

17. In the Land of the Blind

WHAT IF, ON ANOTHER PLANET, in a distant universe, the sun was dark. God never said, “Let there be light,” and there was none. But people invented it anyway and lit up the world, lit it with light so bright that it burned all it touched. What if you were the only person who could see it. What if there were a thousand, a million, ten million others? How many aware people would it take to make the destruction stop?

How many will it take before people no longer feel too alone to say, “Your cell phone is killing me,” instead of “I’m electrically sensitive”?



Gro Harlem Brundtland, M.D., M.P.H

A tremendous number of people get headaches from their cell phone. Almost one-quarter of Norwegians who would now be considered moderate cell phone users (more than one hour per day) admitted it to the scientists who asked the question in 1996.¹ Almost two-thirds of Ukrainian university students who were heavy cell phone users (more than three hours per day) admitted it to the scientists who asked the question in 2010.² Perhaps there are some who really don’t get headaches, but few people are asking the question, and to publicly admit to the true answer is not socially acceptable.

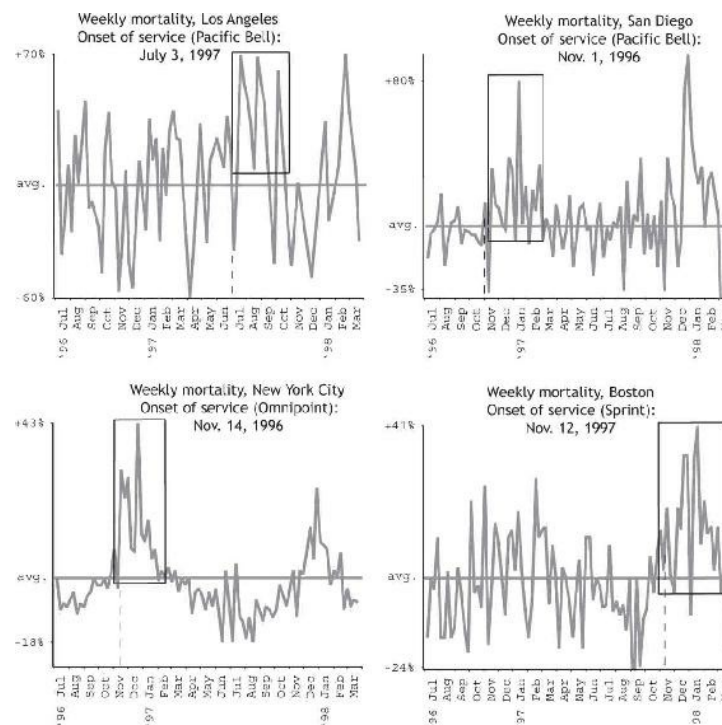
Gro Harlem Brundtland got headaches from cell phones. And since she was the Director-General of the World Health Organization and the former Prime Minister of Norway, she did not feel the need to apologize for it, and simply ordered that no one was to enter her office in Geneva carrying a cell phone on their person. She even gave an interview about it in 2002 to a Norwegian national newspaper.³ The following year she was no longer Director-General of the World Health Organization. No other public officials have repeated her mistake.

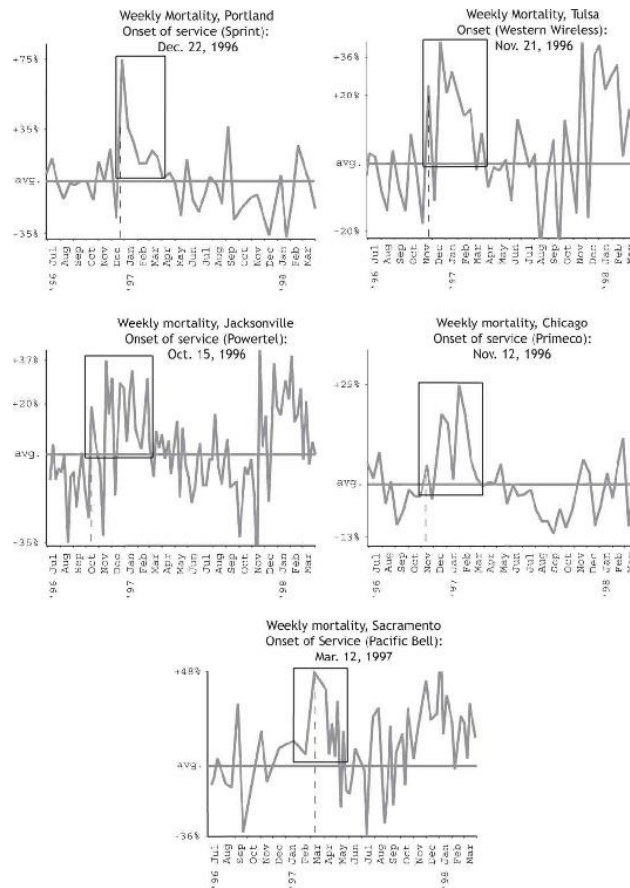
Even for those who really don’t get headaches, their cell phones affect their sleep and their memory. Folk singer Pete Seeger wrote to me twenty years ago. “At age 81,” he said, “it’s

normal for me to start losing my memory. But everybody I tell this to, says, ‘Well, I seem to be losing my memory, too.’”

Those of us whose injuries are so severe, so devastating that we can no longer ignore them, and who are lucky enough to figure out what has happened to us and why, have here and there formed tiny, isolated groups, and for lack of a more acceptable term we call our injury “electrical sensitivity,” or worse, “electromagnetic hypersensitivity” (EHS), a travesty of a name for a disease that affects the whole world and everyone in it, a name as absurd as “cyanide sensitivity” would be if anyone were foolish enough to apply such a name to those poisoned. The problem is that we are all being electrocuted to a greater or lesser extent, and because society has been in denial about that for more than two hundred years, we invent terms that hide the truth instead of speaking in plain language and admitting what is happening.

After pulsed microwave radiation came to my hometown for the first time, all over the city at once, on November 14, 1996, I was so sure it had killed masses of people that I telephoned epidemiologist John Goldsmith to ask for advice on how to prove it. Formerly with the California Department of Health Services, Goldsmith was then at Ben Gurion University of the Negev in Israel. He directed me to the weekly mortality statistics published online by the Centers for Disease Control for 122 cities, and advised me to find out exactly when, for each city, digital cell phone service had begun. Here, for nine large cities in different parts of the country, whose digital service began at different times, are the results:





I had been sure, because the sudden irradiation of my city had almost killed me, and because I knew people who had died from it.

On November 14, I had traveled to Killington, Vermont to attend “Unplugged: Health and Policy Implications of the Wireless Revolution,” a conference sponsored by the Vermont Law School. When I returned home on November 16, I became dizzy. I assumed one of my neighbors had sprayed something toxic; perhaps the exterminator had been in the building. This would pass, I thought. But within a few days I became nauseated, and I had uncontrollable tremors. I had the first asthma attack of my life. My eyeballs felt like they were bulging out, my throat swelled, my lips felt dry, fat, and puffy, I felt pressure in my chest, and the bottoms of my feet hurt. I became so weak I couldn’t lift a book. My skin became so sensitive I couldn’t bear to be touched. My head was roaring like a freight train. After November 20 I did not sleep, and could not eat. During the night of November 22, my larynx went into spasm and I couldn’t draw a breath in or out. In the morning I grabbed my sleeping bag, got on the Long Island Railroad, and left town.

My relief was unbelievable.

I learned that on November 14, while I was in Vermont, Omnipoint Communications, New York’s first digital cell phone company, had begun selling its service to the public. Thousands of rooftop antennas at six hundred locations were operational: New Yorkers were now living inside a computer.

I compared notes with a few friends. Together we compiled a list of symptoms and placed the

following classified ad in a local newspaper: “If you have been ill since 11/15/96 with any of the following: eye pain, insomnia, dry lips, swollen throat, pressure or pain in the chest, headaches, dizziness, nausea, shakiness, other aches and pains, or flu that won’t go away, you may be a victim of a new microwave system blanketing the city. We need to hear from you.”

And we did hear from them, by the hundreds—men and women, whites, blacks, Hispanics, and Asians, office workers, computer operators, stockbrokers, teachers, doctors, nurses, and lawyers, all of whom had woken up suddenly sometime between mid-November and Thanksgiving, their hearts racing, their heads pounding, thinking they were having a heart attack, a stroke, or a nervous breakdown—now relieved to find out they were not alone. The very first person to answer the ad was a forty-one-year-old airline employee who lived in the Bronx. Joe Sanchez’s head suddenly began to hurt on about November 15, so badly that he was afraid he was having a stroke. Five and a half months later, on May 8, 1997, he died—of a hemorrhagic stroke.

For the next two years, without letup, Janet Ostrowski, a nurse who worked in a family practice office in Manhattan, and then on Long Island, saw a constant stream of patients with “viral syndrome,” typically with excruciating headache, ear pain, swollen gland deep in the neck, nasal congestion they could not get rid of, facial pain, sore throat, fatigue, and sometimes profound dehydration. “No flu lasts an entire year,” Ostrowski told us. She also noticed that the majority of her patients were suddenly not responding to medication. “I have done triage in various emergency rooms throughout the Tri-State area over the course of twenty-five years of nursing,” she said. “Whatever used to be stabilized on routine medication, be it hypertension, diabetes, whatever, now seems to become unstabilized easily and not responding to current meds.” She also saw a tremendous increase in the number of people complaining of stress and anxiety, many of whom, in their thirties and forties, were found, on routine EKG, to have cardiac changes.

Officially, this North American “influenza” epidemic began in October 1996 and lasted through May 1997.

The organization I started in 1996, called the Cellular Phone Task Force, is struggling to serve a growing population of injured. And the title of the magazine I published for five years, *No Place To Hide*, has come true. *Say To Countryside Goodbye, When Even Healthy People Die*,⁴ wrote Olle Johansson, the guru of electrical sensitivity in Sweden and one of the world’s foremost authorities on electrical illness and injury. The old wisdom, that if you wish to escape civilization you can do so if you go far enough away, is no longer true, because secondhand radiation no longer comes only from cell phones, WiFi, and other personal devices. The invisible tentacles of civilization, in the form of cell towers, radar installations, and two-way satellite dishes, have made radiation ubiquitous, impossible to escape no matter how far away you go and how much land you buy. And even if you find one of the last hidden sanctuaries, it can be destroyed in an instant, invisibly and without warning. There is no protection. Quite the opposite—laws have been passed preventing citizens from protecting themselves, or elected officials from doing anything about the radiation. But no one is immune.

“Recently I celebrated my forty-first birthday,” said Dafna Tachover in 2013, “and I am not sure that the word *celebration* is appropriate.” An attractive young attorney with an MBA, Tachover was licensed in New York and Israel, and just a few years previously had been

working for an investment company in Manhattan as advisor to the chairman. She had been married to a doctor who was also a research scientist at Princeton University. They had decided to have a baby, and she had decided to open up a private law practice. All of life, seemingly, was hers for the taking.

When I interviewed her in 2013, she was divorced, unemployed, still childless, and struggling just to survive in a remote farmhouse in upstate New York. “My life is pretty much impossible,” she said, “as I am a prisoner in my own house. I cannot go anywhere, I cannot even walk on the street and drive into town. I cannot work and be in the presence of other people. I cannot fly, travel, go to a restaurant, or sleep in a hotel. I cannot access a doctor, a hospital, or even go to court to enforce my rights which are being crushed. When I needed to move, I could not look for a house by myself, as driving on roads saturated with antennas and cars with wireless systems has become impossible. My father had to come from Israel to help me and after two months of searching, and five hundred houses, I found just one house which I could tolerate. The closest neighbor is 300 yards away (such distance is required in order to not be affected by a neighbor’s WiFi, cordless phones, and other gadgets), there is only spotty cell phone reception, and radiation from only one radio station. I live in an isolated cabin in the woods and my only ‘outing’ to civilization is a once-a-month trip to buy groceries. Many times I am not well enough to even do that and I depend on friends to buy me food. As I cannot work and my money is almost exhausted, I don’t know how I will survive financially, and with the spread of ‘smart’ meters, soon there will not be even one house I would be able to live in. It is very frustrating knowing that without this radiation I can live a normal and full life, but because of it I am forced into an absurd existence.”

Tachover was a confirmed cell phone user who had no landline and spent hours on her cell phone and in front of her wireless computer. “My laptop was my best friend,” she says. “I was one of the first to purchase a cellular wireless Internet connection to my laptop, to ensure that I had Internet access wherever I went.” Finally, like so many other people, she was injured—injured by a new laptop computer she had bought for the law practice she was starting. “Every time I used the computer I felt pressure in my chest, the rapid pounding of my heart, difficulty breathing, dizziness, pressure in my head, my face would become red and hot, and I was nauseous. I had weird cognitive problems—I could not find words and when my husband spoke to me, five minutes later I would not remember that he did. I suddenly was unable to touch my cell phone and if I put it near my head it felt as if someone were drilling into my brain.”

The first action she took was to go home to Israel to recover her health. “It was an unfortunate choice,” she said. “On my first day there my body collapsed. While I was driving I felt excruciating pain. I looked up and saw ‘white stripes’ on the roof of the mall, and when I asked my mother what they were, she told me that they were cell phone antennas. Until that moment I did not know I felt antennas. I had tears in my eyes and all I could say was ‘For God’s sake, there are children growing up here!’ From that moment on my condition quickly went downhill and my life became a nightmare. I could not sleep any more and the pain was unbearable.”

Back in New York, Tachover spent months living in her car. “I could not be in my apartment, could not find a house, and I spent my days desperately trying to find a place without radiation in which to park my car. At nights I parked my car in parking lots and would cover the windows

with dark cloths and sheets so people would not see me.”

Unfortunately Tachover’s experience is very common, and becoming more so. Although she is now focusing her efforts as a lawyer to try to win “basic human and civil rights” for those who are called electrically sensitive, Tachover knows that the real problem is much bigger. “Humans are electric beings,” she says, “and there is no mechanism in the human body that protects it from the radiation. Therefore, to claim that this radiation is not affecting us is ignorant and absurd. EHS is not a disease, it is an environmentally induced condition to which no one is immune. I want to believe that the day in which the extent of this disaster will be exposed is not far. Ignoring the facts and reality do not change them and ignoring a problem is guaranteed to worsen its scale.”

Olle Johansson, who for decades was on the faculty of the world- famous Karolinska Institute—the institute that awards the Nobel Prize in Medicine every year—first became interested in the effects of microwave radiation in 1977 when he heard a presentation about leakage of the blood-brain barrier at a conference in Finland. He began to study the problem of skin rashes in computer operators in the early 1980s after hearing a radio program by Kajsa Vedin. Vedin, who later wrote “In the Shadow of a Microchip,” an analysis of the occupational risks of computer work, asked for expertise in neurology. “As a neuroscientist,” says Johansson, “I thought I was close enough, and I strongly believed that the issues she wanted to highlight, using the conventional repertoire of scientific ‘tools,’ ought to be easily investigated. I did not realize at all that there were other forces not wanting to see such studies initiated, but very soon I understood that these very clear-cut and simple and obvious investigations proposed by Kajsa Vedin would be very, very hard to start.



Olle Johansson, Ph.D.

“For me,” he recalls, “it was immediately clear that persons claiming skin reactions after having been exposed to computer screens very well could be reacting in a highly specific way and with a completely correct avoidance reaction, especially if the provocative agent was radiation and/or chemical emissions—just as you would do if you had been exposed to, for example, sun rays, X-rays, radioactivity, or chemical odors. Very soon, however, from different clinical colleagues a large number of other ‘explanations’ became fashionable—that the persons claiming screen dermatitis were only imagining this, or they were suffering from post-menopausal psychological aberrations, or they were old, or had a short school education, or were

the victims of classical Pavlovian conditioning. Strangely enough, most of the, often self-made, 'experts' who proposed these explanations had themselves never met anyone with screen dermatitis and had never done any investigations of their proposed explanatory models."

When he first contacted Vedin, Johansson did not personally know anyone with screen dermatitis either, but he quickly learned that they were hidden all around him in plain view. He learned that skin rashes were only the most visible manifestations of a devastating impairment, and that exposure not only to computer screens but other sources of radiation, and even ordinary electricity, could seriously damage the heart, nervous system, and other systems of the body. "After all these years," he says, "today I now regularly communicate with many thousands of such people, spread all around the world, and coming from all aspects of life. Nothing protects you from this functional impairment, not political stance, not your income, not sex, skin color, age, where you live or what you do for a living. Anyone can be affected. These people suffer radiation damage from gadgets that have been very rapidly introduced without ever having been formally tested for potential toxic environmental exposures or any other types of health hazards."

Johansson has not only seen his research funding disappear, and has lost his position at the Karolinska Institute, but he has had death threats, and on one occasion an attempt on his life. He went riding on his motorcycle with his wife one day, and while still going slow, he suddenly lost control of the vehicle. Twenty-seven spokes of the rear wheel had been cleanly sawed through, so professionally that it had been impossible to see. I asked Johansson what keeps him going. He began by telling me about the lives of the people who are called electrically sensitive.

"The lives of EHS persons most often are a living hell," he said. "I very soon realized that the very famous Swedish social security net did not catch them in its arms, but allowed them to fall and crash. That disturbed me a lot. The EHS had become a model of the democratic world, or rather a model of how democracies fail to protect their citizens. It was, and is, not hard to imagine yourself in such a situation. Today the EHS person, but what about tomorrow? Who will then be an outsider? Myself even? You? Who? The EHS became a kind of medical outcast, facing difficulties not shared by the rest of society. A very scary panorama. Anyone, as a fellow human being, would have been equally affected by what I witnessed over and over again.

"At the same time, another side also grew on me. The EHS persons, most of them, actually are very strong. They have to endure harassments of various sorts from the society, from physicians, scientists, experts, politicians, civil servants, their kin, and so forth, and all this makes their mental 'skin' very tough. I admire them a lot! I know I never would be able to constantly take such immense beatings.

"What keeps me going? One must stick to the task; to give in and move to another field would leave these persons very much without hope. As a government scientist I am supposed to work for people in need, not for my own personal career. When I grew up in the 1950s and 1960s, in Sweden, my family were very poor. I learned then the value of a hand stretched out, willing to support and help you. Such a lesson you never forget."

Dr. Erica Mallery-Blythe is an engaging physician, born in England, who has dual British and American citizenship, and who has also dedicated her life to this problem, having experienced it firsthand. After graduating from medical school in 1998, she worked at hospitals all over England, becoming an instructor in trauma medicine. In 2007, she moved to the United States with her husband, who was an F-16 pilot with the British Royal Air Force, working as an

exchange officer with NATO. She became injured while she was pregnant. Like so many other young professionals, Mallery-Blythe had become dependent on technology. In fact, she was one of the earliest cell phone users, her father having bought her one when she was ten years old, in the mid-1980s. She had always noticed that she got a headache if she used her cell phone too long, but like most people, she had not paid too much attention.

Now, however, the pain became intense after every phone call, and the right side of her face would become bright red as if she were sunburned. She had also just acquired her first WiFi-enabled laptop computer, which she used a great deal for medical research, and which she rested on her legs—but not for long, because every time she did that she would get severe, deep aching pain inside her legs. “It felt like my legs were cooking from the inside,” she recalls. Soon she could no longer use her computer at all, even at a distance. “As a doctor,” she says, “I knew that when there’s pain there’s something wrong.” Eventually she had to give up using both the computer and the telephone. By this time she was not sleeping, and had acquired a heart arrhythmia and severe tremors, in addition to the dizziness and headaches that were tormenting her. But everything she read on the Internet reassured her that she was not going to get cancer from her cell phone, and she could not put her experience into any medical context that she had ever been taught. She finally heard the term “electromagnetic hypersensitivity” after her daughter was born, but still did not grasp the seriousness of it. “How could there be a condition that was so profound that I’d never heard of it?” she wondered. It was not until she underwent an MRI to rule out a brain tumor that she finally realized that her life had been permanently, utterly altered. For when the high frequency pulse of the MRI was turned on she saw “a million grains of golden sand exploding outwards,” and had “a feeling of impending doom.” The final piece of the puzzle fell into place when she and her husband visited an isolated campground on the edge of Death Valley where there was no WiFi and no cell phone reception. “The relief was unbelievable,” she says. For the first time in a long time, she felt completely well and completely normal.

But, like Tachover, and like so many other people throughout the world, life was now impossible. Mallery-Blythe and her husband moved out of their home and began camping in tents or sleeping in the back of their car. She describes it as “living like war refugees.” She could not enter a market or a gas station without becoming crippled. “You can’t do the basic things you need to live. You almost feel like you’re going to wake up, like it’s some kind of bizarre dream.” Almost worse than the physical hardship was the fact that they had to hide the truth of what was happening from everybody they knew and met. They lived like that for more than half a year, until they found a log cabin by a lake in South Carolina, where they were forced to live without electricity so that she could recover her health. She was living there when I first met her. Eventually she moved back to England, but before she did she had met many other people who were injured by electricity, especially by wireless technology, and had attended a medical conference on the subject in Dallas. And she decided that she had no choice but to devote the rest of her life to the needs of this population, including the most urgent need for a sanctuary where people can save their lives, recover their health, and become productive individuals again. “The first and foremost need,” says Mallery-Blythe, “is a safe refuge for those who need urgent care, with supportive medical staff. What makes me sad is to see all the people who can’t escape and get to a pure environment, because if you can’t get to a pure environment, it will destroy you.” Considering that an estimated five percent of the population know they have been injured,⁵ and

that perhaps one out of four of them have had to leave their homes, the need for refugee aid is enormous.

Yury Grigoriev, known affectionately as the grandfather of EMF research in Russia, has been working on radiation since 1949. After graduating from the Military Medical Academy he was assigned to research the biological effects of atomic weapons at the Institute of Biophysics at the U.S.S.R. Ministry of Health. Since 1977 he has been the head of research on non-ionizing radiation (i.e., radio waves) at the same institute, since renamed the A. I. Burnazyan Federal Medical and Biophysical Center. He is also the Honorary Chairman of the Russian National Committee on Non-Ionizing Radiation Protection. His most recent book, *Mobile Communication and Children's Health*, was published in 2014, a year before his ninetieth birthday. His greatest fear is for the children. "For the first time in history," he says, "human beings are exposing their own brains to an open, unprotected source of microwave radiation. From my viewpoint as a radiobiologist, the brain is a critical organ and children have become the group at greatest peril."



Yury Grigorievich Grigoriev, M.D.

"In the early period," says Grigoriev, "the government deliberately underestimated the risk of nuclear radiation, before the accident at Chernobyl. This accident caused fear among the population, and as a result the Russian government agreed to provide full information to the public about the dangers of ionizing radiation. Now we are dealing with similar issues surrounding mobile communications. I believe that the time has arrived, here too, to provide full information to the general public."

Scarcely a day goes by when I don't receive terrifying new information that is being tragically ignored.

"Children's Cell Phone Use May Increase Their Risk of ADHD," reads a recent news headline about a Korean study. The more calls made by a child, the more time spent on the phone, and the more time playing games on the phone, the greater the risk of ADHD.⁶

"Computer Screens Can Make You Blind," screams another headline. This research, out of Japan, found that spending more than four hours per day on a computer for ten years more than doubles one's risk of glaucoma.⁷

"Are Mobiles Bad for Your Skin?" Also out of Japan, this research found that mobile phones worsen eczema.⁸

"Mobiles Can Make You Blind." This study in China found that microwave radiation at

levels emitted by cell phones caused cataracts to form on the eyes of rabbits.⁹

“Could Microwaves Be Associated with Children’s Asthma?” This investigation was done at Kaiser Permanente in Oakland, California. Women who were exposed to higher magnetic fields while pregnant gave birth to children who were at greater risk for asthma.¹⁰

“Talking on the Phone Makes You Deaf.” I have received a number of studies saying this. Teams of researchers at Dicle University in Turkey,¹¹ at a hospital in Chandigarh, India,¹² and at the University of Malaysia in Kuala Lumpur¹³ found that heavy cell phone use is associated with permanent hearing loss. Scientists at King Edward Memorial Hospital in Mumbai, India found that chronic use of a cell phone for ten minutes a day causes hearing loss.¹⁴ Research at the University of Southampton, England showed that even a single short exposure to a cell phone causes temporary hearing loss.¹⁵

“Cell Phones Now Tied to Alzheimer’s.” A team of Swedish scientists, led by neurosurgeon Leif Salford, proved in the late 1990s that a cell phone disrupts the blood-brain barrier of laboratory rats within two minutes of exposure. When they reduced the power of the phone a thousandfold—the equivalent of a person keeping a phone several feet away from his or her head—the damage *increased*. In 2003, they proved that a *single two-hour exposure* causes permanent brain damage. They exposed 12- to 26-week-old rats to an ordinary cell phone, just once for two hours, and waited eight weeks before sacrificing them and examining their brains. Like human teenagers, these rats had brains that were still developing. In those animals that had been exposed once to a cell phone, up to two percent of the neurons in all areas of the brain were shrunk and degenerated.¹⁶ Salford called the potential implications “terrifying.” In 2007, they exposed rats chronically, for two hours once a week for 55 weeks, beginning in their “teenage years.” At the end of the experiment, the exposed rats, by now in middle age, had memory deficits.¹⁷ To mimic cell phone use by very young children, scientists in Turkey experimented on 8-week-old rats. In their study, published in 2015, they exposed the animals to cell phone-like radiation for one hour a day for a month, and then examined a particular area of the brain called the hippocampus, which is involved in learning and memory. The exposed rats had 10 percent fewer brain cells in the hippocampus than the unexposed rats. And a large number of brain cells in the exposed rats were abnormal, dark, and shrunk, just like the brain cells in Salford’s rats.¹⁸ In another large set of experiments, the Turkish team exposed pregnant female rats to cell phone-like radiation at low power for one hour a day for nine days. The exposed rats’ offspring had degenerative changes in their brains, spinal cords, hearts, kidneys, livers, spleens, thymuses, and testes.¹⁹ In yet a further experiment, the same scientists exposed young rats to cell phone-like radiation for one hour a day during their early and mid-adolescence, which for a rat is from 21 to 46 days of age. The exposed rats’ spinal cords were atrophied and had significant losses of myelin, similar to what occurs in multiple sclerosis.²⁰

Since the first edition of this book was written, the mountain of truth confronting every cell phone user has only grown larger. Millennials—the generation born between 1981 and 1996 and the first to grow up using cell phones—are experiencing an unprecedented decline in their health when they reach their late twenties. On April 24, 2019, the American health insurance company Blue Cross Blue Shield released a report titled “The Health of Millennials.” It showed not only that the health of this generation takes a sharp decline beginning at age 27, but also that the prevalence of many medical conditions had risen precipitously among millennials in just three

years.

The prevalence of eight of the top ten conditions among all millennials showed a double-digit increase in 2017 as compared with 2014. Major depression increased 31 percent. Hyperactivity increased 29 percent. Type 2 diabetes increased 22 percent. Hypertension increased 16 percent. Psychoses increased 15 percent. High cholesterol increased 12 percent. Crohn's disease and ulcerative colitis increased 10 percent. Substance use disorder increased 10 percent.

The decline in millennials' health from 2014 to 2017 was not due to their being three years older. The report also compared the health of millennials who were 34 to 36 years old in 2017 to the health of Gen Xers who were 34 to 36 years old in 2014. At the same age, millennials in 2017 had 37 percent more hyperactivity, 19 percent more diabetes, 18 percent more major depression, 15 percent more Crohn's disease and ulcerative colitis, 12 percent more substance use disorder, 10 percent more hypertension, and 7 percent more high cholesterol than Gen Xers had in 2014.

When the researchers looked at all health conditions, they found that 34- to 36-year-olds in 2017 had a 21 percent increase in cardiovascular conditions, a 15 percent increase in endocrine conditions, and an 8 percent increase in other physical conditions compared to 34- to 36-year-olds in 2014.

The only reasonable explanation for the alarming decline in health of the millennial generation is the life-long irradiation of their brains and bodies from their cell phones. Cell phones did not work in most of the United States until 1997, and their use was not prevalent among teenagers until 2000. Millennials are the first generation that began using cell phones in their teenage years or earlier, when their brains and bodies were still developing. People who were 34 to 36 years old in 2017 were 17 to 19 years old in 2000. People who were 34 to 36 years old in 2014 were 20 to 22 years old in 2000. No other environmental factor changed so radically in just three years. Microwave radiation is responsible for the tragic state of the millennial generation's health compared to the health of every other generation that preceded them.²¹

The incidence of stroke overall is steady or declining but it is rising in adults younger than 50, and shockingly so in very young adults, who are the heaviest users of cell phones. Studies out of France,²² Sweden,²³ and Finland²⁴ all say the same thing. A Danish study published in 2016 examined the rate of strokes in people aged 15 to 30—a population that never used to have strokes at all. The annual number of strokes in that age group in Denmark rose 50 percent between 1994 and 2012, and the annual number of transient ischemic attacks (mini-strokes) in that age group tripled.²⁵ Cell phones were marketed in Europe three years earlier than in America.

Women in their twenties and thirties who keep their cell phones in their bras are getting a distinctive type of breast cancer directly underneath where they keep their phones.²⁶ Rates of total hip replacements have skyrocketed since cell phones began living in hip pockets. Between 2000 and 2010 the number of annual hip replacements in the United States more than doubled, and the rate of hip replacements among people aged 45 to 54 more than tripled.²⁷ Rates of colon cancer among Americans aged 20 to 54, which had been declining for decades, began to rise suddenly in 1997. The rise has been steepest and began earliest in people aged 20 to 29; the rate of colon cancer in young men and women aged 20 to 29 doubled between 1995 and 2013.²⁸ Rates of prostate cancer—the prostate is also in the same part of the body—have been rising worldwide since 1997.²⁹ The number of cases of prostate cancer among Swedish men aged 50 to

59 was stable for decades until 1996 and rose nine-fold between 1997 and 2004.³⁰ The incidence of metastatic prostate cancer among American men under 55 increased 62 percent between 2004 and 2013, and nearly doubled for men aged 55 to 69 during the same period.³¹ An American study conducted from 2003 to 2013 found that young men had lower sperm counts than their elders for the first time in human history, and that men born between 1990 and 1995 had on average 40 percent lower sperm counts than men born earlier.³²

And the kind of brain damage that occurred in a Swedish laboratory in teenaged rats, and in a Turkish laboratory in preteen rats, is now being found in preschool children in America. Not only did the scientists at Cincinnati Children's Hospital Medical Center find that children who spent more time per day on a wireless device have poorer language and literacy skills, but MRIs of the children showed structural damage to the white matter of their brains.³³

The damage to the natural world is mounting up just as high. In 2017, Mark Broomhall presented his report to the United Nations Educational, Scientific and Cultural Organization (UNESCO) on the exodus of so many species of wildlife from the Nightcap National Park World Heritage area surrounding Mount Nardi in Australia. Broomhall has lived on Mount Nardi for more than forty years. After antennas for 3G cell phones were installed on the Mount Nardi communications tower in 2002, he saw an immediate decline in insect populations. In 2009, when "enhanced 3G" was added to the tower, along with channels for 150 television stations, 27 bird species left the mountain. In early 2013, when 4G was installed on Mount Nardi, a further 49 bird species left, all bat species became scarce, four common species of cicada almost disappeared, frog populations were drastically reduced, and the massive and diverse populations of moths, butterflies, and ants became uncommon to rare.³⁴

At about the same time that Broomhall presented his report, people all over the world woke up to the fact that their cars' windshields were not being splattered with tiny life, and that insects of all kinds were disappearing from the earth. In 2017, scientists reported a 75 to 80 percent decline in total flying insects in 63 nature protection areas in Germany.³⁵ In 2018, another group of scientists reported a 97 to 98 percent decline in total insects caught in sticky traps in a Puerto Rican rainforest.³⁶ In 2019, scientists from Australia, Vietnam, and China reviewed 73 reports of insect declines from across the globe, and concluded that 40 percent of all insect species on earth are threatened with extinction.³⁷

We are living in a world where information does not increase knowledge, nor open eyes. The cultural barriers are too great. Society has been in denial for too long. And yet it is impossible to continue on the present path any longer. Decisions are being made to intensify the global microwave rain, before 2020, from a steady drizzle to a downpour.

Instead of cell towers every few miles, there are going to be cell towers every few houses. This is already being implemented throughout China and South Korea and is spreading like wildfire to every city in the world. Although the new antennas are small—little boxes on top of telephone poles—they expose the population to tens or hundreds of times more radiation than the tall structures they are replacing.

Dense rows of similar antennas are being sown like so much rice along the sides of highways and beneath the pavement, and the electric fields that sprout from their seeds to cover the adjacent countrysides will guide cars and trucks that are outfitted with their own antennas and driven by robots instead of human beings.

These are the structures that are replacing men and women with machines within cities and along highways. It is called “5G” because it is the 5th generation of wireless technology. 5G will enable the creation of the “Internet of Things”: not only cars, trucks, and home appliances, but virtually everything we buy is being outfitted with antennas and microchips in order to be connected to the wireless cloud that will take over the business of the world from human beings. Cars will drive themselves, milk cartons will instruct refrigerators to order milk, and your baby’s diaper will tell your phone when it needs to be changed. By some estimates, as many as one trillion antennas will soon be talking to one another, outnumbering people on the earth by a hundred to one.

Not just people, but all of nature is being replaced by electrical pulsations, and not just in cities and suburbs. Radio waves are replacing eagles and hawks in national parks and wilderness areas, fish and whales in the earth’s oceans, and penguins and auks in Antarctica and Greenland, where ice is melting into electric fog.

Four billion people, you see, still have little or no access to the Internet. And the remedy for that deficiency is now at hand, via balloons, drones, or satellites from space. Humankind is now willing and able to finally fulfill the original promise of the telegraph, put into words for the first time a century and a half ago. Space and time are poised to be thoroughly annihilated. That promise, however, is the ultimate Trojan horse, containing within it an unsuspected threat: the annihilation or severe impoverishment of life itself. Unsuspected, that is, by those who cannot yet see what is happening. Those of us with EHS who remember the beginning of satellite phone service foresee catastrophe.

In 1998, the launch of the 66-satellite constellation called Iridium brought cell phone service for the first time to the vast unserved regions of the earth, previously owned by penguins and whales. As we saw in the last chapter, however, it also unleashed a new kind of rain that emptied the skies of birds for a couple of weeks. The loss of thousands of racing pigeons during the two weeks following September 23, 1998, made headline news. The fact that wild birds were also not flying received only brief mention. The human toll was not mentioned at all.

On about October 1, 1998, I contacted fifty-seven electrically sensitive people in six countries. I also surveyed two support groups, and interviewed two nurses and one physician who served this population. My survey³⁸ found that eighty-six percent of the electrically sensitive people interviewed, and a majority of patients and support group members, had become ill on Wednesday, September 23 exactly, with typical symptoms of electrical illness such as headaches, dizziness, nausea, insomnia, nosebleeds, heart palpitations, asthma attacks, ringing in the ears, and so forth. One person said it felt like a knife went through the back of her head early Wednesday morning. Another had stabbing pains in his chest. A number of people, including me, were so sick we weren’t sure we were going to live. Follow-ups revealed that some of these people were acutely ill for up to three weeks. I suddenly lost my sense of smell on September 23, 1998, and it still today has not returned to normal.

Mortality statistics obtained from the Centers for Disease Control reveal the following numbers for 1998:

Week	Deaths
Sept. 6	11,351

Sept. 13	11,601
Sept. 20	11,223
Sept. 27	11,939
Oct. 4	11,921
Oct. 11	11,497
Oct. 18	11,387

As recommended by the CDC, the above numbers are based on an average three-week delay between the time of death and the filing of a death certificate, and have been adjusted to account for missing data for some cities. A four to five percent rise in the national death rate occurred during those two weeks in which electrically sensitive people were the sickest and birds were not flying in the sky.

The commencement of service by the second satellite cell phone company, Globalstar, was again accompanied by widespread sudden illness. Globalstar announced the beginning of full commercial service in the United States and Canada from its 48 satellites on Monday, February 28, 2000. Widespread reports of nausea, headaches, leg pain, respiratory problems, depression, and lack of energy began on Friday, February 25, the previous business day, and came from people both with and without EHS.³⁹

Iridium, which had gone bankrupt in the summer of 1999, was resurrected on December 5, 2000, when it signed a contract to provide satellite phones to the United States Armed Forces. On March 30, 2001, commercial service was resumed, and on June 5, Iridium added mobile satellite data services, including the ability to connect to the Internet. Nausea, flu-like symptoms, and feelings of oppression accompanied both events. Hoarseness was a prominent complaint of many who contacted me in early June. But the reports that grabbed headlines had nothing to do with human beings.

The March 30 event was unusual in several respects. First, it was the night of a rare red aurora that was visible in the northern hemisphere as far south as Mexico, as well as in the southern hemisphere. It was a time of intense solar activity, so I was tempted to attribute this to pure coincidence, except that I was reminded of the reddish sky that some reported the night of September 23, 1998, when Iridium was turned on the first time. No one understands all the interactions of these satellite operations with the earth's magnetic field and atmosphere.

But the second item that attracted notice was a catastrophic loss of Kentucky race horse foals in late April and early May.⁴⁰ Since mares, according to the Merck Veterinary Manual, abort several weeks to a month after, for example, a viral infection, this would put the triggering event at the end of March. Except that no such virus was ever found. In the United States, unusual foaling problems were reported simultaneously not only from Kentucky and nearby states like Ohio, Tennessee, Pennsylvania, and Illinois, but also from Maryland, Texas, and northern Michigan. Lenn Harrison, director of the University of Kentucky's Livestock Disease Diagnostic Center, said he had received similar reports from as far away as Peru.⁴¹

Between 2001 and now, our skies have not essentially changed. The number of satellites in low orbit has gradually increased, but Iridium and Globalstar are still the only providers of satellite phones, and the amount of data raining on us all from space is still dominated by those two fleets. That, however, is poised to change in a grand way. In 2017, we had a total of some

1,100 functioning artificial satellites of all types circling the earth. By the end of 2019, the number had already doubled. In 2020, several companies are competing to launch new fleets of 500 to 42,000 satellites *each*, for the sole purpose of bringing high-speed wireless Internet to the furthest reaches of the earth, and recruiting billions of untapped consumers into the ranks of social media. These plans call for the satellites to fly in orbits as low as 210 miles in altitude, and to aim highly focused beams at the earth with an effective radiated power per beam of up to twenty million watts.⁴² The names of some of these companies are familiar to everyone: Google, Facebook, and Amazon. Others, as yet, are less well known. SpaceX is the space transport company created by billionaire Elon Musk, the man who wants to put a colony on Mars—and to provide high speed Internet to both planets. OneWeb, based in the United Kingdom, has attracted major investments by Qualcomm and Virgin Galactic, and has signed up Honeywell International as its first large customer. Google, in addition to investing one billion dollars in Musk’s satellite project, has a contract to supply Internet from high-flying balloons to remote parts of the Amazon rainforest in Peru.

As this book goes to press, SpaceX has submitted applications for 42,000 satellites to the U.S. Federal Communications Commission and the International Telecommunication Union and is already in process of launching them, 60 at a time. SpaceX has announced that as soon as 420 satellites are in place, which could be as early as February 2020, it will turn them on and begin providing service to some areas of the earth. OneWeb has submitted applications for 5,260 satellites, plans to begin launching 30 at a time in January 2020, and has projected the beginning of service to the Arctic and Antarctic in late 2020 and full global service from 650 satellites in 2021. Telesat, based in Canada, expects to begin launching a fleet of up to 512 satellites in 2021 and to provide global service in 2022. Amazon projects that its 3,236 satellites will serve the entire world *except* the Arctic and Antarctic. Facebook, thus far, has an experimental satellite license from the FCC under which it is not required to disclose its plans to the public. A new company called Lynk also has an experimental license; it plans to deploy “several thousand” satellites by 2023 and boasts that “we’re going to turn all mobile phones into satellites phones.”

These plans must not happen. The roots of our life-support system are firmly anchored in the pillars of the earth’s magnetic field, far above our heads, where the pulsations of the universe, nourished and watered by the sun, are absorbed, animating all living things below. The engineers, who believe that all these satellites will be too far away to affect life, miss the mark. Even the first small fleet of 28 military satellites, launched into orbit in 1968, ushered in a worldwide pandemic of influenza. The direct radiation is only part of the problem. Satellites have a profound effect, as we learned in [chapter 9](#), because they are already *in* the earth’s magnetosphere. Unlike radiation from earthly towers, which is greatly attenuated by the time it reaches outer space, radiation from satellites works its full force on the magnetosphere, and is demodulated and amplified there by mechanisms that are poorly understood.

Not only will all these satellites be located in the magnetosphere, but most will be located in the ionosphere, which is the lower part of the magnetosphere. The ionosphere, as we learned in [chapter 9](#), is charged to an average of 300,000 volts and provides the power for the global electrical circuit. The global electrical circuit provides the energy for all living things: it is why we are alive, and it is the source of all health and healing. All doctors of oriental medicine know this, except they call that energy “qi” or “chi.” It flows from the sky to the earth, and it circulates

through our meridians and gives us life. It is electricity. You cannot contaminate the global electrical circuit with millions of pulsed, modulated electronic signals without destroying all of life.

The reason the engineering perspective fails is fundamental: it perpetuates the error that our ancestors made in 1800, the terrible decision to treat electricity as a foreign element, a strange beast that operates outside the laws of nature. We acknowledge the existence of electricity only to the extent that it does work for us; otherwise we pretend it is not there. We ignore the warning, issued in 1748 by Jean Morin, that harnessing electricity is tampering with life. We pretend, contrary to all scientific evidence, that there is a safe level of exposure, and that if the authorities only set the safety standards low enough, we can have our radar stations and computer screens and cell phones and not suffer the consequences. We forget the admonitions of Ross Adey, the grandfather of bioelectromagnetics, and of atmospheric physicist Neil Cherry, that we are electrically tuned to the world around us and that the safe level of exposure to radio waves is zero.

The satellite projects have made the growing efforts to educate the world much more urgent. In 2009, an international coalition formed whose mission is to bring the matters addressed in this book to global awareness. At this writing, the International EMF Alliance (IEMFA) collaborates with one hundred and twenty-one organizations from twenty-four countries. The Global Union Against Radiation Deployment from Space (GUARDS) formed in 2015; its mission is to prevent the planned rain of wireless Internet from satellites, drones, and balloons. And in 2019, an International Appeal to Stop 5G on Earth and in Space has gathered the signatures of thousands of organizations and hundreds of thousands of individuals from two hundred and two countries and territories. Scientists, doctors, engineers, nurses, psychologists, architects, builders, veterinarians, beekeepers, and other individuals from almost every nation have signed this appeal, and preparations are underway to deliver it to all of the world's governments.

In 2014, Japanese physician Tetsuharu Shinjyo published a before-and-after study that is a harbinger of the direction in which the world needs to go. He evaluated the health of the residents of an apartment building in Okinawa, upon whose roof cell phone antennas had been operating for a number of years. One hundred and twenty-two individuals, representing 39 of the 47 apartments, were interviewed and examined. Prior to the removal of the antennas, 21 people suffered from chronic fatigue; 14 from dizziness, vertigo, or Ménière's disease; 14 from headaches; 17 from eye pain, dry eyes, or repeated eye infections; 14 from insomnia; 10 from chronic nosebleeds. Five months after the antennas were removed, no one in the building had chronic fatigue. No one had nosebleeds any more. No one had eye problems. Only two people still had insomnia. One still had dizziness. One still had headaches. Cases of gastritis and glaucoma resolved. Like the residents of that building before the study, the majority of the people in the world today do not know that their acute and chronic illnesses are in large part caused by electromagnetic pollution. They do not talk to each other about their health problems, and are unaware that they are shared by many of their neighbors.

As awareness spreads, it will become acceptable to turn to your neighbor and ask them to turn off their cell phone, or unplug their WiFi. And that will be the beginning of recognition that we have a problem, one that is more than two centuries old. It is a problem that pits the apparent ease of living, the limitless power at our fingertips brought to us by electrical technology, against

the unavoidable, irreversible effects of that same technology on the natural world of which we are part. The unfolding human rights emergency, already affecting perhaps one hundred million people worldwide, and the environmental emergency threatening so many plant and animal species with extinction, must be faced with open eyes.