

# How did electromagnetic hypersensitivity become a public issue? The case of France

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# Introduction

# What is EHS?

EHS is a condition characterized by the attribution of non-specific symptoms to EMF exposure, associated with coping strategies resting on the management of EMF exposure [1-3].

These symptoms and strategies deeply alter the lives of EHS people [4].

# Is EHS and electromagnetic condition?

The electromagnetic nature of EHS has proven impossible to establish.

- In experimental studies, no link between EHS people's reactions and EMF exposure in double blind conditions [5,6].
- In environmental studies, no meaningful correlation between estimated or measured EMF exposure in daily life and non-specific physical symptoms [7] attributed to EMF [8] or EHS complaints [9].

# Is EHS and electromagnetic condition?

The electromagnetic nature of EHS is also biophysically implausible: proven ELF-EMF and RF-EMF biological effects cannot explain the symptoms experienced by EHS people because...

1. Their health effects are qualitatively different (e.g., phosphenes or paraesthesia for ELF-EMF, local burns or hyperthermia for RF-EMF, as opposed to sleep disorders, headaches, cognitive disorders, etc.) [10].
2. Levels of exposure required for such effects to appear are much higher than those recorded in daily environments [11, 12].

# Electromagnetic hypersensitivity (EHS) : how to explain a seemingly irrational belief

How EHS people can be convinced of being sensitive to EMF when available scientific evidence overwhelmingly points to the contrary?

That question has already been addressed at the individual level, through the description of the “attribution processes” leading EHS people to self-diagnose as such [1-3].

Today, I will tackle it at the collective level: how did EHS appear and spread in France, to eventually become a social problem?

➤ *Consider EHS as a collective belief shaped by socio-political factors.*

# Methods

# Data & Analysis

Approx. **80 interviews** with various stakeholders: EHS persons, representative of EHS support groups, activists against cell sites, biophysicists, physicians

Large **set of documents** pertaining to EHS or EMF health effects in the French context: experts and media reports, movies, websites, mailings lists, books

Analysis through a **chronological and macrosocial approach**, aimed at retracing how EHS was socially constructed as an emerging environmental condition [14] and as a social problem [15] in France in the last 25 years.

1. *A founding controversy around cell sites and electromagnetic fields*

# Background

In the US, several controversies erupted around micro-wave ovens and power lines in the 1970s, video display terminals in the 1980s, and cell phones in the early 1990s [16].

No indication that these controversies spread to France, where the first controversy about EMF-emitting devices broke out in the late 1990s and developed in four stages [17,18].

# 1.1 Rollout of mobile telephony network and first reactions

Launch of mobile telephony in 1992 with quick commercial success

Proliferation of cell sites, some visually detrimental to their surroundings, without proper regulation of their siting (exclusive focus on exposure levels and electromagnetic compatibility)

First reactions from neighbours in 1998: complain on aesthetic and environmental grounds, without expressing health worries

## 1.2 Appearance on the political agenda and reframing as a health risk

Still in 1998 : local protests raise the interest of parliamentarians, who address several written questions to the government about cell sites.

These parliamentarians are contacted by a few whistle-blowers against EMF, already denouncing power lines and cell phones in the early 1990s, and profiteering from EMF worries (selling of exposure measurements, shielding apparatus, courses on EMF and health, etc.).

Worries about the safety of cell sites are relayed to the government, who takes them seriously, willing to restore its legitimacy after a succession of health scandals since the late 1980s.

## 1.3 Contestation of official expertise

The issue of cell sites is addressed exclusively as a health risk, leaving aside its other dimensions (visual impact and aggressive rollout) > depoliticization

Local protests keep multiplying and radicalizing: a national movement emerges in 2001 to federate them, who is also contacted by whistleblowers against EMF

First expert report in 2001 with contradictory conclusions: base stations are safe but antenna beams should be directed away from nurseries, schools and hospitals as a precautionary measure

Easy to discredit for activists against cell sites! Fails to reassure the public.

## 1.4 Extension and routinization of the controversy

- Cell sites keep proliferating as new communication protocols appear
- They keep triggering local protest as the problems they pose remain
- The authorities keep answering by commissioning expert reports
- Experts keep concluding that cell sites are safe in their regulatory conditions of use
- Activists keep challenging that conclusion, putting forward militant research
- The public remains doubtful
- The controversy occasionally spreads to other EMF-emitting devices (Wi-Fi routers, smart electricity meters)

## 1.4 Extension and routinization of the dispute

The issue of cell sites, since framed as a health risk in the early 2000s, has become unsolvable:

- The authorities cannot dismiss local protests and national activism against cell sites by fear of being accused of disregarding public health.
- Activists cannot acknowledge the safety of cell sites, which is now central to their claims.

The only solutions are found locally, when city councils decide to regulate the sitting of base stations by threatening mobile network operators to deny them the opportunity to use public buildings.

2. *A secondary dispute around electro-hypersensitivity (EHS)*

# Background

EHS people are not responsible for cell sites becoming contentious, and the ensuing controversy selectively focusing on health risks: This process was mostly driven by people living nearby, activist groups trying to federate them, and a few self-proclaimed whistle-blowers – none of whom were claiming to be EHS, or even sick.

Similar observations were made in the UK, the Netherlands, and the US [16,21–24].

In France, it was rather the controversy around cell sites that allowed EHS to spread.

## 2.1 The missing victims of cell sites

In the early 2000s, activists against cell sites encounter a difficulty: the absence of obvious victims, whose damaged health would prove the harmfulness of these facilities.

They allude to *future* victims likely to appear in tremendous numbers, accusing cell sites of promoting e.g. cancers and Alzheimer's disease.

They also discover non-specific symptoms among the neighbours of cell sites, which they attribute first to the microwave syndrome, then to EHS (although afflicted individuals do not regard themselves as such).

## 2.2 Emergence of an EHS movement

Nothing changes until 2005, when activists against cell sites start being contacted by people feeling sick because of electronic or electrical devices (not limited to mobile telephony).

Such attributions were likely not new, but had remained isolated as people feeling sick because of EMF were few and had no way of connecting to each others: in the 1990s in France, no one but specialists had heard about EMF, and Internet use was not widespread.

Activists against cell sites become a **rallying point** for them.

## 2.2 Emergence of an EHS movement

Activists against cell support this process, as it contributes to the appearance of victims.

Notably, a group campaigning for the “health safety of wireless technologies” creates an “EHS hotline” providing support and guidance to people wondering whether they are sick because of EMF: many EHS individuals I interviewed described their first call to that hotline as a major turning point in their trajectory.

Additionally, activists against cell sites are very active in the media, spreading the notion that EMF are harmful and making it easier for people not already knowing about them to attribute symptoms to EMF exposure.

## 2.3 Struggle for the recognition of EHS

EHS people steadily grow in number, reaching a few hundreds by 2010.

They create their own support group in 2008, independently from activists against cell sites, to learn to cope with their condition.

They come to regard themselves as victims, both of wireless technologies and of complacent authorities.

They start campaigning to have their condition acknowledged as a genuine disease, with core demands concerning the entitlement of EHS persons to health care and social benefits, an increased public awareness of EHS to avoid stigmatization.

## 2.3 Struggle for the recognition of EHS

The efforts of EHS people met with limited success:

- The public acknowledgment of EHS has progressed...
- But not its medical and legal recognition, apart from repeated calls to further research...
- While the number of EHS people remain in the low thousands (in a country with 66 millions inhabitants)

# Discussion

# What sense to make of the spread of EHS in France?

Consistent with the hypothesis that EHS is not primarily a belief system, generating symptoms among people worried about EMF [25].

EHS rather appears as a coping strategy for people with pre-existing medically unexplained symptoms, which makes it similar to other “functional somatic syndromes” such as fibromyalgia, chronic Lyme disease or chronic fatigue syndrome [26].

# What sense to make of the spread of EHS in France?

But unlike these conditions, EHS was never really endorsed by French health professionals, probably because EHS people's claims are too extraordinary to believe.

Physicians tend to dismiss EHS as a “psychosomatic” illness that it would be professional incompetence to mistake for a “real” disease [27].

As a result, EHS remains exclusively self-diagnosed.

EHS activists failed to secure allies in the struggle for the recognition of their condition: without the controversy around cell sites, EHS would likely never have gained sufficient momentum to impose itself as a social problem.

# What sense to make of the spread of EHS in France?

Another specificity of EHS is its adverse consequences for the people identifying as such: their efforts to reduce their exposure to EMF prove costly and rather ineffective in alleviating their symptoms, so that they often end up in objectively worse situations (e.g., still sick after having spent all their savings on EMF-shielding apparatus, lost their jobs, etc).

A really important question to address is thus: how can we help self-diagnosed EHS people to find better ways of coping with their symptoms?

This might require a firmer stance from health authorities and the scientific community regarding EHS.

Hence a concluding question: given what is already known about EHS, what would it take to acknowledge that it is *not* an electromagnetic condition?

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