Fear of phone masts

Human beings seem to have an innate fear of invisible forces. We read our horoscopes, wear good-luck charms, touch wood and cross our fingers. A popular souvenir bought by tourists in Turkey is a glass eye, or "nazar", which is a talisman to ward off the evil eye.

New technologies bring new unknowns and possible dangers. When the railways were invented in the nineteenth century people were afraid that traveling at such high speeds would be injurious to their health. At the start of the twentieth century people were worried about the possible health effects of light bulbs and the fields emanating from telephone wires on poles. No adverse health effects appeared, and these technologies are now accepted as part of everyday life.

Today, many people have a fear of mobile telephone masts, believing that the microwave transmissions from these masts will make them ill. Scientists have been studying the potential health risks of this type of radiation since the GSM system (Global System for Mobile communications) was introduced in the early 1990's. To date there is no evidence that radiation from phone masts can cause ill health. Still, some people who live near masts do become ill, and communities are afraid when one is installed nearby.

Why are we so afraid?

For one thing, scientists are unable to say with 100% certainty that phone mast emissions are not injurious to health. It is impossible to prove a non-effect definitively. Some of the research has been of poor quality and the whole question is highly controversial. Experts are attacked for lack of independence because they are funded in part by the phone industry. On the other hand, calls from researchers to be cautious are used by the opponents of phone masts to "prove" their point. They then publicize studies which appear to show the existence of health risks.

If you sift through claim and counter claim it becomes clear that the only known biological effect of microwave radiation is the heating effect used at high power to cook food in microwave ovens. The microwaves used for mobile phone transmissions are very much weaker and are attenuated by distance, so that any heating effect from a phone mast is negligible (though it may be significant when using a mobile phone near your ear). If there are any other effects, no one has discovered them yet, despite a lot of looking. However, this scientific uncertainty is unsettling for the general public.

Consider, too, that people who believe in the evil eye really can become ill through the belief that they have been cursed. Some people who live within sight of phone masts complain of bad health, confirmed by surveys carried out by means of interview and questionnaire. This condition has been recognised as "Microwave Syndrome." However it is impossible to rule out bias in studies based on survey methods.

Health authorities have long been asking for independent "double-blind" studies where neither the researchers nor the people being studied know whether they are being exposed to radiation. One carefully controlled, three year study was published by Essex University (UK) in 2007. They found that in the "double blind" tests, people who claimed to be especially sensitive to base station radiation were actually no better in sensing whether or not a base station was transmitting than were members of a control group. Neither group performed better than chance. However, if they were informed when the signal was on, the sensitive people reported lower levels of well-being and more symptoms.

The study concluded that microwave syndrome is not caused by radiation, but by something else. A strong belief that radiation from a mast is bad could create stress, inducing illness or enhancing an underlying condition. The syndrome may be stress-induced, but it is no less real to those who suffer. Interestingly the hypersensitive group in the Essex study tended to report a low level of general well-being. Perhaps their belief in the effects of radiation was born of concerns about their own ill-health and a quest to find causes for it.

Another, perhaps unexpected, contributory factor is the fact that phone mast emissions are regulated. This raises the question in people's minds: Why regulate something if it is not dangerous? Government authorities are well aware of past health scares. They do not want to be held responsible for any new ones in the future. So, just to be sure, phone mast emissions are regulated and guidelines have been published by the ICNIRP (International Commission on Non-ionising Radiation Protection). This regulation has had the unintended effect of creating concern and fear even in communities where it did not exist before.

The situation in Spain is further complicated by the structures of government and devolved regional and municipal powers. Some local authorities have drawn up their own ordinances with very strict rules. Six of the autonomous regions have each passed different laws concerning base station installation.

Here is a quotation from a lecture on base station regulation given at an international workshop: (2005)

"The Spanish situation is the most unstable, due to the strategies adopted by local and regional authorities, and court decisions which introduce still more complexity. Although government officials and experts tend to be consistent, the autonomy granted to communities and autonomous provinces provides these governments with opportunities to regulate on the matter with little consideration for scientific evidence, but strong concern for popular reactions.

They take this opportunity to demonstrate their responsiveness, while contributing to keeping the issue on the agenda. The result is a very sensitive situation and lack of effectiveness for the efforts of national authorities and operators alike - in other words, strong institutional incoherence."

Such confusion and mixed messages make it even more difficult for people to know what to believe.

We humans are more afraid of risks over which we have no control than those we take by choice. When a risk which seems to give no personal benefit is imposed on us by "them" (government and big companies), there is distrust and alarm. This is especially true in the case of exposure to phone mast radiation because the fields are invisible, the risk is not easily quantifiable, and the degree of exposure is

beyond our immediate control. On the other hand, if people choose to smoke for a lifetime, they have a 50% chance of dying from smoking-related disease. Smokers know this, but many continue to smoke and take the risk. The important element is the ability to choose.

Finally, phone masts are big, ugly and highly visible, which may explain why we focus our attention on them. New phone base stations are physically smaller and lower powered than their predecessors and their radiation comprises a diminishing proportion of the total radio frequency radiation we are exposed to. Perhaps our fear will diminish accordingly.

It seems perverse that we do not worry as much about our mobiles, cordless phones and Wi-Fi laptops. These use similar technology and are closer to our bodies. What about induction cooking hobs, baby alarms, microwave ovens, video senders, wireless burglar alarms and security cameras; television and radio transmitters? Our total exposure to radio and micro waves from all sources is growing daily.

This total exposure is now the focus of scientific investigation. Also, last year a Europe-wide study started looking at the long term effects of mobile phone use in order to determine if there are any risks of developing cancers of the brain and nervous system as well as neuro-degenerative diseases such as Alzheimer's and Parkinson's.

Somehow, I don't think anyone will worry excessively. We love our mobile phones too much, and, if we must choose, the perceived benefits will probably outweigh the risks in our estimation. (However, it might help to keep a "nazar" close by, just in case)

Bibliography

1. (Eng) WHO - Establishing a dialogue on risks from electromagnetic fields. (2002)

http://www.who.int/peh-emf/publications/risk_hand/en/

1. (Esp) OMS Estableciendo un diálogo sobre los riesgos de los campos electromagnéticos.
Estableciendo un diálogo sobre los riesgos de los campos electromagnéticos
http://www.who.int/peh-emf/publications/riskspanish/es/index.html

2. Mobile and Telecommunications Health Research Programme, Report 2007.
http://www.mthr.org.uk/

3. Study clears mobile phone masts of ill effects The British Journal of Healthcare Computing & Information Management July 2007- http://www.bjhcim.co.uk/news/1/2007/n707033.htm

4. Regulating the risks of mobile phone base stations: a comparative study in 5 European countries. Danielle Salomon and Olivier Borraz

Risques and Intelligence, France and Centre de Sociologie des Organisations (CNRS/Sciences Po), France. In: Proceedings International Workshop on Base Stations and Wireless Networks:

Exposures and Health Consequences

5. International Commission on Non-ionising Radiation Protection - Statement on EMF emitting new Technologies April 2008

6. ICNIRP website and publications: http://www.icnirp.de/PubEMF.htm

7 (Eng) ICNIRP Guidelines for limiting exposure to time-varying electric, magnetic, and electromagnetic fields (up to 300 ghz) (1998).
7 (Esp) International Commission on Non-ionising Radiation Protection e.V. - Recomendaciones para limitar la exposicion a campos eléctricos, magnéticos y electromagnéticos (hasta 300 ghz) (1998)

8. Base Stations and Wireless Networks: Exposures and Health Consequences.

Proceedings International Workshop on Base Stations and Wireless Networks:

Exposures and Health Consequences. Switzerland, Geneva June 15-16, 2005

Editors Mike Repacholi Emilie van Deventer Paolo Ravazzani

9. Mobile and Telecommunications Health Research Programme, Press release 2008.

http://www.mthr.org.uk/