

LECTURE

BY

ARTHUR FIRSTENBERG

An all-day symposium regarding 5G, Birds, Bees and Humanity, was held in Taos, New Mexico on Sunday, August 12, 2018.

<http://holdmyticket.com/event/320891-exposed-a-symposium-regarding-5g-birds-bees-and-humanity>

Arthur Firstenberg discussed the history, science, and description of 5G, including 5G from satellites in space, and its expected effects on all living things.

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A. Links to the soundtrack and the video

Click on [this link](#) to Arthur Firstenberg's 34:23 minutes lecture, or on [this link](#) to *the video* with the same soundtrack but explained with images and video clips of amazing facts about the relatively unknown and probably deliberately-withheld information about cell phones, cell towers, the inordinate push for 5G rollout and the emerging data via independent research regarding adverse health effects from 5G millimeter wave radiation streaming down from thousands of ionosphere-placed satellites, plus 5G cell towers parked outside your homes, e.g., front doors or bedroom windows, with your not being able to protest them, nor have them removed!

The time in the following text is related with the original audio track on the website. The time in the video is not exactly the same, because the lecture has been divided in chapters, and some video clips needed (much) more space, to create a deeper impact. The thirteen chapters and the exact time are to be found in the video information (click: Show More, below the video)

B. LECTURE

1. The story of the monkey and the jar of peanuts

Do you know the story of the monkey and the jar of peanuts? The monkey puts his hands in the jar, and grabs a fistful of peanuts. He doesn't realize that if he only opens his fist and lets go of the peanuts his hand will come out easily. But then he would not get the peanuts so he holds on. He never gets to eat the peanuts, and his fist is stuck in the jar forever.

The peanuts are cell phones. Most people on this planet have a jar of peanuts with their fist in the jar, and they won't let go.

It they think about it at all, they want the cell towers to go away, they don't want 5G, they don't want 20.000 satellites in the sky, they don't want to be irradiated, but they won't take their hand out of that jar.

It doesn't occur to them, that once, not too long ago, there were no peanuts in the jar and there were no cell towers, and they did not forget their words, and their friends did not have cancer and heart disease, and diabetes. And their children did not have ADHD, or autism. And flowers were full of butterflies and bees.

1:45 – 2. The irradiation by cell phones and cell towers, and the responsibility of the mobile user

If you hold a cellphone in your hand, against your head, your brain is getting hundred times more radiation from the cellphone than it probably gets from the nearest cell tower. If you put the cell tower on a table, 3 feet away [\pm 1 meter], you're only getting ten times more radiation from the cell tower than you're getting from the cell... from the cell PHONE than you're getting from the cell tower.

In order for you to own a cellphone, that cell tower has to be there.

In order for you to make a cellphone call, that tower has to open up a dedicated channel, just for you. And it has to irradiate the entire countryside, just so you can make that call, and irradiate not only your brain, but everyone around you.

Those of you who own cell phones, do you ever wonder, when you're on your phone, who you are irradiating? Who you are torturing?

In order for you to answer a call on your phone, that cell tower has to open up a dedicated channel, just for you, and irradiate the countryside and all the people, and birds, and animals and trees and insects, just that you can answer that call.

And if you are able to use that cellphone in emergencies in remote locations, there have to be cell towers absolutely everywhere.

And if you want to be able to connect to the internet with your cellphone, and everybody in the world wants to connect with the internet with their cell phone, the existing towers don't have enough capacity, so they have to build more of them.

The more devices there are in the internet, the more towers.

3:36 – 3. **1G, 2G, 3G, 4G, 5G**

As we progress from 1G, to 2G, to 3G, to 4G, to 5G, we also progress from having a cell tower on a mountain top, 90 miles away, to having a cell tower on a lamppost, outside your bedroom window.

1G is what we had in the 1980s. And until 1996, the phones were large, not many people had them, and the cell towers were few, and very far between, mostly around metropolitan areas.

The few people that used cell phones lost many braincells, and some got brain cancer. But the general population was not much affected.

Analogue signals are smooth sign waves, continuous waves. Each frequency can only serve a single cell phone user.

2G is digital. Digital means: pulsed. Everything is coded in zeros and ones. 2G came to the US in late 1996. The telecommunications industry wanted to put a cellphone into the hands of every man, woman and child on earth. And in order to do that they needed a much denser network of cell towers. And they needed them everywhere, not just in metropolitan areas, but in small towns, forests, wildlife refuges, wilderness areas, and national parks.

They sold these phones as being necessary for emergencies and they could not sell them unless they could assure people they could work wherever they lived, and wherever they travelled.

2G was digital for two reasons.

First: each frequency could be used simultaneously by many users. They could divide a single frequency into time slots. One time slot per user instead of one frequency per user. Or they could assign a different digital code for different users of the same frequency. So they didn't need quite so many towers if they were digital.

Second: They wanted all cell phones to be able to save and store information that could be downloaded onto a computer.

2G caused enormous health problems. It injured millions. It caused the influenza epidemic of 1996 through 1997. It killed at least ten thousand in the USA in a matter of months according to statistics in the Centers for Disease Control.

I am a refugee from 2G technology.

Some people say that pulsed signals are more harmful than continuous waves. That is not always true. They both cause cancer and diabetes as far as we know equally.

Continuous waves cause worse damage to the blood-brain barrier than pulsed signals. Pulsed signals are more damaging the heart, and the nervous system.

It depends on which effects you're looking at.

3G came to the US in 2004. 3G were the first smart phones. Now you could send text messages and you could get onto the internet with your phone. Cell phones were now little computers.

3G needed a lot more towers.

4G added still more capabilities. It was much faster. You could stream video on your phone. 4G needed to be much faster because 3G was slowing way down due to the constantly increasing traffic and the increasing number of users. 4G required still more towers.

Each upgrading service injured additional people, killed additional people and created additional refugees who can no longer live in society.

5G will still be digital, but it will be radically different in a number of ways. Necessarily so because there is no way to connect a trillion [1.000.000.000.000] separate objects to the internet which is what the Internet of Things is all about. There is no way to do that with traditional cell towers and with the frequencies currently in use. There simply is not enough bandwidth. If you understand that bandwidth means radiation then you can begin to grasp the enormity of 5G. At millimeter wave frequencies a wireless company will be able to own five gigahertz continuous electromagnetic spectrum. But even that much spectrum, even that much radiation, cannot connect a trillion [1.000.000.000.000] separate devices unless cell towers and cell phones are completely redesigned.

5G is being created because of consumer demand. Too many devices are being connected up to the internet. Devices in homes, businesses and automobiles. Everyone is using their devices at all hours of the day. 4G is slowing way down and the wireless industry is projecting into the future and building a robust network that will accommodate hundred billion [100.000.000.000] devices or even one trillion [1.000.000.000.000] devices all operating simultaneously.

The new network will use something called phased arrays. That means your cell phone will have within it an array of dozens of antennas all working together to shoot a powerful laser-like beam at the nearest cell tower. And instead of having three, six, or nine antennas, broadcasting in all directions, the cell tower will have an array of hundreds or thousands of millimeter sized antennas, all working together to shoot multiple individual laser-like beams at you, who is holding a cell phone, and the beams which will have an effective radiated power of up to 100.000 watts or more, will track you wherever you go. Needless to say birds that get in the way of these beams will be in trouble. So will insects, which are millimeter sized creatures, that will resonate and selectively absorb the millimeter frequencies that will be used for 5G.

10:55 – 4. WiFi refugees

At least 20.000.000 people in the world, and I estimate that conservatively, have already been injured by cell phones and their infrastructure so severely that they cannot work. They are driven out of their homes and their cities and they cannot live in society. They are environmental refugees and they are in every country. Many are housebound and never venture outside. It's not just because of cell towers and WiFi, it's because every person in the world has a cell phone.

They never go out in society to avoid being tortured whenever someone pulls out a phone and makes a call or sends a text or takes a picture or even sits near them with a phone in their pocket because radiate even when they're off as long the battery is in them.

Many of these people are homeless, living in cars and tents, in remote places, committing suicide, and no one comes to their aid. Many are your friends, and neighbours, your doctors, your children's teachers, many more are your former friends and neighbours, your former doctors, your children's former teachers, perhaps your ex-spouse, your mother, or father, or son, or daughter, or cousin.

12:27 – 5. EHS

These are people that are called, wrongly, electrically sensitive. Just as the people who have been poisoned by the millions of petrochemicals that have rained down on our world since WWII are called wrongly chemically sensitive.

Electrical sensitivity is not a disease, it is not a medical term,

- it is a purely political term;
- it is a term that allows everyone who uses a cell phone or a wireless computer to pretend that these devices are not poisoning them and that the people who have woken up to the truth, who have not only woken up to the truth, but who dare to speak the truth;
- it is a term that allows everyone who is still in denial to pretend that such people are abnormal, and less than human; it is a term that allows the purveyors of these devices to sell them with a clear conscience, to pretend that they are not committing a crime against all humanity;
- it is a term that allows people to pretend that their own poor memory and inability to sleep or their high blood pressure or their multiple sclerosis, have nothing to do with their own cell phone and their wireless router;
- it is a term that allows the screams of the people who not only managed to figure out what is killing them but who dare to insist that this is not okay, that this is not normal, that this must stop;
- it is a term that allows their screams on behalf of themselves and their beautiful planet to be ignored;
- it is a term that allows everyone who has opened up their eyes to what has actually

happened, happening, as though they are still blind instead of being listened to;

- it is a term that allows doctors to prescribe anti-anxiety medications, antidepressants, and sleeping pills instead of telling their patients to get rid of their WiFi, and throw away their cell phones;
- it is a term that allows people to undergo hip replacements, instead of keeping their cell phone out of their pocket, to undergo heart transplants instead of throwing away their wireless devices.

14:54 – 6. Conflict-minerals in your cell phone

Because of cell phones the worst humanitarian crisis on the planet is occurring right now and for the past twenty years in the Democratic Republic of Congo.

There is a rare earth mineral in your cell phone, called tantalum. That is extracted from an ore called coltan.

- the vast majority of the world's coltan is located in Eastern Congo
- a lot of that coltan is being mined by hand by child slaves
- in the Ituri Province, of the Congo, where the rainforest is being cleared, the Eastern Lowland Gorilla, which is the world's largest gorilla subspecies, is being driven to extinction
- ethnic cleansing is wiping out all the villages of that province
- the Mbuti pygmies, who used to inhabit the Ituri rainforest that used to exist, are being slaughtered
- all to clear an immense area of land, in order to mine, more and more and more and more coltan, for the billions of throwaway devices that you are holding in your hands that become obsolete and must be replaced by virtually every year
- an estimated 2.000.000 people in eastern Congo, many of them children, many of them virtual or actual slaves, are mining coltan by hand under appalling conditions, to be shipped to processing plants, in China and East Asia, before winding up in your cell phone

The conflict in Congo is called a civil war by the media. It is not. It is a war for control over the world's most prized mineral deposits. An estimated 5,4 million people died in the first decade of the war over coltan. No one knows how many died in the second decade. The cause of all this havoc and destruction, is the cell phone.

16:57 – 7. All in order to serve YOU

If you want instant communication and information at your fingertips at all times, you're going to destroy the earth. As soon as you buy a cell phone and register it with a service provider, that provider is required by law, to put up enough towers to serve you, wherever you live and wherever you travel. The more often you go on the internet and the more devices you own that go on the internet, the more towers your service provider has to erect, until it eventually runs out of spectrum, and has to go to the FCC, and ask for more spectrum, in order to serve you, and as soon as the FCC auctions off enough spectrum

the companies that buy the new spectrum are required, by law, to put up enough towers and antennas, to make use of it, and that is where we are today. The FCC plans to auction off millimetre wave spectrum on November 14th, 2018, and in order to make use of that millimetre wave spectrum, your service provider will have to put up antennas, on a pole outside your bedroom window.

18:14 - **8. 5G – Intensification of the destruction**

5G is just an intensification of the destruction that has been going on for 22 years. The microwave devices that you carry in your hands will be much more powerful. The antennas in the streets and in your children's playground and in the steeples of your churches will multiply tenfold, a hundredfold. The birds and insects of this world will be replaced by laser-like beams whizzing by at all times. Instead of every second man and every third woman developing cancer we will all develop cancer, we will all develop diabetes.

Contrary to what all people are saying, the solution is not fiber optic cable. Many people would like to think that only when we connect it up every house, and every business in the world to fiber optic cable, we all could have superfast internet, without wireless. What people do not know is that the wireless industry itself is right now spending 150 billion dollars, laying fiber optic cable everywhere on the planet. It is the only way they are going to have fast enough speeds for 5G.

They have to shoot lasers all over the planet through fiber optic cable in order to shoot laser-like beams all over the planet through the air. Once high-speed optic fiber optic trunks are laid everywhere they're going to stick millions of antennas into that cable and broadcast 5G. They want to tear out all existing copper wire, all of distant coaxial cable and only old lower speed fiber-optic cable and replace it all with super high-speed fiber-optic trunks that they can stick antennas into. If you advocate for high-speed fiber you're advocating for 5G.

20:20 – **9. LiFi – a Trojan horse**

Some people will say LiFi will be the solution.

Instead of dangerous microwaves we can use safe ordinary light. I have news for them.

LiFi will be worse.

It will not be ordinary light. It will be digital, pulsed light. Pulsed at the same frequencies that are destroying our world. They are brainwave frequencies. They are frequencies of nervous impulses. They are frequencies of our organs and our cells and we will absorb them much more efficiently. If the carrier wave is light then the carrier wave is microwaves. We did not evolve with microwaves. Microwaves are foreign to us, our bodies reject them. Light however is a necessary nutrient. The blood in our veins is blue and the blood in our arteries is red because we absorb red and blue light as well as the colours in between. [Blood in arteries is bright red and blood in veins is dark red that looks blue when covered by skin. It is dark red because it lacks oxygen.] LiFi will destroy us from within like a Trojan horse.

21:36 – 10. SPACE: enormous fleets of 5G satellites in low and medium orbit around the earth

So far I have only been talking about what's happening on the ground.

The «3rd Generation Partnership Project» (3GPP) released.... -that's a world wide organisation that sets the standard for all wireless technology- it released technical specifications for 5G in June 2018. They include not only specifications for 5G on the ground, but 5G specifications for 5G satellites in space, and the fleets of 5G satellites, will be enormous.

The FCC and the International Telecommunications Union have already approved some of these projects. A company called «WorldView», w o r l d v i e w, is preparing to launch a fleet of 4540 satellites into low and medium orbit around the earth in order to provide high speed low latency internet to every square inch on the planet.

The partners and investors and customers of this project already include Airbus, Amazon, Virgin Galactic, Qualcomm, Hughes Network Systems, Intel Side of Luxembourg, Marker LLC of Israel, Grupo Salinas of Mexico, SoftBank of Japan, Bharti Enterprises of India, Coca Cola and Honeywell. Elon Musk's company SpaceX, is preparing to launch 12.000 satellites into low orbit, to do the same thing. Each satellite will have thousands of millimeter sized antennas onboard, all arranged in a phased array, all working together to focus narrow beams of energy at the ground all over the planet. Each beam, from each satellite, will have an effective radiated power of up to 5 million watts.

Boeing already has permission to launch 2956 such satellites into low orbit.

23:48 – 11. What will this do to earth and every living thing on earth?

Nobody is stopping to ask what this will do to earth and every living thing on earth. I am not even talking about the effects of rocket exhaust from thousands of rocket launches on the ozone layer, and on the earth's climate, which will be significant, and perhaps catastrophic.

I am talking about the alteration of the electromagnetic environment of the entire planet. What effect will 20.000 satellites, each one emitting beams, as powerful as 5 million watts, into the earth's magnetosphere? What effect will that have on life on the surface of our fragile planet?

I have been monitoring the effects of low orbit communication satellites, ever since the first ones began service in 1998. On September 23rd 1998, the 66 satellites launched into low orbit by the Iridium Corporation, began commercial service to the world's first satellite phones.

People from all over the world reported to me that beginning early in the morning on September 23rd

- it felt like a knife went through the back of their head
- or they had stabbing pains in their chest
- or they had sudden onset of headaches
- dizziness

- nausea
- nosebleeds
- asthma attacks

That was 66 satellites. What will 20.000 do?

25:31 – 12. The Global Electrical Circuit

Electromagnetic energy is invisible. So, people ignore it. But it is all around us, and in us and through us, and it is the basis of life. The atmospheric electric field, the electric field in which we all live and work and function has an average value of 130 volts per meter. There is a small but constant electric current coming down from the sky into the earth at all times that flows through every living thing. That electric current enters the top of every tree, flows down through the sap and into the earth through the roots. That electric current enters the top of our heads, flows down through our acupuncture meridians and into the earth through the soles of our feet. It is what gives us life, maintains our health, and regulates our biological rhythms.

That current is part of the global electrical circuit, that atmospheric physicists study. The electric current courses through the ionosphere above us, flows gently down to the atmosphere, to the earth in fair weather, courses through the earth beneath our feet, and flows violently up to the sky during thunderstorms. We pollute the global electrical circuit at our peril.

Nobody is stopping to ask what 20.000 satellites -located directly IN the ionosphere, each one emitting digital pulsed millimeter wave radiation of up to 5 million watts- nobody is stopping to ask what that will do with every living thing below.

27:30 – 13. «We»

We are working on these problems, and by «we» I mean I, and cooperation with other people throughout the world, and in New Mexico, and in the United States. We are working at these problems at the national and international levels.

Here in New Mexico, we are going to file a lawsuit, in Santa Fe, shortly, asking a judge to declare that any law passed by city, state, or federal government that deprives injured people of any remedy for their injuries. We're going to ask the court to declare such laws unconstitutional.

That includes specifically an ordinance that was passed by the Santa Fe City Council one year ago, which says that antennas in the public rights-of-way, within the city of Santa Fe, are no longer subject to land-use review, a law that was signed by governor Martinez in March and is scheduled to go into effect on September 1st [2018], which says that antennas in the public rights-of-way anywhere in New Mexico, are no longer subject to land-use review and we're going to challenge section 704 of the Telecommunications Act of 1996, which for the past 22 years has deprived injured people of any right to protest cell towers on the basis of health or to collect any damages if they are injured.

This lawsuit has the potential for setting a nationwide precedent in a short amount of time, provided we raise enough money to pay for experts and lawyers. Please contact me afterwards, or call me or email me, if you want to help. We have a lawyer who gets how huge this lawsuit is, who is drafting the complaint right now, and who wants to file it by the end of August [2018].

An «International Appeal, to stop 5G on Earth and in Space», has been drafted, and will be released hopefully this week. I have been helping with that effort. Our goal is to get thousands of signatures of scientists, doctors and environmental organizations, all over the world, and to formally present the appeal in many languages to the governments of all nations by the end of September 2018.

Also contact me afterwards, or call me, or email me later, if you want to help with that project. My phone number and email address are on the handouts that I will give you. All of these efforts, our efforts here in New Mexico, lobbying efforts in Congress, and in state legislatures around the country, class-action lawsuits that are being filed in Canada and Australia, and the «International Appeal» that we will present to every government.... all of these efforts depend on the public.

The Telecommunications Industry is the largest industry on the planet. No legislature, no judge, and no government official will risk damaging this industry and threatening the world economy unless the public rises up and lets them know that we do not want these products and services anymore.

None of these efforts can succeed unless the monkey opens his fist. If you want to save yourself and your neighbours and your children and all the birds and the bees and the butterflies and the frogs and the bats and the trees and the Lowland Gorillas, and the Pygmies and the villagers of Ituri province in the Congo, you have to throw away your cell phone.

There is no more time for excuses.

It has to start here and it has to start now, and it has to spread from here throughout the world.

C. Additional information

LECTURE

- **International Appeal:**

Website: <https://www.5gspaceappeal.org/the-appeal/>

Donate: <https://www.5gspaceappeal.org/donate>

- **Articles:**

Cell Phones, Questions and Answers – <http://www.cellphonetaskforce.org/cell-phones-questions-and-answers-2/>

From Blankets to Bullets – <http://www.cellphonetaskforce.org/5g-from-blankets-to-bullets/>

Planetary Emergency – <http://www.cellphonetaskforce.org/planetary-emergency/>

- **Book:**

«The Invisible Rainbow, the history of electricity and life». It can be ordered on the website: <http://www.cellphonetaskforce.org/buy-the-invisible-rainbow/>

All of the proceeds from sales of the sales of the book are being spent on the effort to stop 5G.

- **The Santa Fe Lawsuit:**

Can be followed here: <http://www.cellphonetaskforce.org/5g-litigation/>

«WE»: THE CELLULAR PHONE TASK FORCE

About

President: Arthur Firstenberg

The Cellular Phone Task Force is a *nonprofit membership organization*. It was founded in July 1996 in response to the health and environmental threats posed by the launch of the wireless revolution in the United States.

Website: <https://www.cellphonetaskforce.org/about-us/>

Contact: <https://www.cellphonetaskforce.org/contact-us/>

Join / Donate

Donations:

1. <https://www.cellphonetaskforce.org/donate/> (via PayPal)
2. <https://www.5gspaceappeal.org/donate>

Bank / Transfer details for direct banking from your own bank:

Account holder: Cellular Phone Task Force

Address: P.O. Box 6216, Santa Fe, NM 87502, USA

Account number: 39033758

Name of bank: Century Bank

Address of the bank: P.O. Box 1507, Santa Fe, NM 87504, USA

SWIFT Code number: CEYTUS51 (eventually: CEYTUS51XXX)

ABA Routing number / National Bank Number: 307072443

Donation for [make your choice]:

1. Annual Membership Dues: \$50
2. Santa Fe Lawsuit
3. 5G Space Appeal
4. General Donation

Options [make your choice]:

One-off donation

Monthly [via automatic transfers]

Once per year [via automatic transfers]

Stock transfers

The Cellular Phone Task Force's brokerage account can accept stock transfers, but only stocks that are traded in the U.S.

The donor needs the following details:

To: Cellular Phone Task Force, Inc

Brokerage account number: 493039259

TD Ameritrade's DTC number: 0188

If the donor is American, it is a charitable gift.

Donations

The Cellular Phone Task Force is a *nonprofit membership organization*. 100% of your donation of any size will go directly to the effort to continue this work. Donations to the Cellular Phone Task Force, Inc. bank account from Americans are also *charitable gifts* and are *tax-deductible*. The Cellular Phone Task Force's Employer Identification Number (tax ID number): 11-3394550

For contributions over \$5,000 or stock transfers, please contact Arthur Firstenberg, info@cellphonetaskforce.org

The Cellular Phone Task Force searches for:

1. a secretary
2. an administrator

Contact: info@cellphonetaskforce.org

Interview: The Hidden Dangers of Wireless & Cell Phone Radiation

An audio recording of an interview conducted by Tonio Epstein and Arthur Firstenberg that was published on Soundcloud by WGDR, Goddard College Community Radio, Plainfield, United States, on April 6, 2018.

- Soundcloud: <https://soundcloud.com/wgdr/the-magical-mystery-tour-apr-6-2018-the-hidden-dangers-of-wireless-cell-phone-radiation>
 - Multerland blog: <https://multerland.wordpress.com/2019/01/20/arthur-firstenberg-the-hidden-dangers-of-wireless-cell-phone-radiation/>
 - Multerland YouTube: https://www.youtube.com/playlist?list=PLvjgztX_Uo3b58EUNPy_lw4zDnvNSZWIA
 - Multerland Vimeo: <https://vimeo.com/album/5747663>
-

Warnings about Cell Phones

A. How to «throw» your mobile in an environmentally friendly way

Mobiles contain toxic elements, such as the battery, metals and minerals like lead, cadmium, nickel and mercury. Mobile phones and accessories can't be recycled in your general waste bins.

Be aware of the personal data in your mobile: ask «green» specialists working in a recycle-data-shop/workplace to back up these for you in e.g. a USB stick, and to remove all the rest. You will find the nearest green workplace or e-waste collection point on the

web. Otherwise bring it to a civic amenity site, where is also a point to collect electrical waste.

Mobile phones and accessories can't be recycled in your general waste bins.

Visit [MobileMuster](#) for tips on how to manage your data.

Visit to get inspired to create a cleaner environment:

<https://recyclingnearyou.com.au/phones/>

B. What's inside of your cell phone?

1. Blood

«Blood in the Mobile» is a 2010 documentary film by Danish film director Frank Piasecki Poulsen. The film addresses the issue of conflict minerals by examining illegal cassiterite mining in the North-Kivu province in eastern DR Congo. In particular, it focuses on the cassiterite mine in Bisie.

Film documentary: <https://www.youtube.com/watch?v=Tv-hE4Yx0LU>

Info: https://www.wikiwand.com/en/Blood_in_the_Mobile

Blood on Your Handset

Is your cellphone made with conflict minerals mined in the Congo? The industry doesn't want you to know.

<https://slate.com/news-and-politics/2013/09/conflict-minerals-from-the-congo-is-your-cellphone-made-with-them.html>

Villagers of Ituri Province Congo, Alex McBride Wilson/Al Jazeera

<https://www.aljazeera.com/indepth/inpictures/violence-returns-dr-congo-ituri-province-180410102912520.html>

2. Conflict Metals and Minerals

Minerals in your mobile:

Cassiterite, Coltan, Tantalum, Neodymium, Silicon, Graphite, Bauxite, Bastnaesite, Monazite, Xenotime, Gallium, Sphalerite, Arsenopyrite, Chalcopyrite, Bornite.

<https://www.usgs.gov/news/ordinary-minerals-give-smartphones-extraordinary-capabilities>

And:

1. **Gold:** This precious metal doesn't just make very pretty jewellery – it's highly prized for use in making mobile phones because it is chemically stable and conducts electricity. Small amounts of gold are used to make the mobile phone circuit board. The world's top exporter of gold is China, followed by South Africa.
2. **Lithium:** Can the world's supply of this soft, silvery white chemical element keep up with the huge demand for use in electronic devices such as mobile phones? Lithium is primarily used in the production of mobile-phone batteries. It is mined from salt lakes and hard-rock ore. And the world's top exporter of lithium is – drum roll –

- Australia.
3. **Aluminium:** A silvery, ductile metallic element, aluminium is used in mobile phone cases and components. It is the most abundant metal in the Earth's crust and is mined in Australia, Brazil, China, India, Guinea, Indonesia, Jamaica, Russia and Suriname. The world's top aluminium producer is China.
 4. **Cobalt:** Far from just a gorgeous, blue jewellery component, this hard, silver-white metal is used to make the rechargeable batteries in mobile phones. It is produced by smelting. The Democratic Republic of the Congo is the world's top exporter of cobalt, with almost 40 per cent share.
 5. **Copper:** Said to be the first metal ever used by man, copper is used as an electrical conductor in the mobile-phone circuit board. Most of this malleable, reddish-brown metal is mined or extracted as copper sulphides from large, open-pit mines. Chile is the world's top mine producer of copper with at least one-third share.
 6. **Lead:** Our mobile phones would be dead without lead – it's a soft, heavy toxic malleable metallic element used in the solder that joins the parts of our beloved iPhones. Lead is produced from mined lead ore and from recycling. The world's top lead producer is China, followed by Australia and the United States.
 7. **Nickel:** A hard, malleable silvery metal, Nickel is used in mobile phone electrical connections, capacitors and batteries. The metal is extracted from its ores by heating and reducing the ore. The Philippines is the world's largest nickel-producer, closely followed by Russia, Canada and Australia.
 8. **Plastics:** Plastic fantastic – manufactured from crude oils in the earth, heavy petrol is distilled from the crude oil and then treated with heat to create hard plastic. Plastics and fibreglass are used to make mobile-phone circuit boards, which are then coated with gold plating.
 9. **Silver:** A soft white precious metal, silver is also used in mobile-phone circuit boards. The metal is primarily produced as a by-product when producing copper, gold, nickel and zinc. The world's top silver producer is Mexico.
 10. **Zinc:** Said to have dietary health and well-being benefits, zinc is a bluish-white metal; brittle at ordinary temperatures but malleable when heated. It too is used in the all-important, mobile-phone circuit board. About 70 per cent of the world's zinc originates from mining, while 30 per cent comes from recycling. The world's top exporters of zinc are China, Australia and Peru.

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