile phone use and health.

I ask the manager, Jan Alexander at the Institute of Public Health, why they did not include experts who believe that mobile use is harmful.

“The group was assembled of the professionals we believed had the best scientific knowledge about the problem. We wanted people without strong opinions about radiation and health effects in any way or another”, Alexander writes in an e-mail.

I thought my quest for the truth about mobile phones would be about science only. But it's almost just as much about faith. Do I believe the experts? Does Gro know best if she actually gets sick from the radiation? Or does Oftedal and the scientific community know better? Do I believe Tobias? Does he really get sick if he's accidentally exposed to radiation?

What's certain is that Tobias has gotten used to not being believed. His friends have been taught that he's wrong.

- *They say there is no such thing as radiation. That it's not proven.*
- *What do you think about that?*
- *Ehh .. It's true that radiation is dangerous. I told a friend today that the moderator believes that radiation is dangerous. Then another one said that was nonsense.*
- *Is it important for you to be believed?*
- *It's no fun when my friends don't believe me.*
- *Why is it so important that others believe you?*
- *Because then I wouldn't have to talk about it, and stuff like that. I wouldn't have to hear people tell me that it isn't so when I say that don't feel well, and stuff like that.*

POWERS ARE IN PLAY. But could Gro have been pushed out of the WHO, because she stepped on a subordinate's toes and crossed the mobile industry? Or have I ventured into the realm of conspiracy theory? A few days later I get a hold of the originator of this claim, George Carlo. He insists that he's telling the truth, but claims that he must protect his source.

- *Brundtland complained that she was forced to leave. Before she realized what had happened, it was all over. She also complained that the people working for her had betrayed her. And it had to do with her strong statement that mobile phones have negative health effects, says Carlo.*

I mention to Devra Davis, author of the book where Carlo claims Gro was pushed out, that Gro declined an interview. Davis has met her occasionally. She asked me to relay the following message to Gro, via her press contact: *“It's a tragedy for the world that we have lost an important, credible voice on such a difficult issue like radiation from mobile phones. Those of us who understand the complexity and importance of the issue, have a duty to speak out about what we know, what we suspect and what we need to find out”.*

A few weeks later I get yet another text from Gro's press officer: *“As previously, we respectfully decline your request”.* A natural priority? Or is there another reason?

- *CALL ME Mike!*

The 67-year old Australian is sitting in the shade on a terrace just south of the city of Perth on the Australian west coast. It's 30 degrees in the sun. Michael Repacholi has short light-gray hair, glasses and is wearing a short-sleeved shirt and white shorts. He could easily slip into an

episode of Falcon Crest - the 80's soap opera. We are sitting face to face, in front of our computers, on each side of the globe. United by Skype and invisible radio-frequency fields.

- *As the father of the exposure limits, do you feel confident that they will properly protect humanity for the next 20 years?*

- *You know, research in the RF field has been going on for 62 years. We still haven't found anything that suggests that the guidelines are inadequate. What we absorb will always be much, much less than what's taken into account by the ICNIRP guidelines. They have built-in safety factors of over a thousand. So I won't hesitate at all in saying: All the facts and research clearly indicate that this will be safe for the next 20 years.*

- *Yes or no: Can my mobile phone give me cancer?*

- *No. There is no proof that your mobile phone can give you cancer.*

Repacholi refers to his recent review of all the research on mobile phone use and brain tumors. He conducted the study in collaboration with 14 of the world's leading epidemiologists, many of them sponsored by the mobile industry and related to ICNIRP. The review picks apart Lennart Hardell's research.

Repacholi "totally disagrees" with the IARC classification of radiofrequency radiation as "possibly carcinogenic" and "completely agrees" with those who think IARC has, unnecessarily, alarmed the world's population. He boasts that his early trips to Russia and China are now seeming to bear fruit. The superpowers will now adopt the ICNIRP limits, he says. On the internet, however, I find a study from 2010, sponsored by the mobile industry, where he challenges the stance of the leader of the Russian Radiation Protection Authority.

I ask what he says about being accused of ending up as an industry consultant.

- *I don't work for the industry. They do ask me to prepare reports. But I'm never paid by the industry.*

- *But the industry obviously pays you to write reports?*

Repacholi raises a finger.

- *I ... am ... not paid for ...*

Two seconds of silence.

- *Well ... No. I am. In some cases. Yes.*

But they have to publish what I write, not what they want me to write, he says.

ELECTRO-HYPERSENSITIVITY, SAYS REPACHOLI, was a phenomenon that originated in Scandinavia and spread throughout the world. But still, the problem is greater here than anywhere else in the world.

- *So you agree that such a famous person as Brundtland has caused fear in the population?*

- *I massively agree! Completely agree! That was such an unfortunate thing for her to say. She was the ultimate figure in world health.*

But what about Oftedal's secrecy? Did anyone really try to investigate whether the WHO boss got sick from mobile phone radiation?

During the conversation, the cat is let out of the bag.

It was Repacholi. He wanted to reveal Dr. Gro.

- *I said, "If you would like to get tested, can I get a laboratory. Then we can investigate this". But you know, she was three to four levels above me in the WHO. You can't tell her anything. She's a very strong lady. She doesn't like being told that maybe it's something psychological,* he said.

Repacholi recalls the first meeting. When Gro explained that she had become sensitive to light. This was caused by an accident involving a microwave oven in her home in Geneva. Her eyes must have been damaged by a sharp flash of light when she opened the door of the oven.

- She believed the radiation had escaped the oven and made her electro-hypersensitive. I said she probably just had placed some metal in the oven, and that it had sparked and caused a flash of light.

He scratches his nose. It's clear that he doesn't mind telling this little story.

- Even when I showed slides in dark rooms, she was wearing dark sunglasses. She was that photophobic.

If Mrs. Brundtland really believed something, you would never win an argument or achieve a reasonable conversation, said Repacholi.

Repacholi's next move was to tell the world what the science really said about electromagnetic hypersensitivity. That might not put the WHO boss in a good light. But science is science. A draft press release was prepared.

- Even that had to be approved by the office of the Director-General, he says, pointing towards the sky.

According to Repacholi, the first press release and fact sheet were rejected.

- If science disagrees with the Director-General... Then that's it. We couldn't do anything about it.

But did Repacholi really take matters to the WHO executive board in an attempt to get Brundtland axed, like George Carlo claims in Disconnect?

Repacholi snorts.

- That's nonsense. Complete nonsense. I would have never been able to approach the Board of WHO. Or get a Director fired, he said.

GRO was embarrassed to have given her grandchildren mobile phones as a present, she said in 2002. Repacholi, however, places no restrictions on the mobile use of his four grandchildren. On the contrary, he urges them to use their phones without any concern.

Only after our conversation I discover that a few years ago, Repacholi spoke at an industry-sponsored London conference for the promotion of mobile phones for children.

Still, he comes across as so convincing. And I want him to be right. I'm not like Gro, who had no doubts. In addition, it happens ever so often that I don't feel any effects when I'm close to sources of radiation. Just like now, during my conversation with Repacholi. Was it all in my imagination? Repacholi says he doesn't see any point in his grandchildren using hands-free.

- I know people are worried, and they're welcome to use hands-free. But if you are not concerned: Use your mobile phone as it is. And use it decently. That's all.

My mobile phone rings. I pick it up from the keypad, where it's been sitting during the entire interview.

- Sorry. I thought I'd switched it off.

- That's okay, says Mike.

- I hear by the ringtone that you have an iPhone. That's a Marimba.

He smiles contentedly. It's like this thing with my mobile phone just brought us a little closer. We are sitting on each side of the globe. But for a moment I feel like -- what was it they used to say in the old mafia movies? *Connected!*

English translation by Henrik Eiriksson.