



Cycle Assessment of 6G Signal: Can 6G Provide the Antidote to our Fear?

A century of blaming signals for our sickness: Is 6G's AI-guardian the ultimate antidote, or our most invisible trap yet?.

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Introduction

Whenever we get wireless technology something predictable happens. People start to worry.

It's not how fast the connection is or how good the signal that gets people talking. What really gets their attention is the fear of what these invisible waves doing to our bodies. This has been going on for over a hundred years now. Every time a new technology comes out it's like clockwork. A new technology. Then a health problem shows up around the same time. Away someone tries to link the two.

The truth that makes us uncomfortable is that the more we use technologies, in our lives the easier it is to blame them for things we just don't understand about wireless technology and what wireless technology is doing to us.

" We are wired to look for causes when bad things happen, and invisible technologies make convenient suspects."

Overview

There are many variations of the same story throughout history, each of which evokes the same level of fright as before.

The Spanish Flu of 1918 and the Rise of Radio:

When the world came together as a global community during the late 19th century with high-powered radio technology, there was an outbreak of the Spanish Flu worldwide. People who supported the "Invisible Rainbow" theory of radio claimed that the introduction of worldwide radio waves disrupted Earth's magnetic fields and contributed to the Spanish Flu. There was no scientific basis for this rationale whatsoever. However, since they both coincided with the same period of time, the seeds of suspicion had been planted, and they would never leave the minds of those who were affected.



The Emergence of 3G/4G Technology and SARS in the Early 2000s:

The emergence of 3G and 4G technology altered global communications, and at the same time, the outbreak of SARS occurred. Voices from the fringe attempted to connect the introduction of the two. Virologists had already identified the specific coronavirus that caused SARS, but this did not matter to the people who had already established a rationale for their fear of the invisible signals that were associated with being sickened. The pattern existed — when there is an introduction of a new invisible signal, there is an outbreak of new sickness. Therefore, the introduction of the invisible signal must have caused the sickness.

The Misinformation Explosion Surrounding 5G and COVID:

The misinformation explosion that occurred due to 5G rolling out coinciding with the coronavirus pandemic, was like nothing that the telecommunications industry had ever experienced. There were telecom towers burned down in retaliation; there were engineers who had received death threats; there were protests in places like Siderno, Italy.

There was no denying the science. COVID-19 is caused by the SARS-CoV-2 virus and spreads through droplets produced when a person breathes or coughs. Radio waves, including 5G cell phone technology, cannot damage a cell's structure, and they cannot harm someone's DNA or produce a virus, because radio waves are non-ionizing. Despite the scientific evidence that has established the truth, fear of something you cannot understand has always surpassed reason.



Figure 1: Coronavirus: Concern after Facebook groups call for harassment of 5G engineers.

Credit: One Facebook group called 'What Goes Up Mast Come Down' posted a photo of a burning mobile mast/ <https://news.sky.com>



The Pattern Below the Panic:

The individual claims have no evidence that others say they have put to bed; however, "the pattern hasn't been broken".

Every generation is faced with the same anxiety in some shape or form. We have evolved to look for causes to the problems we face, and new technologies that cannot be seen (i.e. wireless) are often easy targets for causes of anxiety.

Being healthy scepticism is important. Being falsely linked together (when there is nothing that connects them but happen to occur at the same time) is not.

This cycle of repeating itself is far from over. The next technology introduced will be more invasive, will be more incorporated into our everyday lives, and be more misunderstood than anything introduced before it.

The question that remains is whether or not we will be able to identify the pattern of repeated mistakes when we create our 'next' technology before we make the mistake and repeat history again!

Key Findings & Impact

6G Networking: Evolution from Pipes to Protectors:

Each prior generation of wireless technology was about the same function of sending data between two locations — the network was simply a conduit used to facilitate this movement of data with no consideration for either what was sent or any external factors affecting the movement of data in the network.

The introduction of 6G does much more.

Through the use of Artificial Intelligence (AI)-based Integrated Sensing and Communications (ISAC), the 6G networks will not only transfer data; they will also create a way of using reflections of a signal off buildings, roads and individuals in the environment, for the purpose of creating an understanding of what's going on within that physical environment.

While past generations of wireless networks operated solely as trucks delivering packages, 6G networks will be operating as trucks able to see, hear and think; therefore, being able to react to and manage their environments.

Having this additional capability through 6G provides many outstanding opportunities. For example, detecting landslide events prior to their occurrence; monitoring flooding on a real-time basis; and detecting potentially dangerous crowd formations at public events. It is obvious that 6G is not simply another upgrade from previous generations of wireless network technology; it represents



completely different types of infrastructure that allow us to combine and connect all three (physical, digital, and human) realms of life.

The Disturbing Question: Security or Tracking?

This is where it gets uncomfortable.

When 6G networks use their unique sensing capabilities — like predicting landslide locations, they also have the ability to identify any person walking down a street. In this way, they can find that person's location without them having a cell phone in their pocket or a wearable device on them. They can accommodate this location information solely using the signals that are reflected off of that person's body.

This type of device-free tracking is a massive change in how we currently track/monitor people. In other words, when you wanted to stay off the radar of digital tracking until now, you had options: You could leave your cell phone at home, turn off location services, and opt out. However, there is no option to "opt-out" of 6G sensor-enabled tracking. The 6G network can find a person's location without the use of that person's device and without that person's permission; they do not need to ask permission before tracking you.

Essentially, what has now been created is what would be referred to as a "quiet" digital mind (an infrastructure that sees every public and private location with a degree of granularity never before seen).

On the one hand, this technology provides a promise of keeping people safe. On the other hand, there are potentially horrifying risks associated with its use.

There are three risks:

- 1) RE-IDENTIFICATION - When data sets are merged, anonymous consumers will become detailed individual consumer information
- 2) UNEVEN IMPACT - The most vulnerable will face the greatest threat of constant observation, but they will have the least opportunity to seek protection.
- 3) FUNCTION CREEP - Basic safety systems will be enhanced to allow for a method of mass observation and data collection.

What's Next?

The battle of the Guardian: Are You Going to Trust Them?

There is a clash of two very different forces. One force is the way we've all been brought up, which is the new way people think about privacy, identity, and the way they relate to each other. At the same time, there is the new way people think about the pervasive sensing technology and the new concerns it creates with our privacy and freedom.



Breaking this cycle means we must learn to value people over their production. For many years now, the way to determine if a network was "successful" was based on the speed, latency, and capacity. But in the 6G world, we will need to come up with completely new measurements for performance, such as social inclusion, sustainable living, the well-being of people, and the protection of the individual's rights.

In order to help you determine how much you trust your Guardian technology, please consider the following four items, which researchers have defined under the framework of Social Acceptance of Technology:

1. **Acceptance of Change.** The introduction of pervasive sensing technology into our society has dramatically altered the way we understand the concept of privacy, the way we come to understand our own identity, and the way we live in relation to one another. Accept this change as a reality.
2. **Design for Human Rights.** Technology should be designed and engineered with the principles of freedom and autonomy, not as an afterthought to the true intent of developing new technologies. Your set of principles should dictate every engineering decision.
3. **Creating a User-friendly Experience.** Pervasive sensing technology should be implemented in such a way as to ensure the user experience is not invasive and does not cause the user any level of anxiety or stress, even if the technology is "cool."
4. **Build Trust via Transparency.** An open and transparent governance structure with well-defined rules of operation is a mandate. No exceptions to these guidelines.

The Bottom Line: Technology Without Trust is Just Surveillance:

For years, people feared wireless technology for the wrong unfounded. With 6G, the concern is different — and more real.

6G can see the world around us. This means that it can help keep people safe, but it can also watch people. The difference is whether 6G is designed with the right rules.

If 6G is designed with the right rules, it can be trusted. If 6G is designed for the wrong reasons, it will be used as a surveillance state.

Ultimately, 6G is not about the speed at which it operates. 6G is about whether people feel safe living inside it.

Without trust, the smartest network is just another way to watch people.



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